Registration Costs and Voter Turnout: Evidence from a Natural Experiment

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December 3, 2015

Abstract

We exploit a natural experiment in Massachusetts in 2012 to estimate the causal effect of lowering voter registration costs on: voter registration, turnout and voting behavior in presidential elections. Both a within Massachusetts specification and a cross-state specification (utilizing Vermont, Maine and New Hampshire data) find a statistically significant effect on voter registration and turnout that is of a material magnitude. However, conditional on registration we find no material difference in turnout. Finally, we find a large treatment effect on Democrat voteshare. Our results highlight the importance of voter registration costs for electoral participation, especially for citizens from lower socioeconomic backgrounds.

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1 Introduction

Since at least Hegel it has been recognized that, in a large electorate, the probability of being pivotal in an election is small.[1] Some estimates put the chance at around one in 89,000 in a US Congressional election (Mulligan and Hunter (2003)). There may be other benefits of voting such as fulfilling a sense of civic duty, but Hegel's calculus still suggests than even relatively small costs of voting can have a material effect on turnout. Of course, in the United States, one cannot vote if one is not registered.[2] Getting voters to the polls is thus a two-part problem: they must be registered and, conditional on that, they must decide to turnout.

From both a practical and a policy standpoint the questions of what affects turnout and how this varies by demographics are very important, and, as we will discuss below, a large literature has addressed these questions. There has been significantly less attention paid to the determinants of the *registration* of voters. This is despite the perceived importance of resigtration, as reflecting in the *National Voter Registration Act* of 1993 ("NVRA"). Moreover, there are large differences in registration based on socioeconomic, racial, and other demographic factors that are well known to be associated with voting preferences. Thus, registration *per se* can have a significant affect on electoral outcomes and on the degree of representation of various groups within the electorate.

Figures 1 and 2 show the differences in registration and turnout conditional on registration across income and schooling levels in the United States. There are large differences in registration rates. Lower socioeconomic status is associated with low registration rates. However, conditional on registration the differences in voting bahavior are much smaller.

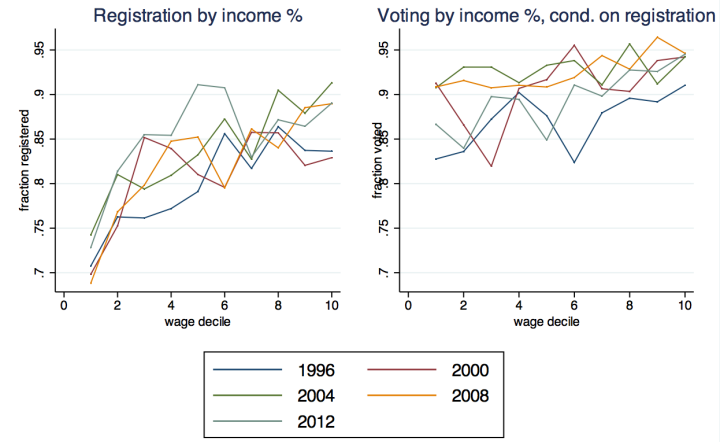
The relative paucity of causal evidence[3] on voter registration is, perhaps, because it is

[1] For example, Buchanan (1974) cites a translation of Hegel in 1821 as writing: "As for popular suffrage, it may be further remarked that especially in large states it leads inevitably to electoral indifference, since the costing of the single quote is of no significance where there is a multitude of electors. Even if of voting qualifications highly valued and esteemed by those who are entitled to, they still do not enter the polling booth. As the result of an institution of this kind is more likely to be opposite of what was intended; election actually falls into the power of a few, of a caucus, and so the particular and contingent interest which is precisely what was to have been neutralized."

[2] The one exception is North Dakota.

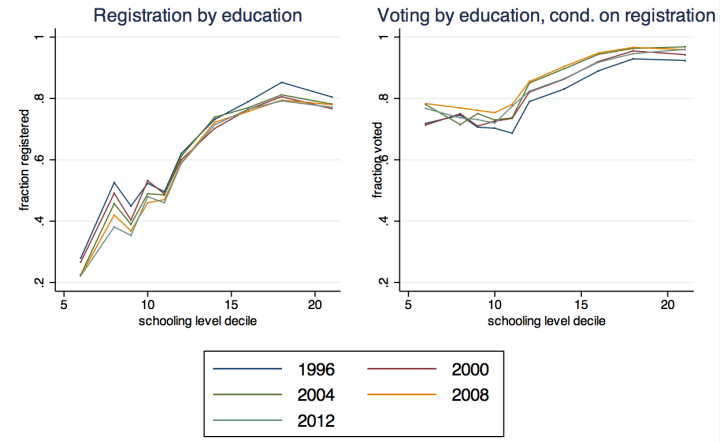
[3] As we discuss below, a notably recent exception is a field experiment by Nickerson (2014)

Figure 1



Source: CPS November supplements, 1996, 2000, 2004, 2008, 2012

Figure 2



Source: CPS November supplements, 1996, 2000, 2004, 2008, 2012

difficult to randomly register voters and hence uncover the causal effect or registration drives. To circumvent this difficulty, we exploit a natural experiment in Massachusetts in 2012 which allow us to observe an exogenous decrease in the costs of voter registration and increase in information about registration.

On May 15, 2012 the Secretary of the Commonwealth of Massachusetts and the Massachusetts Department of Transitional Assistance (DTA) were sued for failing to comply with the NVRA requirements in public assistance offices. On July 5th 2012, a settlement agreement was reached between the parties involved in the court filing. The Com-

monwealth and DTA agreed to improve voter registration services at public assistance offices, conduct community voter registration outreach activities in areas with high concentrations of DTA clients, and send mailings to all Massachusetts residents who had been clients of the DTA from June 2011 to May 2012. These mailings provided information about registration deadlines, election dates, and included a voter registration application with a pre-paid return envelope. In total, more than 470,000 letters were mailed, and according to the DTA, 31,000 voter registration applications were completed and returned.

We treat the actions undertaken in the settlement agreement as a natural experiment to analyze the impact of lower registration and information costs on election outcomes. We exploit variation in treatment intensity (i.e. exposure to mailings and outreach activities) that results from cross-municipality differences in poverty levels and public assistance participation. We compare registration and election outcomes in 2012 with those in 2008, when no comparable intervention affecting voting costs was in place.

We find that the intervention had a positive effect on registration and turnout rates. However, conditional on registration we find no effect of the policy on turnout. We conclude that the intervention affected the first stage decision to register, but did not affect the second stage decision to vote. This suggests that among low income populations, registration and/or information costs are a more important barrier to eventual turnout than the costs and benefits associated with voting.

There is, of course, a large literature on the determinants of voter turnout. Moreover, randomized field experiments have often been utilized, allowing the genuine causal effect of a particular intervention to be obtained (see, for instance: Gerber and Green (1999, 2000), Gerber et al. (2003), Nickerson (2006), Michelson (2006), Arceneaux and Nickerson (2009), Dale and Strauss (2009), and very early work by Gosnell (1927)). These experiments, however, focus on how to get more registered voters to turnout, rather than getting non-registered voters to register. A notable exception is Nickerson (2014) who randomly asigns a face-to-face registration drive across 620 streets in six cities. He finds a 4.4% increase in registration and that 24% of those registered as a result of the intervention turnout to vote. Moreover, he finds that the registration effect is larger on poorer streets, but the turnout effect is larger on more affluent streets.

Another strand of literature considers what proportion of (newly) registered voters turnout to vote. Papers that utilize variation in legal rules over time or across political jurisdications yield varied estimates. For instance Martinez and Hill (1999) find that very few such registrants vote, while Brown et al. (1999), Mitchell and Wlezien (1995), and Timpone (1998) find large effect. Other papers find more intermediate effects (see, for instance: Knack (1995) and Ansolabehere and Konisky (2006)). These wide range of estimates are unsurprising given that election law changes are typically not random, and thus selection and treatment effects are conflated.[4]

We contribute to both strands of literature. Our results provide evidence on the "registration elasticity" of lowering both the direct and informational costs of voter registration. Because we have plausibly causal estimates we also speak to efficacy of the ultimate goal of registration–getting people to vote. The fact that, conditional on registration, turnout is not materially different suggests that the registration margin is a particularly important driver of overall electoral participation.

Finally, our results speak in part to the impact of voter-ID laws, such as those that have been recently enacted in several states and whose constitutionality is still to be determined by the United States Supreme Court. In an economic sense, voter-ID laws are an increase in the cost of voter registration. Those without a valid ID would need to obtain one which involves both financial and transaction costs. Whatever the benefits–in terms of reduced electoral fraud–maybe be, our results suggest that those additional registration costs have a significant negative effect on registration and turnout. Moreover, our results suggest that this skews disproportionately by voting intention. We return to this is our concluding remarks.

The paper proceeds as follows. Section 2 details the facts surround the Massachusetts suit and settlement and Section 3 describes the data. Section 4 is the heart of the paper, where we artciulate our empirical strategy and report the results. Section 5 contains some concluding remarks.

[4]Another series of papers utilize plausibly exogenous shifts in information to asses the effect of information on turnout. Stromberg (2004) finds that areas with a higher share of radio ownership, where information about elections would have been broadcast, had higher voter turnout during the 1920s-1930s. On the other hand, Gentzkow (2006) finds that substitution away from media outlets with higher levels of political coverage reduces turnout. Lassen (2005) finds that individuals that are more informed about the issues being voted on are more likely to vote.

2 The natural experiment

The National Voter Registration Act of 1993[5]–also known as the "Motor Voter Act" was designed to increase voter registration by requiring state governments to offer voter registration to eligible persons under a variety of circumstances: notably, if such a person applies for or renews a driver's license, or receives public assistance.

Specifically, The NVRA requires, *inter alia*, that all public assistance offices in all states offer clients the opportunity to register to vote with every new or renewal application for benefits and change-of-address transaction (NVRA Section 7, 1993).

On May 15, 2012 the Secretary of the Commonwealth of Massachusetts and the Massachusetts Department of Transitional Assistance ("DTA") were sued for failing to comply with the NVRA requirements in Massachusetts public assistance offices. The DTA administers Supplemental Security Income ("SSI"), Public Assistance, and Supplemental Nutrition Assistance Program ("SNAP", i.e. food stamps).

On July 5th 2012, a settlement agreement was reached under which he Commonwealth and DTA agreed to improve voter registration services at public assistance offices, conduct community voter registration outreach activities in areas with high concentrations of DTA clients, and send mailings to all Massachusetts residents who had been clients of the DTA from June 2011 to May 2012. These mailings provided information about registration deadlines, election dates, and included a voter registration application with a pre-paid return envelope. In total, more than 470,000 letters were mailed, and according to the DTA, 31,000 voter registration applications were completed and returned.

We treat the actions undertaken in the settlement agreement as a natural experiment in lowering registration and information costs. We exploit variation in treatment intensity–specifically exposure to mailings and outreach activities that results from cross-municipality differences in poverty levels and public assistance participation. We examine registration and election outcomes in 2012 and 2008, when no comparable policy affecting registration costs was in place.

[5] 42 U.S.C. §§1973gg - 1973gg-10

3 Data

There are two main components of our data: (i) registration, turnout and voting behavior, and (ii) demographic and poverty indicators.

The voter registration and turnout data come come from the relevant state departments of Election Services. In Massachusetts we have 351 municipalities in 14 counties and observe the number of registered voters in February and (end of) October 2012 (and also 2008), the number of voters who vote for each presidential and vice-presidential candidate in 2008 and 2012.

In Vermont we have 233 municipalities in 14 counties with registration data in March and November), and 2008 and 2012 presidential/vice-presidential voting behavior. In New Hampshire we have 240 municipalities in 10 counties with registration data in January and November, along with 2008 and 2012 presidential/vice-presidential voting behavior. Finally, in Maine we have 490 municipalities in 16 counties, with registration data in June and November, and 2008 and 2012 presidential/vice-presidential voting behavior.

The demographic and poverty indicators are drawn from the American Community Survey (ACS). We use the 2005-2009 5 Year sample as estimates for 2008 and the 2007-2011 5 Year sample as estimates for 2012. Demographic data include: percent female, percent black, percent Hispanic, Median Age, population over 18 years old, proportion with with BA degree or more, proportion with less than high school education, and the proportion of the population who lived in different county one year ago.

Our constructed sample excludes municipalities with high (above 50%) reported margin of error in the population variable. These mostly include very small municipalities. Therefore, our final dataset includes 350 municipalities in Massachusetts, 233 municipalities in Vermont, 463 municipalities in Maine and 233 municipalities in New Hampshire.

The ACS data include various poverty indicators which serve as a proxy for treatment in our setting. In particular, we observe: (i) percent receiving Supplemental Security Income (SSI) (largely: aged, blind, or disabled), (ii) percent receiving Public Assistance (PA) (general assistance and TANF), (iii) percent receiving Supplemental Nutrition

Assistance (SNAP) (food stamp benefits), and (iv) percent below the federal poverty line.

[Table 1 and 2 here]

Tables 1 and 2 contain descriptive statistics of these data by state, for 2008 and 2012.

4 Empirical strategy and results

4.1 Empirical strategy

Our analysis uses two empirical approaches to identify the effect of settlement agreement on registration and voting outcomes. Under both strategies we consider three dependent variables of interest: (i) the change in registration rates, (ii) voter turnout, and (iii) the Democratic voteshare. First, we analyse the relative outcomes in 2008 and 2012, before and after the settlement, in Massachusetts municipalities based on their exposure to the settlement actions which we measure using a range of poverty indicators. If the settlement actions were effective, we should see larger changes in registration and voting behaviour in municipalities with higher proportions of DTA recipients. Second, we compare changes in elections behaviour in Massachusetts municipalities with changes in comparison states of Maine, New Hampshire and Vermont. These estimates are robust to Massachusetts specific shocks and differential trends in registration and voting behaviour between Massachusetts and comparison states.

4.1.1 Within Massachusetts analysis

We evaluate changes in registration and voting behaviour across Massachusetts municipalities. There is a sufficient variability in poverty indicators across municipalities that we have enough variation for the estimations.[6] Our identification strategy relies on the assumption that, if there were no settlement agreement, poverty rates or concentration of public assistance recipients in differentmunicipalities should not lead to differential

[6]Percent of public assistance recipients (% receiving SSI + % receiving Public Assistance) ranges between 0% and 21% in 2008 and between 0% and 24% in 2012. Below poverty line rates are in the 0%-35% range in 2008 and in 0%-38% range in 2012. Proportion of SNAP recipients is in 0%-30% range in 2008 and in 0%-33% range in 2012.

changes in registration and voting behavior.

The first strategy is to compare 2008 outcomes (pre DTA settlement/treatment) with 2012 outcomes (post DTA settlement/treatment) in Massachusetts at the municipality level. This has the virtue of being a clean test of the treatment effect of a lowering of voter registration and information costs. A potential drawback, however, is that it does not account for other factors occurring across states that could affect registration and turnout.

Our specifications control for a range of other socioeconomic factors that may affect voting behaviour. The estimations control for average age, proportion of women, proportions of blacks and hispanics, proportions of individual with low and high education (less than high school and college degree or higher), proportion of inter-county movers (such move requires a new voter registration). The estimations also include county dummy variables to control for any ballot differences at the county level.

First, we compare the change in voter registration across Massachusetts municipalities between October 2010 and February 2012. The settlement agreement and its consecutive actions took place starting July 2012 and registration trends before July 2012 should not be affected. We estimate the following equation,

$$\left(\frac{Reg_{2010}}{Reg_{2008}} - 1\right) = \beta_0 + \beta_2 poverty_{mc} + \delta X_{mc} + \gamma X_{mc} + I(County) + \epsilon_{mc}, \qquad (1)$$

where $\left(\frac{Reg_{2010}}{Reg_{2008}} - 1\right)$ is the percentage change in registered voters between October 2008 and February 2010. Poverty measures are normalised. The subscripts m and c denote municipality and county, respectively. The vector X_{mc} includes demographic and socioeconomic characteristics of each municipality in 2012 Table 3 reports the results. Columns (1)-(3) present results that do not include county fixed effects, columns (4-(6) show results with these controls. Estimations show no statistically significant relationship between each of the three poverty measures and change in voter registration between October 2010 and February 2012. The coefficients of poverty measures are small and statistically not different from zero, suggesting that the preexisting trends in registration rates are independent of poverty measures and therefore not correlated with the intensity of treatment.

We evaluate the effects of settlement agreement on registration rates. Presidential elections took place in November 2008 and November 2012. We use municipality level voter registration data at the end of February and mid-October in 2008 and 2012 to evaluate whether the change in registration rate between spring and fall varies with the exposure to the treatment induced by settlement actions. We measure the intensity of treatment with poverty indicators and estimate the following equation

$$\begin{aligned}\Delta register_{mct} =& \beta_0 + \beta_1 Y2012_t + \beta_2 poverty_{mct} + \beta_3 Y2012_t \times poverty_{mct} \\ &+ \delta X_{mct} + \gamma X_{mct} \times Y2012_t + \epsilon_{mct}, \end{aligned} \tag{2}$$

where $\Delta register$ is the percentage change between fall and spring voter registration. The subscripts m and c denote municipality and county. Subscript t denotes the year. Y2012 is a dummy variable that takes value 1 if year=2012. The vector X_{mct} includes demographic and socioeconomic characteristics of each municipality in 2008 and 2012 (we allow the influence of demographics to vary by time and municipality). The standard errors are clustered at the county level to account for correlation in error terms within counties over time. The parameter of interest is β_3, the interaction between poverty index and indicator for 2012.

Table 4 reports estimation results of equation (1). We report β_0, β_1, β_2 and β_3.[7] Poverty indicators in 2012 have positive effects on change in registration rates (in estimations that use % below poverty line and % SSI, β_3 is statistically significant at 1% to 10% level. For example, one standard deviation increase in %SSI increases the change in registration rate by 1.1 percentage points. The coefficients of year 2012 indicator have large standard errors and are not statistically different from zero, suggesting no distinguished difference between 2008 and 2012 overall rates of growth in voter registration in Massachusetts. Assuming that there were no other policies that could differentially affect registration rates across Massachusetts (this assumption is supported by results in Table 3), the 2012 increase in registration growth in areas more affected by poverty can be legitimately attributed to the treatment effect.

[7] Complete estimation outcomes are available upon request.

Having established that there was a positive effect of the settlement agreement on registration rates, we estimate how the settlement affected voter turnout and Democrat voteshare. For our turnout specification the the left-hand-side variables we consider are defined as

$$\left(\frac{turnout_{mct}}{voteagepop_{mct}}\right), \left(\frac{turnout_{mct}}{registered_{mct}}\right), \tag{3}$$

and the right-hand-side is similar to that in equation (3).

Table 5 presents the results for voter turnout. Columns (1)-(3) show estimation results for $(\frac{turnout_{mct}}{registered_{mct}})$, columns (4)-(6) show results for $(\frac{turnout_{mct}}{voteagepop_{mct}})$. The effect of poverty indicators on turnout/population are positive and significant. For example, a one standard deviation increase in %SSI increases turnout/population by 2.4%. There is no significant effect of treatment on voter turnout conditional on registration, the estimates of poverty indicators are small and not always positive, see columns (1)-(3). This result suggests that registration and possibly information costs is the main impediment to voting for the treated population.

Finally, for the Democrat voteshare specification the two left-hand-side variables we consider are

$$\left(\frac{democrat_{mct}}{voteagepop_{mct}}\right), \left(\frac{democrat_{mct}}{registered_{mct}}\right). \tag{4}$$

Table 6 highlights our main findings from these specifications. Columns (1)-(3) show estimation results for $(\frac{democrat_{mct}}{voteagepop_{mct}})$, columns (4)-(6) show results for $(\frac{democrat_{mct}}{registered_{mct}})$. The estimates of poverty indicators on democrat voteshare out of registered are not statistically significant. On the other hand, poverty measures have a positive effect on Democrat voteshare out of population. For example, one standard deviation increase in %SNAP increases democrat voteshare in population by 1.5%. The results in columns (4)-(6) indicate that the majority of those who registered due to the actions implemented in response to settlement agreement voted for the Democratic candidate.

4.1.2 Across-state analysis

To control for alternative sources of variation in registration, turnout and voteshare outcomes, we expand our analysis to include three surrounding states of Vermont, New Hampshire and Maine.[8] The comparison of Massachusetts and surrounding states outcomes controls for contemporaneous changes in registration, turnout and democrat voteshare across municipalities with high poverty measures. If the settlement agreement affected registration and election outcomes, we should observe these effects only in Massachusetts 2012.

We find that the within-Massachusetts and across-state empirical strategies produce similar results in terms of the effect of the treatment on: voter registration, voter turnout, and Democrat voteshare.

For the change in registration outcome variable we estimate the following triple differences equation

$$\begin{aligned}\Delta register_{mct} =& \alpha_0 + \alpha_1 MA_s + \alpha_2 Y2012_t + \alpha_3 poverty_{mcst} + \alpha_4 MA_s \times poverty_{mcst} \\ &+ \alpha_5 Y2012_t \times poverty_{mcst} + alpha_6 MA_s \times Y2012_t \times poverty_{mcst} \\ &+ \gamma X_{mcts} + \eta X_{mcst} \times MA_s + \lambda X_{mcst} \times Y2012_t + \mu_{mcst}, \end{aligned} \tag{5}$$

where the notation is essentially the same as in the previous specifications, other than the necessary state subscripts. MA_s takes the value of 1 for Massachusetts municipalities. The turnout and democrat voteshare left-hand-side-variables that we also consider in this specification are defined as before. Out main focus is the α_6 coefficient.

Table 7 presents the results for change in registration rates. We find that the settlement agreement in Massachusetts led to a statistically and economically significant increase in change in registration rate. For example, one standard deviation increase in the proportion of SSI recipients leads to a 2.1% increase in change in registration rate between spring and fall in Massachusetts 2012; the results are similar when considering %SNAP as a measure of treatment intensity. To check the robustness of our finding we

[8]The comparison states of Vermont, New Hampshire and Maine were chosen because of their geographic proximity to Massachusetts and data availability.

also estimate equation (2) for each comparison state. Appendix Table 1 reports these results that show no significant change in registration rates in the comparison states (most coefficients of poverty measures in 2012 are negative or very small and not statistically significant).

Table 8 presents the results for turnout outcomes. Columns (1)-(3) show estimation results for $(\frac{turnout_{mcst}}{voteagepop_{mcst}})$, columns (4)-(6) show results for $(\frac{turnout_{mcst}}{registered_{mcst}})$. Similar to the results that use only Massachusetts municipalities, we find the settlement agreement had a large effect on turnout out of population. Turnout out of registration is not affected by the settlement, α_6 coefficients in equation (5) are not statistically significant. For example, a one standard deviation increase in %SSI leads to a 4.0% increase in turnout out of population. The difference between double and triple differences estimates are driven by significant declines in turnout in poorer municipalities in surrounding states in 2012 compared to 2008.

Appendix Tables 2 and 3 show turnout results for each of the surrounding states. Turnout conditional on registration results are reported in Appendix Table 2, these results do not show any particular trend in turnout between 2008 and 2012. The same can be said regarding turnout out of population outcomes. Results in Appendix Table 3 do not show clear trends in surrounding states but most estimates of poverty measures in 2012 are negative (and some of them are statistically significant), this is a very different outcome from what we observe in Massachusetts 2012.

Table 9 reports results for Democrat voteshare outcomes. Columns (1)-(3) show estimation results for $(\frac{democrat_{mcst}}{voteagepop_{mcst}})$, columns (4)-(6) show results for $(\frac{democrat_{mcst}}{registered_{mcst}})$. These results are also similar to the results that use only Massachusetts municipalities. The treatment has a positive effect on Democrat voteshare, the results are more pronounced when considering the proportion of Democrat votes out of population. For example, a one standard deviation increase in %SSI or %SNAP leads to 2.2% and 3.3% increase in Democrat voteshare out of population. We also document some increase in Democrat voteshare out of registered in 2012 in Massachusstes, but these increases are less pronounced. For example, %SNAP is associated with to 2.2% increase in Democrat voteshare out of registered. Appendix Tables 4 and 5 report results on changes in Democrat voteshares out of population and registration. In comparison states in 2012 we observe

declines in Democrat votes out of population in all specifications, some of these are statistically significant at the 10% level. Democrat votes out of registered do not show any pronounced trend in surrounding states in 2012 compared to 2008.

5 Concluding remarks

Our empirical results point to the importance of voter registration costs for electoral participation–especially for lower socioeconomic-status citizens.

The main contribution of our paper is to obtain plausibly causal inferences about the impact of lowering registration costs. Precisely because such costs are amenable to policy interventions to lower them, and because of the importance of voting, our results highlight a significant role for potential policy interventions.

Our findings also suggest that field experiments on registration rather than turnout may be particularly valuable in providing confirmatory evidence and also broader findings than are possible from a given natural experiment. As we mentioned earlier, Nickerson (2014) is a notable, but somewhat lonely example of a voter registration field experiment on registration.

A final, but less upbeat observation is that there are policies which raise, rather than lower, registration costs. Voter identification laws, for example, can most usefully be seen as an increase the registration costs. Voters need to obtain not only a valid registration, but also a driver's license or other government-issued ID.

The courts, including the United States Supreme Court, are in the midst of assessing the constitutionality of such voter ID laws. The empirical evidence assembled in this paper suggests that, whatever else they do, such laws materially reduce actual voting, and that there is a partisan skew to this reduction.

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Table 1: Descriptive Statistics of States in 2008

	Massachusetts, N=351		Vermont, N=233		Maine, N=490		New Hampshire, N=240	
	mean	*s.d.*	mean	*s.d.*	mean	*s.d.*	mean	*s.d.*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
% Below Poverty Line	6.44	*6.35*	10.46	*8.95*	16.52	*15.17*	7.20	*7.53*
% Receiving SNAP	4.02	*4.00*	7.82	*5.75*	13.03	*9.55*	4.15	*3.86*
% Receiving SSI	3.23	*2.61*	3.67	*2.88*	4.76	*4.48*	2.61	*2.13*
% Receiving Pub. Assist.	1.72	*1.47*	2.65	*2.45*	4.34	*4.10*	2.62	*6.72*
Median Age	42.08	*4.79*	42.76	*5.50*	44.32	*6.74*	43.05	*6.18*
% Black	1.94	*3.64*	0.46	*0.85*	0.38	*0.94*	0.40	*0.68*
% Hispanic	3.33	*6.53*	1.00	*1.24*	0.96	*2.55*	1.09	*1.38*
% Female	51.02	*2.69*	50.03	*2.96*	49.91	*5.04*	50.23	*4.51*
% College or more	38.64	*16.00*	30.72	*12.28*	21.08	*11.90*	30.89	*14.03*
% HS or less	8.43	*5.50*	10.31	*5.27*	12.25	*7.61*	9.94	*6.11*
% Different county	3.87	*2.91*	4.93	*3.82*	4.44	*4.52*	4.68	*3.28*
Population	18550	*38996*	2524	*3815*	2655	*4883*	5079	*10322*
Fall/Spring Change in Reg %	4.44	*2.41*	6.08	*4.72*	4.43	*6.13*	7.33	*13.02*
Voter Turnout (%)	70.08	*12.11*	70.81	*13.53*	74.56	*10.75*	77.14	*26.95*
Turnout/Registered (%)	80.70	*6.87*	78.96	*7.54*	78.43	*26.90*	81.95	*9.29*
Democrat votes (% of Pop)	41.74	*10.48*	46.20	*11.68*	38.47	*10.00*	41.20	*11.81*
Democrat votes (% of Reg)	48.18	*9.58*	51.29	*8.65*	40.21	*15.10*	44.40	*9.01*

Note: Poverty indexes: "% below poverty" measures % of families below poverty line; "% SSI" measures % of those receiving Supplemental Security Income; "% SNAP" measures % of those receiving Supplemental Nutrition Assistance. Sources: Demogrphic data are from 2005-2009 American Community Survey (ACS), 5 Year sample. Elections data are from from the relevant state departments of Election Services

Table 2: Descriptive Statistics of States in 2012

	Massachusetts, N=351		Vermont, N=233		Maine, N=490		New Hampshire, N=240	
	mean	*s.d.*	mean	*s.d.*	mean	*s.d.*	mean	*s.d.*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
% Below Poverty Line	7.27	*6.97*	12.06	*10.29*	17.15	*14.39*	8.40	*8.31*
% Receiving SNAP	5.64	*4.96*	9.87	*6.05*	14.98	*9.45*	5.15	*4.28*
% Receiving SSI	3.69	*2.64*	4.04	*2.96*	5.40	*4.77*	3.03	*2.42*
% Receiving Pub. Assist.	1.81	*1.51*	3.02	*2.52*	4.30	*3.69*	2.50	*5.40*
Median Age	42.85	*5.08*	43.71	*5.41*	45.60	*6.66*	43.94	*6.30*
% Black	2.21	*4.10*	0.46	*0.75*	0.34	*0.75*	0.40	*0.64*
% Hispanic	3.85	*6.93*	1.23	*1.48*	0.96	*1.77*	1.32	*1.59*
% Female	50.98	*2.64*	49.71	*3.18*	49.97	*4.76*	50.16	*4.53*
% College or more	39.77	*16.08*	31.62	*12.70*	21.85	*12.06*	31.79	*14.30*
% HS or less	7.78	*5.38*	9.49	*4.81*	11.38	*6.43*	8.66	*5.13*
% Different county	3.73	*2.54*	4.66	*3.55*	3.97	*3.97*	4.58	*3.44*
Population	18553	*38451*	2540	*3981*	2679	*4999*	5081	*10325*
Fall/Spring Change in Reg %	4.31	*2.93*	3.61	*2.32*	3.17	*4.11*	12.39	*13.36*
Voter Turnout (%)	70.83	*12.19*	65.15	*12.95*	73.66	*21.75*	73.79	*14.08*
Turnout/Registered (%)	79.76	*6.56*	71.03	*8.76*	73.57	*9.23*	90.39	*7.35*
Democrat votes (% of Pop)	40.62	*10.49*	41.96	*10.48*	36.82	*13.39*	37.86	*8.40*
Democrat votes (% of Reg)	45.95	*9.80*	45.66	*8.38*	36.84	*9.30*	46.97	*9.68*

Note: Poverty indexes: "% below poverty" measures % of families below poverty line; "% SSI" measures % of those receiving Supplemental Security Income; "% SNAP" measures % of those receiving Supplemental Nutrition Assistance. Sources: Demogrphic data are from 2007-2011 American Community Survey (ACS), 5 Year sample. Elections data are from from the relevant state departments of Election Services

Table 3: Percentage change in number of registered voters, October 2010 - February 2012, Massachusetts

	% below poverty line	% SSI+PA	% SNAP	% below poverty line	% SSI+PA	% SNAP
	(1)	(2)	(3)	(4)	(5)	(6)
poverty index	-0.0072	-0.0723	-0.0557	0.0120	-0.0139	0.0044
	(0.029)	(0.093)	(0.055)	(0.028)	(0.101)	(0.066)
median age	-0.0439	-0.0440*	-0.0453*	-0.0079	-0.0106	-0.0089
	(0.029)	(0.025)	(0.025)	(0.042)	(0.045)	(0.048)
% black	-0.0023	0.0001	-0.0002	-0.0107	-0.0095	-0.0106
	(0.028)	(0.028)	(0.027)	(0.036)	(0.035)	(0.035)
% hispanic	0.0533	0.0601	0.0648*	0.0408	0.0456	0.0430
	(0.038)	(0.036)	(0.036)	(0.036)	(0.033)	(0.031)
% with BA+	0.0315	0.0285	0.0282	0.0254	0.0249	0.0254
	(0.021)	(0.019)	(0.019)	(0.027)	(0.026)	(0.026)
% county movers	-0.1467**	-0.1472***	-0.1462***	-0.1060	-0.1038*	-0.1029*
	(0.054)	(0.046)	(0.046)	(0.060)	(0.057)	(0.058)
population	0.0000	0.0000	0.0000	-0.0000*	-0.0000*	-0.0000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
% women	-0.0549	-0.0576	-0.0450	-0.0574	-0.0549	-0.0555
	(0.047)	(0.050)	(0.043)	(0.045)	(0.047)	(0.042)
% with HS-	-0.0120	0.0021	0.0040	-0.0255	-0.0169	-0.0223
	(0.062)	(0.069)	(0.072)	(0.085)	(0.096)	(0.101)
county FE				+	+	+
cons	2.4070	2.8644	2.1737	4.4164	4.3516	4.3382
	3.2269	3.3906	3.2125	2.9653	3.0318	2.8789
N	350	350	350	350	350	350
R2 adj.	0.055	0.059	0.058	0.097	0.097	0.097

Note: MA observations for 351 municipalities in 14 counties. Change in registration is measured by percentage change in registered voters between fall 2010 and spring 2012. Poverty indexes: "% below poverty" measures % of families below poverty line; "% SSI+PA" measures % of those receiving Supplemental Security Income or Public Assistance; "% SNAP" measures % of those receiving Supplemental Nutrition Assistance. Other controls are county fixed effects and socio-economic characteristics at the municipality level, including % of women, % of black, % of hispanics, % with BA or more, % with less than HS, % inter-county movers, population size, and itercations of these variables with 2012 indicator. Standard errors are clustered at the county level.

Table 4: Diff-in-Diff estimates, effects of DTA actions on voter registration

	% below poverty line (1)	% SSI+PA (2)	% SNAP (3)
2012 * poverty index	0.8560**	1.0983***	0.8857*
	(0.297)	(0.234)	(0.461)
poverty index	-0.3545	-0.5658**	-1.0331**
	(0.290)	(0.229)	(0.389)
2012	1.1847	0.0283	0.8873
	(3.633)	(3.868)	(3.407)
cons	8.2479*	8.6385*	7.1918
	(4.030)	(4.043)	(4.447)
N	700	700	700
R2 adj.	0.323	0.324	0.323

Note: MA observations for 351 municipalities in 14 counties, 2008 and 2012. Poverty indexes: "% below poverty" measures % of families below poverty line; "% SSI+PA" measures % of those receiving Supplemental Security Income or Public Assistance; "% SNAP" measures % of those receiving Supplemental Nutrition Assistance. Change in registration is measured by percentage change in % of registered voters between fall and spring in 2008 and 2012. Other controls are county fixed effects and socio-economic characteristics at the municipality level, including % of women, % of black, % of hispanics, % with BA or more, % with less than HS, % inter-county movers, population size, and itercations of these variables with 2012 indicator. Standard errors are clustered at the county level.

Table 5: Diff-in-Diff estimates, effects of DTA actions on elections turnout

	turnout/registration			turnout/population		
	% below poverty line	% SSI+PA	% SNAP	% below poverty line	% SSI+PA	% SNAP
	(1)	(2)	(3)	(4)	(5)	(6)
2012 * poverty index	0.0061	0.0519	0.4506	1.6311*	2.4153**	2.5630*
	(0.804)	(0.959)	(0.714)	(0.816)	(1.019)	(1.330)
poverty index	-1.3515*	-1.5793**	-2.9798***	-1.8707*	-2.3964**	-3.7047**
	(0.670)	(0.604)	(0.751)	(0.962)	(0.970)	(1.441)
2012	-8.2665	-6.4817	-6.8510	0.6347	0.0817	2.4038
	(6.412)	(5.908)	(5.616)	(12.956)	(12.167)	(12.371)
cons	79.9929***	80.4630***	76.4986***	59.7261***	60.9432***	56.0491***
	(6.009)	(5.973)	(6.368)	(8.471)	(8.584)	(8.376)
N	700	700	700	700	700	700
R2 adj.	0.688	0.689	0.696	0.734	0.734	0.735

Note: Observations for 351 municipalities in 14 counties in MA, 2008 and 2012. Poverty indexes: "% below poverty" measures % of families below poverty line; "% SSI" measures % of those receiving Supplemental Security Income or Public Assistance; "% SNAP" measures % of those receiving Supplemental Nutrition Assistance. Other controls are county fixed effects and socio-economic characteristics at the municipality level, including % of women, % of black, % of hispanics, % with BA or more, % with less than HS, % inter-county movers, population size, and itercations of these variables with 2012 indicator. Standard errors are clustered at the county level.

Table 6: Diff-in-Diff estimates, effects of DTA actions on democrat voteshare

	democrat votes/registration			democrat votes/population		
	% below poverty line	% SSI+PA	% SNAP	% below poverty line	% SSI+PA	% SNAP
	(1)	(2)	(3)	(4)	(5)	(6)
2012 * poverty index	0.3414	-0.2643	0.8174	1.5606**	1.5183	2.5284*
	(0.336)	(0.780)	(0.579)	(0.703)	(1.203)	(1.234)
poverty index	0.1356	1.8687	0.8061	-0.4426	1.0150	0.0279
	(1.163)	(1.082)	(1.210)	(1.596)	(1.143)	(1.761)
2012	-8.2392	-9.7946	-7.5046	-1.6234	-4.6750	-0.2670
	(9.613)	(7.988)	(8.980)	(15.404)	(12.897)	(14.419)
cons	7.5769	8.4584	8.8356	-2.2665	-0.7690	-1.3446
	(8.885)	(8.407)	(8.999)	(11.364)	(11.030)	(11.883)
N	700	700	700	700	700	700
R2 adj.	0.742	0.746	0.744	0.709	0.712	0.711

Note: Observations for 351 municipalities in 14 counties in MA, 2008 and 2012. Poverty indexes: "% below poverty" measures % of families below poverty line; "% SSI" measures % of those receiving Supplemental Security Income or Public Assistance; "% SNAP" measures % of those receiving Supplemental Nutrition Assistance. Other controls are county fixed effects and socio-economic characteristics at the municipality level, including % of women, % of black, % of hispanics, % with BA or more, % with less than HS, % inter-county movers, population size, and itercations of these variables with 2012 indicator. Standard errors are clustered at the county level.

Table 7: Diff-in-Diff-in-Diff estimates, effects of DTA actions on voter registration

	% below poverty line	% SSI+PA	% SNAP
	(1)	(2)	(3)
MA*2012*Poverty Index	0.9765**	2.0830***	2.1311***
	(0.395)	(0.482)	(0.679)
Poverty index	-0.1171	0.3766	-0.1137
	(0.222)	(0.341)	(0.288)
2012*Poverty index	-0.1202	-0.9778**	-1.2289**
	(0.268)	(0.419)	(0.507)
MA*Poverty index	-0.2614	-0.9712**	-1.0157**
	(0.358)	(0.407)	(0.463)
2012	-4.3307	-3.8892	-2.8341
	(3.754)	(3.971)	(4.058)
MA	-5.1416	-4.4789	-5.4109
	(5.185)	(5.224)	(5.536)
MA*2012	5.5513	3.9907	3.8118
	(5.570)	(5.955)	(5.611)
N	2551	2558	2558
R2 adj.	0.1590	0.1620	0.1660

Note: Observations for 1314 municipalities in 54 counties in MA, VT, NH and MN, in 2008 and 2012 Poverty indexes: "% below poverty" measures % of families below poverty line; "% SSI+PA" measures % of those receiving Supplemental Security Income or Public Assistance; "% SNAP" measures % of those receiving Supplemental Nutrition Assistance. Change in registration is measured by percentage change in % of registered voters between fall and spring in 2008 and 2012. Other controls are county fixed effects and socio-economic characteristics at the municipality level, including % of women, % of black, % of hispanics, % with BA or more, % with less than HS, % inter-county movers, population size, and itercations of these variables with 2012 indicator. Standard errors are clustered at the county level.

Table 8: Diff-in-Diff-in-Diff estimates, effects of DTA actions on elections turnout

	turnount/registration			turnount/population		
	% below poverty	% SSI+PA	% SNAP	% below poverty	% SSI+PA	% SNAP
	(1)	(2)	(3)	(4)	(5)	(6)
MA*2012*Poverty Index	-0.2135	0.2885	1.2433	1.0987	4.0361***	3.8943**
	(0.804)	(0.971)	(0.785)	(0.946)	(1.021)	(1.493)
Poverty index	-0.1195	-0.8879***	-1.1462***	-0.9713	-0.9361	-1.8899**
	(0.259)	(0.307)	(0.408)	(1.011)	(0.578)	(0.860)
2012*Poverty index	0.2179	-0.2683	-0.8430	0.5342	-1.5856***	-1.2555*
	(0.374)	(0.369)	(0.553)	(0.558)	(0.500)	(0.644)
MA*Poverty index	-1.1111	-0.5594	-1.5390*	-1.0276	-1.6072	-2.2587
	(0.672)	(0.610)	(0.835)	(1.348)	(1.048)	(1.440)
2012	-9.1855*	-9.6641*	-8.3918	-11.7249	-12.2959	-9.9361
	(5.389)	(5.205)	(5.126)	(13.499)	(13.414)	(13.862)
MA	17.6164*	18.1127**	15.3072*	8.3286	8.0997	3.8589
	(8.893)	(8.891)	(9.056)	(15.118)	(15.669)	(15.557)
MA*2012	0.7378	2.8467	1.2642	12.5517	12.7511	12.7565
	(8.253)	(7.534)	(7.421)	(16.379)	(15.540)	(16.652)
N	2551	2558	2558	2551	2558	2558
R2 adj.	0.3770	0.3820	0.3880	0.4190	0.4250	0.4280

Note: Observations for 1314 municipalities in 54 counties in MA, VT, NH and MN, in 2008 and 2012 Poverty indexes: "% below poverty" measures % of families below poverty line; "% SSI+PA" measures % of those receiving Supplemental Security Income or Public Assistance; "% SNAP" measures % of those receiving Supplemental Nutrition Assistance. Other controls are county fixed effects and socio-economic characteristics at the municipality level, including % of women, % of black, % of hispanics, % with BA or more, % with less than HS, % inter-county movers, population size, and itercations of these variables with 2012 indicator. Standard errors are clustered at the county level.

Table 9: Diff-in-Diff-in-Diff estimates, effects of DTA actions on democrat voteshare

	democrat votes/registration			democrat votes/population		
	% below poverty line	% SSI+PA	% SNAP	% below poverty line	% SSI+PA	% SNAP
	(1)	(2)	(3)	(4)	(5)	(6)
MA*2012*Poverty Index	0.7330*	-0.1723	1.2969*	1.6813**	2.2370*	3.2640**
	(0.421)	(0.885)	(0.655)	(0.819)	(1.181)	(1.246)
Poverty index	0.5802	-0.0378	0.2632	0.2927	-0.0603	-0.0466
	(0.385)	(0.338)	(0.634)	(0.880)	(0.452)	(0.668)
2012*Poverty index	-0.3981	-0.2164	-0.6960*	-0.1250	-0.8006**	-0.8737**
	(0.281)	(0.297)	(0.376)	(0.325)	(0.338)	(0.434)
MA*Poverty index	0.0232	2.4251*	1.8112	-0.4265	1.4167	0.8838
	(1.352)	(1.210)	(1.644)	(1.896)	(1.268)	(1.976)
2012	0.5513	0.8054	1.0876	2.0684	2.1431	2.8918
	(4.240)	(4.511)	(4.274)	(5.227)	(5.523)	(5.354)
MA	-4.5794	-4.5233	-2.6981	-6.9108	-6.8561	-6.2915
	(12.582)	(12.139)	(12.026)	(12.533)	(12.492)	(12.795)
MA*2012	-9.4916	-11.9182	-9.7824	-4.1546	-7.6862	-3.9183
	(10.805)	(9.344)	(10.081)	(14.924)	(12.622)	(14.090)
N	2551	2558	2558	2551	2558	2558
R2 adj.	0.5530	0.5520	0.5520	0.5040	0.5050	0.5040

Note: Observations for 1314 municipalities in 54 counties in MA, VT, NH and MN, in 2008 and 2012 Poverty indexes: "% below poverty" measures % of families below poverty line; "% SSI+PA" measures % of those receiving Supplemental Security Income or Public Assistance; "% SNAP" measures % of those receiving Supplemental Nutrition Assistance. Other controls are county fixed effects and socio-economic characteristics at the municipality level, including % of women, % of black, % of hispanics, % with BA or more, % with less than HS, % inter-county movers, population size, and itercations of these variables with 2012 indicator. Standard errors are clustered at the county level.

Appendix Table 1: Diff-in-Diff estimates, effects of DTA actions on voter registration in comparison states

	Vermont			Maine			New Hampshire		
	% below poverty line	% SSI+PA	% SNAP	% below poverty line	% SSI+PA	% SNAP	% below poverty line	% SSI+PA	% SNAP
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2012 * poverty index	-0.0573	-0.6169	-0.4397	0.3503*	-0.1301	0.1346	1.5632	-1.6695	0.0744
	(0.636)	(0.495)	(0.358)	(0.188)	(0.148)	(0.372)	(1.004)	(0.939)	(2.054)
poverty index	-0.1425	0.1884	-0.0854	-0.3596**	-0.0464	-0.5384***	-0.3418	2.0151	-0.1203
	(0.682)	(0.492)	(0.295)	(0.143)	(0.205)	(0.174)	(1.085)	(1.106)	(1.902)
2012	-6.2587	-6.8703	-5.3972	-6.6830	-5.8083	-5.8944	6.7772	2.3099	3.8066
	(6.613)	(6.315)	(6.705)	(3.983)	(4.992)	(5.220)	(8.229)	(7.695)	(9.378)
cons	9.7855**	10.0661**	9.7180**	13.1772***	12.9001***	13.1194***	30.2235**	31.7331**	30.6383**
	(4.469)	(4.265)	(4.415)	(3.076)	(3.713)	(3.725)	(12.811)	(12.376)	(13.422)
N	466	466	466	926	926	926	466	466	466
R2 adj.	0.22	0.222	0.222	0.126	0.117	0.122	0.106	0.108	0.104

Note: Estimations use municipality level data in 2008 and 2012. Change in registration is measured by percentage change in % of registered voters between fall and spring in 2008 and 2012. Poverty indexes: "% below poverty" measures % of families below poverty line; "% SSI+PA" measures % of those receiving Supplemental Security Income or Public Assistance; "% SNAP" measures % of those receiving Supplemental Nutrition Assistance. Change in registration is measured by percentage change in % of registered voters between fall and spring in 2008 and 2012. Other controls are county fixed effects and socio-economic characteristics at the municipality level, including % of women, % of black, % of hispanics, % with BA or more, % with less than HS, % inter-county movers, population size, and itercations of these variables with 2012 indicator. Standard errors are clustered at the county level.

Appendix Table 2: Diff-in-Diff estimates, effects of DTA actions on voter turnout/registered in comparison states

	Vermont			Maine			New Hampshire		
	% below poverty line	% SSI+PA	% SNAP	% below poverty line	% SSI+PA	% SNAP	% below poverty line	% SSI+PA	% SNAP
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2012 * poverty index	0.7484*	-0.0090	-0.5398	0.4193	-0.1276	0.1525	0.4295	1.6372**	0.9459
	(0.376)	(0.510)	(0.607)	(0.471)	(0.304)	(0.477)	(1.028)	(0.677)	(1.716)
poverty index	-0.5667	-1.2784***	-2.1569***	-0.2594	-0.9498**	-1.7421***	0.2614	-1.9522*	-1.3904
	(0.422)	(0.385)	(0.510)	(0.326)	(0.325)	(0.406)	(1.135)	(0.885)	(1.471)
2012	-19.0274**	-18.7434**	-14.1282**	-9.2191	-9.9253*	-9.6019*	16.1893**	16.3966*	16.3408*
	(6.861)	(7.054)	(6.536)	(5.675)	(5.148)	(5.031)	(6.985)	(7.651)	(7.515)
cons	77.8528***	76.3130***	76.2425***	66.8550***	67.0687***	67.6326***	38.9582	37.8678	37.5498
	(6.512)	(6.554)	(6.665)	(6.003)	(5.736)	(5.895)	(24.861)	(25.719)	(26.080)
N	466	466	466	926	926	926	466	466	466
R2 adj.	0.459	0.466	0.485	0.188	0.2	0.211	0.234	0.239	0.235

Note: Estimations use municipality level data in 2008 and 2012. Poverty indexes: "% below poverty" measures % of families below poverty line; "% SSI+PA" measures % of those receiving Supplemental Security Income or Public Assistance; "% SNAP" measures % of those receiving Supplemental Nutrition Assistance. Change in registration is measured by percentage change in % of registered voters between fall and spring in 2008 and 2012. Other controls are county fixed effects and socio-economic characteristics at the municipality level, including % of women, % of black, % of hispanics, % with BA or more, % with less than HS, % inter-county movers, population size, and itercations of these variables with 2012 indicator. Standard errors are clustered at the county level.

Appendix Table 3: Diff-in-Diff estimates, effects of DTA actions on voter turnout/population in comparison states

	Vermont			Maine			New Hampshire		
	% below poverty line	% SSI+PA	% SNAP	% below poverty line	% SSI+PA	% SNAP	% below poverty line	% SSI+PA	% SNAP
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2012 * poverty index	0.7848	-0.5084	-1.6239	-0.0050	-1.6852***	-1.7608*	3.2805*	-0.8154	0.9776
	(1.353)	(1.474)	(1.679)	(0.640)	(0.491)	(0.957)	(1.738)	(2.039)	(2.123)
poverty index	-0.7755	-0.2067	0.1970	-0.8166	-1.3893*	-2.4121*	-4.3337***	-0.5108	-6.0579***
	(1.078)	(1.835)	(1.808)	(1.367)	(0.760)	(1.216)	(0.997)	(2.105)	(1.769)
2012	10.0640	9.4530	11.6567	-28.3524	-26.6737	-24.7400	15.7475	11.2614	15.4708
	(11.862)	(12.116)	(12.246)	(17.715)	(17.260)	(18.208)	(36.127)	(31.845)	(35.000)
cons	45.9737***	45.8346***	46.2557***	65.8889***	67.4037***	68.0113***	43.8910*	47.7933**	43.0201*
	(10.592)	(10.811)	(10.831)	(16.194)	(17.314)	(17.206)	(22.711)	(19.959)	(22.684)
N	466	466	466	926	926	926	466	466	466
R2 adj.	0.529	0.529	0.53	0.283	0.301	0.308	0.445	0.431	0.446

Note: Estimations use municipality level data in 2008 and 2012. Poverty indexes: "% below poverty" measures % of families below poverty line; "% SSI+PA" measures % of those receiving Supplemental Security Income or Public Assistance; "% SNAP" measures % of those receiving Supplemental Nutrition Assistance. Change in registration is measured by percentage change in % of registered voters between fall and spring in 2008 and 2012. Other controls are county fixed effects and socio-economic characteristics at the municipality level, including % of women, % of black, % of hispanics, % with BA or more, % with less than HS, % inter-county movers, population size, and itercations of these variables with 2012 indicator. Standard errors are clustered at the county level.

Appendix Table 4: Diff-in-Diff estimates, effects of DTA actions on Democrat votes/population in comparison states

	Vermont			Maine			New Hampshire		
	% below poverty line	% SSI+PA	% SNAP	% below poverty line	% SSI+PA	% SNAP	% below poverty line	% SSI+PA	% SNAP
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2012 * poverty index	0.3485	-1.0922	-1.5840	-0.2897	-0.7102*	-1.0745*	-0.3352	-0.7434	-0.1216
	(0.983)	(0.848)	(1.193)	(0.309)	(0.366)	(0.505)	(0.839)	(1.322)	(1.907)
poverty index	-0.1185	1.1355	1.8679	0.5604	-0.3613	0.4031	-0.2073	1.1170	0.3919
	(0.662)	(0.889)	(1.248)	(1.213)	(0.482)	(0.721)	(0.478)	(1.703)	(1.451)
2012	13.4548	11.6874	11.5738	-4.7839	-3.3008	-2.5029	3.2072	3.5882	3.8775
	(8.025)	(8.403)	(8.767)	(6.931)	(7.441)	(7.107)	(17.527)	(15.521)	(17.811)
cons	19.1386**	20.7183**	20.7065**	18.0509*	17.5371*	17.3437*	19.7756	20.3887	20.2032
	(8.328)	(8.794)	(8.550)	(9.809)	(9.505)	(9.785)	(18.536)	(17.168)	(18.967)
N	466	466	466	926	926	926	466	466	466
R2 adj.	0.614	0.616	0.618	0.375	0.375	0.373	0.432	0.433	0.431

Note: Estimations use municipality level data in 2008 and 2012. Poverty indexes: "% below poverty" measures % of families below poverty line; "% SSI+PA" measures % of those receiving Supplemental Security Income or Public Assistance; "% SNAP" measures % of those receiving Supplemental Nutrition Assistance. Change in registration is measured by percentage change in % of registered voters between fall and spring in 2008 and 2012. Other controls are county fixed effects and socio-economic characteristics at the municipality level, including % of women, % of black, % of hispanics, % with BA or more, % with less than HS, % inter-county movers, population size, and itercations of these variables with 2012 indicator. Standard errors are clustered at the county level.

Appendix Table 5: Diff-in-Diff estimates, effects of DTA actions on Democrat votes/registered in comparison states

	Vermont			Maine			New Hampshire		
	% below poverty line	% SSI+PA	% SNAP	% below poverty line	% SSI+PA	% SNAP	% below poverty line	% SSI+PA	% SNAP
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2012 * poverty index	0.1486	-0.9104	-0.9928	-0.2183	-0.0817	-0.1807	-1.8152**	0.7231	0.3808
	(0.539)	(0.529)	(0.561)	(0.288)	(0.294)	(0.407)	(0.644)	(0.729)	(0.983)
poverty index	0.1082	0.6000	0.5672	0.5913	-0.1326	0.6529	2.3397**	0.2790	2.8154*
	(0.467)	(0.365)	(0.415)	(0.505)	(0.435)	(0.404)	(0.949)	(1.187)	(1.387)
2012	-5.2956	-6.6192	-5.2699	0.6719	1.0858	1.0870	6.5681	9.4586	7.7777
	(6.842)	(7.323)	(7.124)	(6.360)	(6.753)	(6.641)	(9.470)	(9.434)	(8.634)
cons	38.0681***	38.9336***	38.5703***	21.6886***	21.0158***	20.8508***	15.3428	13.1703	15.2344
	(7.667)	(7.805)	(7.530)	(4.234)	(3.871)	(4.000)	(17.575)	(18.685)	(18.599)
N	466	466	466	919	926	926	466	466	466
R2 adj.	0.562	0.563	0.563	0.349	0.345	0.347	0.356	0.345	0.357

Note: Estimations use municipality level data in 2008 and 2012. Poverty indexes: "% below poverty" measures % of families below poverty line; "% SSI+PA" measures % of those receiving Supplemental Security Income or Public Assistance; "% SNAP" measures % of those receiving Supplemental Nutrition Assistance. Change in registration is measured by percentage change in % of registered voters between fall and spring in 2008 and 2012. Other controls are county fixed effects and socio-economic characteristics at the municipality level, including % of women, % of black, % of hispanics, % with BA or more, % with less than HS, % inter-county movers, population size, and itercations of these variables with 2012 indicator. Standard errors are clustered at the county level.