Abstract

Political geography has long played a prominent role in conceptions of political realignments. In this paper, I apply a spatial analysis to examine the political geography of voting during one of the principal political realignments in American electoral history, the 1928-1936 Democratic realignment. The spatial analysis challenges some of our common conceptions of this realignment. For example, increased support for the Democrats and Al Smith in 1928 was not limited to urban areas, as Smith enjoyed widespread increases in Democratic support in largely rural Western locations. In the 1932 election, unemployment actually impeded shifts toward Franklin Roosevelt and the Democrats in most locales. Changes in voter support during this period were highly localized and subnational. Geographically Weighted Regressions demonstrate that this localized political geography was shaped by extensive geographic variation in how political and demographic factors influenced voting behavior across the United States.

Keywords: political geography, realignment, Geographically Weighted Regression (GWR), spatial analysis, spatial nonstationarity
1 Introduction

Political geography has long played a prominent role in conceptions of political realignments. Locations such as industrial cities (Andersen 1979), immigrant towns (Key 1955), urban counties (Burnham 1970), and rural anti-slavery locales (Sundquist 1983) have figured prominently in realignment studies, as scholars have sought to determine where changes in voting behavior have been located. These studies are premised on the recognition that geography conditions citizens’ responses to political crises and emergent issues during realignments. In short, because realignments are geographically structured, subnational phenomena (Nardulli 1995), realignment scholars have been keenly interested in determining where voting changes have occurred along with why these changes have occurred.

This paper engages these two central questions regarding realignments. It does so by applying a spatial analysis to changes in voting behavior during the 1928-1936 period that ushered in the New Deal party system. Although spatial analyses have been applied to a variety of questions in political science (Gleditsch and Ward 2000; Cho 2003; Gimpel and Cho 2004; Darmofal 2006), they have been less applied to political realignments. This is unfortunate, because as local-level phenomena exhibiting significant geographic variation, political realignments are ideal subjects for the application of spatial analytic approaches. The spatial methods employed in this paper allow me to identify the areas of the country that changed their voting behavior during the New Deal realignment and to identify how the varying effects of political and demographic factors across the United States shaped the political geography of voting during this realignment.

The spatial analysis challenges some of our common conceptions of the New Deal era realignment.¹ For example, increased support for the Democrats and Al Smith in 1928 was not concentrated in urban locales. Instead, Smith benefitted from a widespread increase in Democratic support in the largely rural Upper Plains and Mountain states. In the 1932 election,

¹For ease of exposition, I refer to the realignment as the New Deal era realignment and the New Deal realignment although its beginning in 1928 predates the introduction of the New Deal. This is consistent with the conception of this period in the literature, which treats it as a coherent period of electoral change (see, e.g., Key 1955).
higher rates of unemployment impeded shifts toward Franklin Roosevelt and the Democrats.

The spatial analysis demonstrates that changes in voter support during this period were subnational and localized, consistent with the political geographic perspective on realignments. This localized political geography argues that political and demographic factors may have had disparate effects on voting behavior in different geographic locations. This is to be expected in a polity as diverse as the United States. I employ Geographically Weighted Regressions to model this spatial nonstationarity, this geographic variation in the effects of variables on voting behavior during the New Deal realignment. Geographically weighted regressions differ from standard modeling approaches because they estimate separate regression coefficients and standard errors for each observation in the data and thus allow variables to vary in their effects geographically. The Geographically Weighted Regression estimates confirm that the spatially varying effects of prior voting behavior and demographics played critical roles in producing the political geography of the New Deal realignment.

The paper is structured as follows. In the next section, I examine the role of political geography during political realignments. Next, I employ global and local measures of spatial autocorrelation to identify the political geography of movements toward and away from the Democratic Party in 1928, 1932, and 1936. In the following sections, I employ Geographically Weighted Regressions to model the geographically varying sources of changes in voting behavior during this period. The paper concludes by discussing the implications of the analysis for our understanding of political realignments.

2 Political Geography and Realignments

Although most studies of voting behavior employ individual-level survey data, political realignments have long been conceptualized as macro-level phenomena. Indeed, as much as any other subject in political behavior, the study of political realignments has been dominated by the study of aggregate units. The earliest studies of realignments, exemplified by Key’s (1955, 1959) two classic studies of critical and secular electoral change, focused on the identification of representative areal units that could be used to locate aggregate changes in voting behavior.
For Key, these areal units primarily were towns in New England.

Although the focus on selected aggregate units (see also Burnham 1965, 1970) reflected then-existing limitations of data availability, scholars of the era employed conscious strategies in choosing aggregate units. Believing that realignments constituted natural experiments, scholars identified aggregate units likely to experience the political treatment – economic depression, distinct policy concerns, ethnoreligious appeals – and those unlikely to experience the treatment and examined how subsequent voting differed in the two sets of aggregate units. Subsequent scholars, aided by greater data availability, have employed this same natural experiment perspective in seeking to pinpoint where voting changes occurred – for example, in urban locales featuring large pools of non-immunized immigrants (Andersen 1979).

Political geography has, in short, played a central role in the study of political realignments.² In perhaps the most extensive geographic analysis of realignments, Nardulli (1995) demonstrates the utility of and need for a geographic approach in the study of realignments. Employing data on 215 substate regions covering the continental United States, Nardulli empirically confirms the assumptions of previous political geographic studies of realignments. Realignments are not national phenomena. Instead, they are localized, subnational phenomena, with changes in voting behavior concentrated in particular geographic locations. As a consequence, identifying where voting changes have occurred during realignments can aid considerably in understanding why they have occurred. Nardulli (1995, 11) succinctly summarizes this perspective:

“Equally important for the detection and measurement of realignments are spatial considerations. It is unrealistic to expect the entire U.S. electorate to respond simultaneously and uniformly to the type of stimuli that will generate a critical realignment in electoral patterns. There is simply too much geopolitical diversity in the United States to justify such an expectation.”

²I define political geography as the relationship between units’ spatial locations and their political behaviors, processes, and events. This definition recognizes that geography plays critical roles in conditioning a broad range of political phenomena. These roles include both the promotion of opportunities for diffusion between neighboring units (e.g., Starr and Most 1978; Siverson and Starr 1990) and the clustering of common attributes among neighboring units (e.g., Darmofal 2006).
Brown (1988, 1991) employs this local-level orientation in his analysis of voting during the New Deal realignment. Employing county-level data, Brown examines changes in voting behavior between 1928 and 1932 and also between 1932 and 1936. Brown models shifts toward and away from the Democrats and Republicans as functions of national appeals and local-level interactions between Democratic, Republican, and non-voting populations and conditions these effects as a function of urbanization, farming, and manufacturing. Brown finds that farming locales played a particularly prominent role in shifts toward the Democrats in 1932 while manufacturing locales played a large role in 1936. Brown’s analysis highlights the importance of geographically-based factors for voting changes during the New Deal realignment.

I extend the realignment literature’s interest in political geography by applying techniques of spatial analysis to examine changes in local voting behavior between 1928 and 1936. Specifically, by applying these methods I am able to determine whether there was a spatial structure to these changes in voting behavior, as predicted by the political geographic perspective, or whether the changes were spatially random. I am also able to identify where spatial patterns in movements toward and away from the Democratic Party were located. Finally, by employing Geographically Weighted Regressions, I am able to identify how the geographic diversity in the effects of political and demographic factors shaped the political geography of the New Deal realignment.

3 Global and Local Measures of Spatial Autocorrelation

Spatial autocorrelation exists if increases or decreases in Democratic support exhibit spatial clustering at “neighboring” locations. Positive spatial autocorrelation exists if neighboring electorates exhibit similar behavior (e.g., similar shifts toward the Democratic Party) while negative spatial autocorrelation exists if neighboring electorates exhibit dissimilar behavior (e.g., dissimilar shifts toward and away from the Democratic Party). Formally, spatial autocorrela-

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3Brown’s three conditioning variables are operationalized as follows. Urbanization is the county-level urban population as a proportion of the total county-level population. Farm activity is measured with the total county acreage being farmed. Manufacturing employees are measured as the average number of manufacturing wage earners in the county. All three variables are from the 1930 Census (see Brown 1991, 57).

4Note, the term “neighbors” is generalizable and need not imply contiguity, or even a spatial relationship (Beck, Gleditsch, and Beardsley 2006, for example, define neighbors in terms of trade flows).
tion implies a non-zero covariance on a random variable at neighboring locations (Anselin and Bera 1998, 241-242). The null hypothesis in a test for spatial autocorrelation is that the values on the variable are randomly distributed in relation to space.

The first step in determining whether there was a spatial structure to changes in voting behavior during the New Deal realignment is thus to test for spatial autocorrelation at the global level. Moran’s *I* is a commonly employed global measure of spatial autocorrelation. A significant positive global Moran’s *I* indicates significant positive spatial autocorrelation while a significant negative global Moran indicates significant negative spatial autocorrelation.⁵

If global spatial autocorrelation in voting behavior during the New Deal realignment is identified via the global Moran, the next step is to examine spatial autocorrelation at the local level via a local indicator of spatial association (LISA) statistic. The LISA statistic gives an observation-specific measure of spatial autocorrelation and can be employed to determine which observations are producing the global pattern, which run counter to the global autocorrelation, and which exhibit no spatial autocorrelation with their neighbors. A commonly employed LISA statistic is the local Moran’s *I*.

Anselin (1995, 105-6) demonstrates how the local Morans can be combined with a Moran scatterplot to provide a visual representation of the local spatial autocorrelation in one’s data (see also Baller and Richardson 2002; O’Loughlin and Anselin 1996; Darmofal 2006). The Moran scatterplot plots the value on the variable of interest for each unit (in standardized form) against the weighted average of the values in neighboring units (again in standardized form). The result is a plot with four quadrants: one in which units and the weighted average of their neighbors are above the mean, one in which they are below the mean, one in which units are below the mean and their neighbors are above the mean and one in which units are above the mean and their neighbors are below the mean. The local Morans can then be combined with the quadrant locations in the Moran scatterplot to determine whether cases of

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⁵A spatial weights matrix is central to the estimation of spatial autocorrelation, as it defines the units that are neighbors of each other and thus able to exhibit first-order spatial autocorrelation with each other. In the spatial weights matrix, each of the neighbors of *i* has non-zero values, the non-neighbors of *i* have zero values, and *i* is typically not a neighbor of itself. Spatial weights matrices are typically row-standardized so that the sum of the weights for each observation equals 1.
positive local spatial autocorrelation reflect clusters of changes in Democratic support above or below the national mean. The Moran scatterplot can also be used to determine whether cases of negative local spatial autocorrelation reflect smaller increases in Democratic support surrounded by larger increases in Democratic support, or the reverse.\textsuperscript{6} In the next section, I apply the global and local Moran’s $I$’s along with Moran scatterplots to identify the political geography of voting during the New Deal realignment.

4 Spatial Patterns in Voting During the New Deal Realignment

My analysis of voting changes during the New Deal realignment focuses on a county-level variable, which I label Democratic Change, which I employ in this and the subsequent Geographically Weighted Regression analysis. This variable measures the county-level change in the Democratic proportion of the voting age population’s presidential vote between each pair of elections (i.e., 1924-1928, 1928-1932, and 1932-1936). The focus on changes in the voting age population’s vote, rather than changes in the proportion of the actual vote cast, reflects Andersen’s (1979) recognition that changes in support for a party may come not from the conversion of the opposing party’s supporters, but rather from the mobilization of non-voters. By employing the voting age population as the denominator rather than votes cast we are able to examine the factors that produced shifts in behavior among both voters and non-voters.\textsuperscript{7}

We can gain a sense of the changes in aggregate voting behavior during this period by examining the Democratic Change variable. The Al Smith candidacy drew increased support to the Democratic Party in 1928 as the mean county-level Democratic gain among the voting age population in that election was 4.4 percentage points. In 1932, Franklin Roosevelt and the Democrats enjoyed a marked increase in support of 13.8 percentage points. Finally, in 1936,\textsuperscript{6}

\textsuperscript{6}Similarly, negative spatial autocorrelation may reflect a county with a large decline in Democratic support surrounded by counties with smaller declines in Democratic support, and vice versa.

\textsuperscript{7}The data employed in this analysis are a subset of a county-level and state-level archive collected by Peter F. Nardulli and a team of scholars at the University of Illinois at Urbana-Champaign. The data include political, electoral, and demographic measures and include observations on all counties in the continental United States for each presidential election from 1828 to the present. A full description of the data is provided in Nardulli (2005).
there was little change in aggregate voting behavior, with Democrats registering a negligible loss of 0.2 percentage points.\(^8\)

Were the changes in voter support in the 1920s and 1930s randomly distributed across the country? Or, as predicted by the political geographic perspective on realignments, were there spatial patterns to these changes in support? The global Morans tell a clear story: there was a strong spatial patterning to voting changes across each of these elections. The changes in the Democratic vote between 1924 and 1928, 1928 and 1932, and 1932 and 1936 each exhibit significant positive global spatial autocorrelation (\(p < .01\)).\(^9\) The global Moran’s \(I\) for Democratic Change is .77 for 1924-1928 changes, .67 for 1928-1932 changes, and .52 for 1932-1936 changes (in each case, the standard errors are .01). Consistent with the political geographic perspective, there was a strong global spatial patterning of changes in voter support during the New Deal realignment.

Given the global spatial autocorrelation estimated via the global Morans, the next step in identifying the political geography of the New Deal realignment is to examine spatial autocorrelation at the local level using the local Morans. In each of the three elections, a sizable percentage of counties were spatially autocorrelated with their neighboring counties’ changes in Democratic support. In 1928, 42.7 percent of counties had significant local Morans, in 1932, 42.9 percent did, and in 1936, 30.3 percent did. Of these cases, the vast majority were cases of positive spatial dependence. In 1928, 97.2 percent of the significant local Morans were cases of positive spatial autocorrelation, in 1932, 94.9 percent were, and in 1936, 91.6 percent were.

Figure 1 maps the local spatial autocorrelation in changes in Democratic support in 1928, 1932, and 1936. In each map, units with significant local Morans are plotted in grayscale, depending upon their location in the Moran scatterplot. Positively autocorrelated counties

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\(^8\)The corresponding values for the Republican Party during this period were an average increase in support of 8.2 percentage points in 1928, an average decline of 11 points in 1932, and an average increase of 1.7 points in 1936.

\(^9\)I employed a queen contiguity neighbor definition for the global and local Morans. Under this definition, all counties contiguous to a county were treated as its neighbors while all counties not contiguous to the county were treated as its non-neighbors. For the global and local Moran’s \(I\)’s, 999 random permutations were employed to create empirical reference distributions to test for pseudo-statistical significance.
that shared similar changes in Democratic support with neighboring counties at rates above
the national mean are plotted in black and are labeled with “above the mean and neighbors
above the mean.” Positively autocorrelated counties that shared similar changes in Democratic
support with their neighbors at rates below the national mean are plotted in the lightest shade
of gray and are labeled with “below the mean and neighbors below the mean.”

Negatively autocorrelated counties are plotted in the two intermediate shades on the grayscale.
Counties with changes in Democratic support above the national mean whose neighbors had
changes in Democratic support below the mean are plotted in the darker intermediate shade
of gray and labeled with “above the mean and neighbors below the mean.” Counties with
changes in Democratic support below the mean whose neighbors had changes in support above
the mean are plotted in the lighter intermediate shade of gray and labeled with “below the
mean and neighbors above the mean.” Counties with insignificant local Morans are plotted in
white and labeled with “not significant.”

Table 1 reports descriptive statistics for the counties in each of these categories along with
the statistics for all counties in each election. The categories plotted in Figures 1 are quite
distinct from each other. In each of these three elections, the positively spatially autocorrelated
counties above the mean exhibited significantly larger shifts toward the Democratic Party than
did the positively autocorrelated counties below the mean (p < .0001, one-tailed test, for all
three elections). The differences in the means between the other groups were significant at a
p < .005 level, one-tailed test, with only one exception (the 1928 comparison between cases
that were not significant and those that were negatively autocorrelated below the mean with
neighbors above the mean).

It is important also to note that the local Morans and the corresponding patterns shown
in Figure 1 are not a function of the greater susceptibility of less populated counties to larger
aggregate voting changes. In both 1928 and 1936, correlations between the absolute value of
change in Democratic support and county population were positive and statistically significant,
using either the voting age population or the total population as the measure of the county’s
population (p < .0001 in both elections). These positive correlations indicate that changes in
Democratic support were larger in more populated counties than in less populated counties.

In examining the political geography of the New Deal realignment, consider first, the changes in Democratic support in 1928 whose spatial patterns are mapped in the upper left map in Figure 1. Many accounts of the 1928 election emphasize increased support in big cities for the Democrats in that election (see, e.g., Lubell 1956; Degler 1964). Indeed, Smith’s candidacy in 1928 is often viewed as a harbinger of things to come, as he brought urban populations into the Democratic fold after their long estrangement following William Jennings Bryan’s candidacies for president. The local Morans, however, tell a much different story about the political geography of the 1928 election. As Figure 1 shows, Democratic gains were widespread throughout the largely rural upper Plains and Mountain states from Wisconsin westward into Montana and extending down into Nevada and to the west coast in California. These movements were matched by a more geographically circumscribed pattern in portions of New England.

How strong were these shifts toward Smith and the Democrats? While the overall mean shift toward the Democrats in the election was 4.4 percentage points among the voting age population, the mean shift in positively autocorrelated counties above the mean was 18.3 points. In contrast, in the positively autocorrelated counties below the mean, there was a mean loss of support for the Democrats of 5.5 points.\footnote{Changes in Republican support during this period were not simply the mirror image of changes in Democratic support. Republican gains in 1928 were more spatially diffuse than Democratic gains. In 1932, Republican losses in support were extensive, but were most severe in the Plains and Upper Plains and least severe in the South and Northeast. In 1936, the Republican Party enjoyed gains in support in the Plains and in Pennsylvania and New York. Descriptive statistics and maps of changes in Republican support during the New Deal realignment are available from the author.}

The upper right map in Figure 1 maps the changes in Democratic support in 1932. Brown argued that farming locales played a large role in the Democratic gains in 1932 and the map supports this contention. There was a widespread movement toward the Democrats in counties in the Plains, precisely where the Dust Bowl had hit. Yet, we do not see geographically widespread movements toward the Democrats in other portions of the country. Instead, we see a spatial patterning of below average movements in Democratic support throughout much of the South and in New York and much of New England.
The differences in movement toward the Democrats in these two spatial patterns are marked. In the positively autocorrelated counties above the mean in 1932, Roosevelt enjoyed an average gain in support over Al Smith’s candidacy of 23.1 percentage points. In contrast, in the positively autocorrelated counties below the mean, Roosevelt registered only a four point gain in support. The 1932 election was not, in short, marked by a largescale increase in Democratic support in the industrial Eastern United States.

If 1932 was an election in which the Democrats did unusually well in the Plains, the 1936 election was marked by particularly strong gains in the Industrial core of the country. As the map in the lower left of Figure 1 shows, Franklin Roosevelt enjoyed increased support in Ohio, Pennsylvania, and New Jersey in 1936. Roosevelt’s re-election, however, was not solely aided by industrial manufacturing locales. Roosevelt also enjoyed increased Democratic support in many counties across the Northern tier of the country, as well as in Utah, Nevada, and pockets of Kansas and California. Roosevelt lost support, however, in Northern Plains counties he had captured in 1932 as well as in Kentucky, Arkansas, Oklahoma, Texas, and pockets of additional states.

Indeed, the 1936 election was in many ways a story of two electorates. In the positively autocorrelated counties above the mean, the Democrats registered average increases in support among the voting age population of 9 percentage points. In the positively autocorrelated counties below the mean, however, Roosevelt lost 8.2 points in comparison to his showing four years earlier.

Overall, the maps in Figure 1 demonstrate the strong spatial patterning of voting during the New Deal realignment. As predicted by the realignment literature, movements toward and away from the Democratic Party during this period were not spatially random. Instead, the local spatial autocorrelation results demonstrate that there was a significant local spatial structuring to changes in voting behavior. The local nature of these spatial patterns suggests possible significant spatial nonstationarity in the sources of aggregate voting change during this period. Shifts in aggregate voter support from election to election were also quite complex, with the parties rarely registering similar increases or decreases in support in the same counties in
succeeding elections. This argues for the utility of examining these three elections separately. The next section turns to spatial modeling of the changes in voter support during these elections.

5 Geographically Weighted Regression

One of the defining features of the American polity is its geopolitical diversity (see, e.g., Gimpel and Schuknecht 2003). In a geographically expansive polity that has been marked by localism and sectionalism, we should not, a priori, expect political and demographic factors to play the same roles in shaping behavior in all areas of the country. Instead, they are likely to vary geographically in their effects on political behaviors, producing geographic diversity in these behaviors. The political geography of the New Deal realignment reflects this diversity and suggests that the factors shaping voting behavior during this period may have varied geographically in their effects.

We need, therefore, a strategy for modeling spatial heterogeneity, or spatial nonstationarity, in the sources of voting behavior during the New Deal realignment. Spatial regimes models (see, e.g., Anselin 1990) offer one possibility, but are limited in their capacity for modeling multiple localized geographic patterns of voting behavior. What is needed, instead, is a more localized approach such as Geographically Weighted Regression (GWR) (Fotheringham, Charlton, and Brunsdon 1998; Fotheringham, Brunsdon, and Charlton 2002) that will allow the effects of variables to vary for each unit in the data.

In the standard regression approach, the effects of variables are estimated as global parameters that are not allowed to vary by unit.\textsuperscript{11} The result is the standard regression model with non-varying parameters:

\[
y_i = \beta_0(u_i, v_i) + \Sigma_k \beta_k(u_i, v_i)x_{ik} + \varepsilon_i. \tag{1}
\]

GWR departs from this standard regression framework by allowing the estimated parameters to vary geographically. The result is a continuous spatial plane of parameter values, with these

\textsuperscript{11}The notation and discussion in this section follows Fotheringham, Brunsdon, and Charlton 2002, 52-64, and Fotheringham, Charlton, and Brunsdon 1998.
parameters measured at particular observed locations, typically the centroids of the observed units (in this paper’s analysis, the parameters are measured at the centroid of each county with observed data) (Fotheringham, Charlton, and Brunsdon 1998, 1907). The result is the following model with spatially varying parameters:

\[ y_i = \beta_0(u_i, v_i) + \sum_k \beta_k(u_i, v_i)x_{ik} + \varepsilon_i \]  

(2)

where, as Fotheringham, Brunsdon, and Charlton (2002, 52) note, “\(u_i, v_i\) denotes the coordinates of the \(i\)th point in space and \(\beta_k(u_i, v_i)\) is a realization of the continuous function \(\beta_k(u, v)\) at point \(i\).”

In calibrating equation (2), locations near \(i\) are given greater weight in influencing \(\beta_k(u_i, v_i)\) through a spatial weights matrix. Here, a Gaussian weighting function is often employed (and is employed in this paper’s analysis). The Gaussian weighting function takes the form:

\[ w_{ij} = \exp\left[-\frac{1}{2}\left(\frac{d_{ij}}{b}\right)^2\right] \]  

(3)

where \(d_{ij}\) is the distance between points \(i\) and \(j\) and \(b\) is the bandwidth. The bandwidth reflects the distance-decay of the weighting function and affects the spatial smoothing of the estimates, with smaller bandwidths producing less spatial smoothing than larger bandwidths (Fotheringham, Brunsdon, and Charlton 2002, 45). In this analysis, I estimate the appropriate bandwidths through a cross-validation approach for local regression that employs the fitted values for locations near point \(i\) while excluding \(i\) itself (see Cleveland 1979, Fotheringham, Charlton, and Brunsdon 1998, 1910).\(^{12}\)

6 Modeling Changes in Aggregate Democratic Voting During the New Deal Re-alignment

In the Geographically Weighted Regressions, I model the changes in Democratic support as a function of political and demographic factors. The first set of political influences involves

\(^{12}\)This approach avoids the problem of the bandwidth trending toward zero and calibration involving only each point \(i\) and not nearby points (Fotheringham, Brunsdon, and Charlton 2002, 59).
the preexisting partisan and non-voting populations that were available to produce changes in aggregate voter support. Large Democratic, Republican, and non-voting populations provided ready raw pools for increases and decreases in party support. For example, a large pool of disaffected Republicans in the wake of the Great Depression afforded the possibility of significant increases in Democratic support. Similarly, large (possibly non-immunized) non-voting populations may have been moved to vote for the Democrats as a result of the economic crisis. At the same time, however, these populations may reflect inertial forces acting against significant partisan change. Partisan loyalties may have precluded Republican populations from converting over to the Democrats. And the factors that produced past non-participation may have worked against the activation of non-voters.

Given this, it is difficult to develop a priori expectations for the effects of many partisan and non-voting variables. The exception, however, is the main effect of previous Democratic voting on changes in Democratic support. All else equal, we would expect that larger prior Democratic voting populations would be associated with smaller increases in Democratic support, as there were fewer available voters to move into the particular partisan camp. To measure these effects, I include the variable $Proportion\,Democratic_{t-1}$ in the Geographically Weighted Regressions. This variable measures the proportion of the county’s voting age population voting for the Democratic presidential candidate in the preceding presidential election (the Appendix provides descriptive statistics for all variables in each of the three elections). To examine the main effects of prior Republican voting and prior non-voting, I also include the variables $Proportion\,Republican_{t-1}$ (the proportion of the county’s voting age population that voted for the Republican presidential candidate in the prior presidential election) and $Proportion\,Non-Voting_{t-1}$ (the proportion of the county’s voting age population that did not vote in the prior presidential election) in the GWR models. Because of the competing effects of raw pools of voters and inertia already discussed, these variables do not present directional expectations.

In addition to these main effects, it is also important to examine how social interactions between citizens and how local partisan contexts may have shaped changes in party support (Brown 1988, 1991). For example, it may be that the movement of non-voters into the De-
Democratic camp was made more likely by the existence of a large population of pre-existing Democratic voters in the county. Conversely, perhaps the reason that non-voters previously chose not to participate was because they were opposed to a locally dominant Democratic party. If so, the presence of a large local Democratic constituency could serve to impede the mobilization of non-voters into support for the party’s presidential candidate. These interactive effects, it is important to note, may occur either due to direct interpersonal interactions between citizens or because of the contextual presence of partisan populations even where there were no interpersonal interactions between Democratic and non-voting populations. In short, these effects are consistent either with contact or context and it is impossible from the available aggregate data to determine which is the mechanism at work.

To examine the possible effects of social interactions and context on voting, it is important to include interaction terms of prior partisan and non-voting populations in the GWR models. These interaction terms, for the reasons previously stated, do not present directional expectations. To capture social interaction and contextual effects within counties, I include three interaction terms in the models: $Proportion \text{ Democratic}_{t-1} \times Proportion \text{ Republican}_{t-1}$, $Proportion \text{ Democratic}_{t-1} \times Proportion \text{ Non-Voting}_{t-1}$, and $Proportion \text{ Republican}_{t-1} \times Proportion \text{ Non-Voting}_{t-1}$, with the terms in the interactions as defined previously.

The final political variable is $Unemployment \text{ Rate}$, which captures the county-level unemployment rate in 1930. This variable, from 1930 U.S. Census data, measures the proportion of the county-level labor force that reported being unemployed in 1930. The focus of this analysis is on aggregate voting behavior and the factors that produced aggregate, county-level changes in Democratic support. The analysis does not seek to make ecological inferences regarding individuals. With an aggregate analysis, we cannot determine whether unemployment and resulting political interest or alienation led unemployed individuals vs. employed individuals toward or away from the Democratic Party. It is important, however, to determine how unemployment rates affected aggregate changes in party support during a political realignment shaped significantly by economic conditions. For ecological reasons and because of the competing effects of political interest and alienation resulting from unemployment, the variable $Unemployment$
Rate does not present aggregate directional expectations.

In addition to political factors, demographic factors may also have conditioned voting changes. Immigrant and Catholic populations figure prominently in accounts of the New Deal realignment, with scholars arguing that these groups were mobilized into the New Deal coalition (Key 1955, Andersen 1979). It is important to determine how the presence of these groups affected aggregate voting during the New Deal realignment and whether the effects differed across the three quite different Democratic candidacies of this period. Were these effects different in response to the Irish-Catholic Smith’s 1928 candidacy than in Roosevelt’s two candidacies? Did the effects differ between Roosevelt’s two quite different victories in 1932 and 1936?

In examining the aggregate effects of these variables, we must be sensitive to the ecological inference problem. We cannot assume that foreign-born and Catholic populations translated, for example, into particularly strong aggregate increases in Democratic support in response to Smith’s candidacy. The presence of large local immigrant and Catholic populations may have made native-born and non-Catholic citizens less likely to support the Democratic Party. Because of the centrality of immigrant and Catholic populations in accounts of the New Deal realignment, however, it is important to examine how the sizes of these populations affected aggregate changes in Democratic support during the realignment. The sizes of the immigrant and Catholic populations are measured by two variables at the county level, Proportion Foreign Born and Proportion Roman Catholic.

The third demographic variable is Population Change, which measures the county-level population change between elections (in ten thousands). Population change can engender voting change by introducing a dynamic element into existing partisan social networks. Alternatively, it may impede voting change by weakening the social network connections that promote voter mobilization.
To examine spatial nonstationarity in the effects of the political and demographic variables, I conducted preliminary tests of spatial nonstationarity for each of the variables in the Geographically Weighted Regression models.\textsuperscript{13} With one exception, all of the variables evidenced significant spatial nonstationarity in the three elections at a $p < .001$ level (the one exception was the $Proportion\, Democratic_{t-1} \times Proportion\, Non-Voting_{t-1}$ interaction in 1936). This preliminary evidence of spatial nonstationarity argues that a Geographically Weighted Regression analysis is warranted.

Table 2 presents the results of Geographically Weighted Regressions of changes in Democratic support between 1924 and 1928, 1928 and 1932, and 1932 and 1936. The first five columns in the table report, respectively, the minimum coefficient for the variable, the coefficient at the 25th percentile of the distribution, the median coefficient, the coefficient at the 75th percentile, and the maximum coefficient. The sixth column reports the coefficient for a standard model with global, non-varying coefficients. The seventh column reports the percentage of observations with significant positive coefficients at a $p < .05$ level for all variables other than $Proportion\, Democratic_{t-1}$ (which had a one-tailed test). The eighth column reports, for all variables, the percentage of observations with significant negative coefficients at a $p < .05$ level. The dependent variable in each model is Democratic Change. Reported below each model are the number of observations and the mean $R^2$ for the counties in the data. The Geographically Weighted Regressions are weighted by county-level voting age population.

Table 2 demonstrates the extensive geographic variation in the effects of the political and demographic variables. The minimum and maximum coefficients have different signs for each variable in each of the three elections examined. For many variables, this is also the case

\textsuperscript{13}These spatial nonstationarity tests were conducted using the gwr command in \texttt{Stata}. Some caution is warranted in interpreting these results because the gwr command does not accept weights, unlike the \texttt{spgwr} package in \texttt{R} that is used for the Geographically Weighted Regressions presented in this paper. As a consequence, unlike the GWR analyses presented in Table 2 of this paper, which are weighted by the county-level voting age population, these initial spatial nonstationarity tests are based on unweighted regressions. The \texttt{spgwr} package does not include tests for spatial nonstationarity.
for the interquartile range of coefficient values. Given this extensive geographic variation, standard global parameter estimates do not accurately capture the local effects of the political and demographic variables. This is reflected in the significance tests reported in the final two columns of the table. There are large percentages of both significant positive and negative effects for most variables in these elections.\footnote{The large negative minimum values on $\text{Proportion Democratic}_{t-1}$, $\text{Proportion Republican}_{t-1}$, and $\text{Proportion Non-Voting}_{t-1}$ in 1936 reflect Dade County, Florida. One other county, Monroe County, Florida was also a large negative outlier in this election, with values on these variables of -21.098, -21.338, and -20.971 (the next closest values on these three variables were, respectively, -7.577, -8.247, and -7.034). In a data set with so many observations, the inclusion of these two outliers in the data had little effect on the results. For example, an analysis excluding Dade and Monroe counties produced median values on $\text{Proportion Democratic}_{t-1}$, $\text{Proportion Republican}_{t-1}$, and $\text{Proportion Non-Voting}_{t-1}$ of -1.134, -1.001, and -0.830, little changed from the values in Table 2. Similarly, the global estimates for these same three variables were -1.764, -1.890, and -1.406, nearly identical to those in Table 2. Maps of the GWR coefficients were virtually identical with and without the two outliers included as well. Given this, I included the two outlier cases in the analysis.}

Examining first the changes in aggregate Democratic support between 1924 and 1928, we can see in Table 2 that $\text{Proportion Democratic}_{t-1}$ had its hypothesized negative effect in most of the country. In 85 percent of counties, previous Democratic support worked against increases in support for Al Smith and the Democrats in 1928. Likewise, prior Republican voting and prior non-voting also served to impede aggregate increases in Democratic support in 1928. $\text{Proportion Republican}_{t-1}$ had significant negative effects in more than 70 percent of counties; $\text{Proportion Non-Voting}_{t-1}$ had significant negative effects in nearly 85 percent of counties. The main effects of partisan tethers and prior non-participation were to impede aggregate shifts toward the Democrats in the great majority of locales in 1928.

The effects become more mixed when we look at the interactions between the variables measuring prior partisan and non-voting behavior. In most counties in 1928, the interaction term, $\text{Proportion Democratic}_{t-1} \times \text{Proportion Republican}_{t-1}$, had a negative effect on changes in Democratic support in 1928. However, in more than a quarter of counties, the effect of this interaction term was positive. In more than half of counties, the interaction term, $\text{Proportion Democratic}_{t-1} \times \text{Proportion Non-Voting}_{t-1}$, reduced shifts to the Democrats in 1928, but in more than 30 percent of counties this interaction had a positive effect. In more than 60 percent of counties, the interaction term, $\text{Proportion Republican}_{t-1} \times \text{Proportion Non-Voting}_{t-1}$,
a negative effect on changes in Democratic support, but in nearly 20 percent of counties this interaction promoted shifts toward the Democrats. Thus, while the joint presence of prior partisan and non-voting populations further impeded movements toward the Democrats in most locales, the coexistence of these populations served also to promote movement toward the Democrats in a sizable percentage of counties, whether through direct interpersonal interactions or through contextual effects.

Figure 2 shows how prior Democratic and Republican support, and the interaction of this support, influenced the political geography of aggregate changes in Democratic support in 1928. The upper left map in figure 2 plots the GWR coefficients for Proportion Democratic$_{t-1}$, the upper right map plots the GWR coefficients for Proportion Republican$_{t-1}$, and the lower left map plots the GWR coefficients for the interaction term, Proportion Democratic$_{t-1}$ x Proportion Republican$_{t-1}$. In each map, counties with significant GWR coefficients (at a p < .05 level) are plotted in four shades of gray, with the effects of the variables on Democratic Change becoming more negative as the shades of gray become lighter. In each map, counties with insignificant GWR coefficients are plotted in white.

As can be seen, geographic variation in the main effect of Proportion Democratic$_{t-1}$ had only a slight correspondence to the local spatial autocorrelation in Democratic Change in 1928. Less negative effects of prior Democratic support in portions of Wisconsin, Minnesota, and New York played a role in shaping the political geography of voting in 1928 in these areas, but overall, the main effect of Proportion Democratic$_{t-1}$ on this political geography was likely more one traceable to values on this variable than geographic variations in the effects of the variable. In contrast, some of the Western shift toward the Democrats in 1928 can be traced to the larger positive effects of Proportion Republican$_{t-1}$ on Democratic Change in these locales in 1928. Similarly, the interaction of prior Democratic and Republican support had a larger positive effect on Democratic change in the mountain region than in some other locales in this election. Clearly the correspondence between the GWR coefficients and changes in aggregate Democratic support is not complete (note, for example, the larger positive effects of the Proportion Democratic$_{t-1}$ x Proportion Republican$_{t-1}$ interaction in portions of Texas and New Mexico where spatial
autocorrelation was actually below the mean). However, the maps in Figure 2 display the spatial nonstationarity in the effects of prior Democratic and Republican support on aggregate Democratic change in 1928 and indicate the role that this spatial nonstationarity played in shaping the political geography of voting in this election.

In addition to the voting variables, demographic variables also influenced aggregate Democratic change in 1928. Proportion Foreign Born had a positive effect on Democratic change in more than half of local electorates in the country and a negative effect in nearly 30 percent of electorates. This raises a caveat to Key’s (1955) finding that increases in support for the Democratic Party in 1928 were higher in New England towns with large immigrant populations. The GWR analysis shows that the relationship between the size of the local immigrant population and Democratic change was geographically varying and was not positive in all locales.

Interestingly, there is little evidence of an aggregate backlash in response to local Catholic populations. In 96 percent of counties, Proportion Roman Catholic had a significant positive effect on changes in Democratic support. In less than 2 percent of counties was the effect negative. Where local Catholic populations were larger in 1928, support for the Democrats also grew stronger. Finally, the effects of population change were highly mixed in 1928. In 44 percent of counties, Population Change had a positive effect on Democratic Change; in 46 percent of counties it had a negative effect. Overall, changes in population exerted less of a consistent effect on Democratic Change than did local Catholic populations in response to the candidacy of the first Roman Catholic major party nominee for president.

Turning to changes in Democratic support between 1928 and 1932, we can see from Table 2 that prior Democratic voting continued to impede aggregate Democratic gains in most counties. Likewise, prior Republican support and prior non-voting also impeded Democratic gains in 1932. Thus, as in 1928, the main effects of prior partisan voting and prior non-participation were to impede movement to the Democrats in most of the country.

As in 1928, the interaction terms of Proportion Democratic$_{t-1}$ x Proportion Republican$_{t-1}$ and Proportion Democratic$_{t-1}$ x Proportion Non-Voting$_{t-1}$ had negative effects on aggregate Democratic change in more locales than they had positive effects in. However, the percentages
of negative and positive effects were much closer in 1932 than in 1928. The latter interaction, for example, had negative effects in only slightly more counties than it had positive effects in.

Most importantly, the interaction term of $Proportion Republican_{t-1} \times Proportion Non-Voting_{t-1}$ had a fundamentally different effect on aggregate Democratic change in 1932 than it had in 1928. Where in 1928 this interaction had had a negative effect in more than 60 percent of counties, in 1932 it had a positive effect on Democratic change in more than 80 percent of counties. The coexistence of large pools of Republicans and non-voters fueled movement toward Franklin Roosevelt in most of the country where it had impeded movement toward Al Smith in most of the country in 1928. This positive effect also stands in contrast to the negative main effects for both of the variables included in the interaction term. Where large numbers of Republicans or non-voters alone did not promote shifts to the Democrats, the joint presence of these two quite different but perhaps equally discontented populations fostered movement to the Democrats during the Great Depression election of 1932. This same movement among Republicans and non-voters was not promoted as extensively by the presence of previous Democratic voters, suggesting perhaps that support by local Democrats for Smith’s pre-Depression candidacy was viewed by Republicans and non-voters as distinct from Roosevelt’s Depression-era candidacy.

In 1932, immigrant populations once again were more positively than negatively related to changes in Democratic support, though the margin of positive vs. negative effects was smaller than it had been in 1928. Without a Catholic presidential candidate on the ballot, however, $Proportion Roman Catholic$ had a fundamentally different effect on Democratic change in 1932 than it had in 1928. Where in 1928, the variable had a positive effect on Democratic change in 96 percent of counties, in 1932 the variable had a negative effect on Democratic change in 93.3 percent of counties. $Population Change$ had a negative effect in more counties than it had a positive effect in in 1932, indicating that the dynamic element introduced into existing partisan social networks by population change did not serve to fuel aggregate Democratic gains in most of the country.

Controlling for other variables, unemployment impeded movements toward the Democrats
and Franklin Roosevelt in 1932. In 91.2 percent of counties, the effect of Unemployment Rate on Democratic change in 1932 was negative; in only 1 percent of counties was its effect positive. It is important to note that the measure of unemployment is from the 1930 census, a time at which unemployment rates were still considerably lower than their peaks in 1932 and 1933 (Smiley 1983). It is also important to note, however, that Franklin Roosevelt did not campaign in 1932 on a program of active economic intervention at the levels that would occur under the New Deal; in fact, he advocated reducing federal expenditures during his 1932 campaign (Renshaw 1999, 338). Faced with this choice, some of those citizens who were experiencing early levels of unemployment may have abstained. With aggregate data alone, it is impossible to determine which citizens were producing these aggregate effects. It is clear, however, that controlling for other factors, unemployment rates served to reduce, not increase support for Roosevelt in 1932.

The 1936 election evidences both some continuity and some change with the preceding elections. As in the earlier elections, the main effects of prior Democratic, Republican, and non-voting populations were negative. However, in Roosevelt’s first re-election, the effects of the interaction terms including prior Democratic voting were fundamentally different in 1936 than in 1928 and 1932. In those elections, the interaction terms Proportion Democratic_{t-1} x Proportion Republican_{t-1} and Proportion Democratic_{t-1} x Proportion Non-Voting_{t-1} had more negative than positive effects on Democratic change. In 1936, this was not the case. In this election, the interaction including 1932 support for Roosevelt and 1932 Republican support promoted Democratic gains in nearly 60 percent of counties. Similarly, the interaction including 1932 Roosevelt support and 1932 non-voting fueled Democratic gains in 53.3 percent of counties. Large local pools of previous Roosevelt voters combined with the performance of the government during Roosevelt’s first term may have provided local cues favoring Roosevelt’s re-election.

In 1936, Proportion Foreign Born had a positive effect on Democratic change in more locales than it had a negative effect in. In fact, this effect was more consistently positive in 1936 than in either 1928 or 1932. Thus, 1936, more than either of the two preceding elections, was an
election where increased Democratic support was disproportionately located where immigrant populations were located. Unlike 1932, *Proportion Roman Catholic* generally had a positive effect on changes in Democratic support, though the effects were not as widespread as during Smith’s candidacy in 1928. Finally, *Population Change* had a much more consistent positive effect on Democratic change in counties in 1936 than in the preceding elections.

8 Conclusion

Political geography has long played a prominent role in conceptions of political realignments. To date, however, spatial analyses have been underapplied in the study of political realignments. The results in this paper demonstrate the utility of the political geographic perspective on realignments, and, accordingly, the utility of spatial analyses for the study of these realignments. The global and local Morans demonstrate a strong spatial structuring of voting during the New Deal realignment that is consistent with the political geographic conception of realignments. Shifts in voting support were not spatially random, but rather, were geographically clustered in each of the elections examined.

This paper’s analysis also suggests that standard models in which independent variables are assumed to have globally invariant effects are likely to be inappropriate for modeling political behavior in a geopolitically diverse polity such as the United States. As the analysis demonstrates, standard global parameters do not accurately capture the diverse effects of prior voting behavior and demographics during the New Deal realignment. The Geographically Weighted Regressions demonstrate the significant geographic variation in the effects of these factors on voting behavior. In a polity in which sectionalism and localism have played important roles, this is as we should expect. The analysis suggests the utility of a modeling approach such as GWR that incorporates the spatial nonstationarity in the sources of political behavior in the United States.

The effects of the interactions between partisan and non-voting populations highlight the potential for significant social interaction and contextual effects during political realignments. Particularly interesting is how these effects varied over time. Prior to the Great Depression,
large local Democratic populations impeded Democratic gains as did the interactive effect of large Republican and non-voting populations. As the economic crisis developed, the joint presence of large Republican and non-voting populations provided the Democrats in 1932 with the raw materials for political change. Large local populations of Smith voters, however, still served as an impediment to further Democratic gains. As Roosevelt developed a record in office, local pools of previous Roosevelt support combined with prior Republican and non-voting populations to further promote Democratic gains. This suggests that these local Democratic populations may have been perceived differently and more positively by Republicans and non-voters as the realignment continued to develop and deepen.

Roman Catholic populations and economic unrest figure prominently in accounts of the New Deal realignment and this paper sheds some new light on their effects during the realignment. The Smith candidacy enjoyed larger gains in 1928 in locales with larger Catholic populations. Aggregate backlash effects were not evidenced in places where large numbers of Catholics lived, but rather, if experienced at all, occurred in locales where Catholics were less numerous. Contrary to common conceptions of the period, local unemployment rates did not promote gains by Roosevelt in 1932, but instead reduced these gains in more than 90 percent of counties.

Overall, the results of the analysis argue that political realignments carry both political and demographic dimensions. It is precisely because of these dimensions that political geography matters for political realignments. Because the issues forging realignments vary in their importance across a nation as large and diverse as the United States, political and demographic factors also vary in their effects across the nation. The analysis of the New Deal realignment in this paper argues that political geography and the spatial structuring of voting changes are, as a consequence, vital features of political realignments.
References


Figure 2: 1928 GWR Coefficients

Proportion Democratic t-1

Proportion Republican t-1

Proportion Democratic t-1 x Proportion Republican t-1
Table 1: Descriptive Statistics for Democratic Change by Local Moran, 1924-1936

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<th></th>
<th>1932-36</th>
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### Table 2: Geographically Weighted Regression Estimates

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<th>3rd Qu.</th>
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<td>-0.364</td>
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<td>-0.432</td>
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<td>0.621</td>
<td>6.561</td>
<td>0.201</td>
<td>53.3</td>
<td>28.4</td>
</tr>
<tr>
<td>Proportion Republican \times Proportion Non-Voting</td>
<td>-7.459</td>
<td>-0.219</td>
<td>0.618</td>
<td>1.129</td>
<td>4.348</td>
<td>1.214</td>
<td>65.0</td>
<td>24.8</td>
</tr>
<tr>
<td>Proportion Foreign Born</td>
<td>-1.356</td>
<td>-0.160</td>
<td>0.325</td>
<td>0.753</td>
<td>2.930</td>
<td>0.103</td>
<td>61.2</td>
<td>29.9</td>
</tr>
<tr>
<td>Proportion Roman Catholic</td>
<td>-0.715</td>
<td>-0.038</td>
<td>0.041</td>
<td>0.116</td>
<td>0.636</td>
<td>0.030</td>
<td>54.1</td>
<td>28.6</td>
</tr>
<tr>
<td>Population Change</td>
<td>-1.132</td>
<td>-0.005</td>
<td>0.003</td>
<td>0.024</td>
<td>0.873</td>
<td>0.001</td>
<td>57.0</td>
<td>31.2</td>
</tr>
<tr>
<td>Intercept</td>
<td>-3.637</td>
<td>-0.266</td>
<td>0.905</td>
<td>1.630</td>
<td>56.860</td>
<td>1.435</td>
<td>70.4</td>
<td>13.2</td>
</tr>
<tr>
<td>N = 3091, Mean (R^2 = .64)</td>
<td></td>
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</tbody>
</table>

One-tailed tests for Proportion Democratic \(t-1\), two-tailed tests for all other variables.
Regressions weighted by county-level voting age population.
<table>
<thead>
<tr>
<th>Variable</th>
<th>1924-28</th>
<th>1928-32</th>
<th>1932-36</th>
</tr>
</thead>
<tbody>
<tr>
<td>Democratic Change</td>
<td>.044</td>
<td>.138</td>
<td>-0.002</td>
</tr>
<tr>
<td></td>
<td>(.099)</td>
<td>(.081)</td>
<td>(.068)</td>
</tr>
<tr>
<td>Proportion Democratic$_{t-1}$</td>
<td>.157</td>
<td>.200</td>
<td>.339</td>
</tr>
<tr>
<td></td>
<td>(.100)</td>
<td>(.092)</td>
<td>(.133)</td>
</tr>
<tr>
<td>Proportion Republican$_{t-1}$</td>
<td>.222</td>
<td>.304</td>
<td>.194</td>
</tr>
<tr>
<td></td>
<td>(.151)</td>
<td>(.168)</td>
<td>(.139)</td>
</tr>
<tr>
<td>Proportion Non-Voting$_{t-1}$</td>
<td>.544</td>
<td>.492</td>
<td>.457</td>
</tr>
<tr>
<td></td>
<td>(.225)</td>
<td>(.227)</td>
<td>(.243)</td>
</tr>
<tr>
<td>Proportion Democratic$<em>{t-1}$ x Proportion Republican$</em>{t-1}$</td>
<td>.038</td>
<td>.068</td>
<td>.075</td>
</tr>
<tr>
<td></td>
<td>(.040)</td>
<td>(.048)</td>
<td>(.059)</td>
</tr>
<tr>
<td>Proportion Democratic$<em>{t-1}$ x Proportion Non-Voting$</em>{t-1}$</td>
<td>.075</td>
<td>.084</td>
<td>.127</td>
</tr>
<tr>
<td></td>
<td>(.042)</td>
<td>(.027)</td>
<td>(.042)</td>
</tr>
<tr>
<td>Proportion Republican$<em>{t-1}$ x Proportion Non-Voting$</em>{t-1}$</td>
<td>.090</td>
<td>.114</td>
<td>.059</td>
</tr>
<tr>
<td></td>
<td>(.053)</td>
<td>(.048)</td>
<td>(.038)</td>
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<tr>
<td>Proportion Foreign Born</td>
<td>.056</td>
<td>.049</td>
<td>.044</td>
</tr>
<tr>
<td></td>
<td>(.058)</td>
<td>(.053)</td>
<td>(.048)</td>
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<tr>
<td>Proportion Roman Catholic</td>
<td>.084</td>
<td>.085</td>
<td>.086</td>
</tr>
<tr>
<td></td>
<td>(.116)</td>
<td>(.120)</td>
<td>(.124)</td>
</tr>
<tr>
<td></td>
<td>(1.533)</td>
<td>(1.037)</td>
<td>(.578)</td>
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<tr>
<td>Unemployment Rate</td>
<td>.037</td>
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<tr>
<td></td>
<td>(.027)</td>
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</tr>
</tbody>
</table>

*Means with standard deviations in parentheses*