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ELECTORAL ACCELERATION:  
THE EFFECT OF MINORITY POPULATION ON MINORITY VOTER TURNOUT

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**ABSTRACT**

Political outcomes are well understood to depend on the spatial distribution of citizen preferences. In this paper, we document that the same holds for the individual decision to be politically active. Using both cross-sectional and longitudinal evidence on turnout, we show that citizens are more likely to vote if they live in a jurisdiction with a larger number of persons sharing similar political preferences. As a result, changes in the identity of a district's median citizen lead to even larger changes in the identity of its median voter, a phenomenon we term electoral acceleration. We present evidence that electoral acceleration is in part due to the structure of media markets. Candidates find it easier to direct campaign efforts at larger groups because many existing media outlets cater to this audience.

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## **I. Introduction**

What is the role of minority preferences in a democratic society? Few questions in political economy resonate as deeply as this one. Interestingly, the two most important concerns over minority preferences are diametrically opposed. On the one hand, minorities are seen as powerless. The “tyranny of the majority” has long been considered to be one of “the evils against which society requires to be on its guard” (Mill, 1859). Based on this concern, the Framers of the U.S. constitution sought to design democratic institutions that would render “the majority ... unable to concert and carry into effect schemes of oppression” (Madison, 1788). In contrast to the view that democracy would leave minorities powerless, there is the fear, prominently expressed in Madison’s discussion of factions, that small, but highly motivated groups might hijack the democratic process and exert undue influence. The superior ability of small groups to solve problems of collective action is one basis for the view that minorities are not powerless but, relative to their size, all too influential in democratic decision-making (Olson, 1971).

In this paper, we address the question of minority influence by examining how electoral participation varies with the size of groups of citizens. Turnout is of interest not only because electoral participation is often seen as a basic democratic ideal (Lijphart, 1997). Turnout also matters because changes in the composition of the electorate lead to systematic changes in policy (Husted and Kenny, 1997; Lott and Kenny, 1999). Moreover, turnout among blacks, the focus of this paper, is of particular relevance in view of the ongoing debate about majority-minority districts in the United States. Based

on the 1965 Voting Rights Act and its 1982 amendment, at-large elections can be illegal if they have the effect of reducing the opportunity for minority voters to elect representatives of their choice. This has led to the creation of numerous single-member districts, many of which have a supermajority of black citizens. Courts and voting rights lawyers favor districts that are 65% black because they believe that this fraction is needed to guarantee that black voters constitute a majority of those going to the polls (Briffault, 1995).

Majority-minority districts have been criticized both on grounds of efficacy as well as for constitutional reasons.<sup>1</sup> While there is little doubt that these districts increase the number of black representatives, it is less obvious that they truly further the interests of the minority. As black voters become increasingly concentrated in a few districts, representatives of mostly white districts may grow less sensitive to minority issues. On balance, there appears to be a positive correlation between the number of majority-minority seats and the likelihood of electoral success for Republican candidates (Brace, Grofman and Handley, 1987; Hill, 1995; Lublin, 1997). Simulation studies conclude that minority interests would be best served if blacks made up between 45% and 47% of the voting age population (Cameron, Epstein and O'Halloran, 1996; Epstein and O'Halloran, 1999).

The prevailing, if often implicit, view in much of this literature is that the size of groups influences election outcomes by changing the identity of a district's median

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<sup>1</sup> The Supreme Court overturned several decisions to create majority-minority districts, arguing that the use of race as the key factor in drawing new district lines violates the constitutional rights of white voters (see,

citizen. If electoral participation were constant, changes in the identity of the median *citizen* would lead to corresponding changes in the identity of the median *voter*. The evidence presented here documents that this view systematically underestimates the electoral impact of the size of groups. We show that citizens are more likely to participate in elections if they live in a jurisdiction with a higher concentration of persons sharing similar political preferences. Consequently, increases in the number of black citizens in a district make other blacks in the district more likely to vote, and they make non-blacks less likely to participate in the election. Our main result is that changes in the identity of the median *citizen* lead to even *larger changes* in the identity of the median *voter*, a phenomenon we term *electoral acceleration*. As a result of these participatory effects, “moving” black citizens from one district to another helps blacks in the new district, and hurts blacks in the old jurisdiction. With electoral acceleration, these effects are larger than changes in the median citizen would lead us to expect.

While the main contribution of this study is our empirical documentation that electoral acceleration occurs, we also offer empirical evidence on why it operates. It is well known that candidates can increase political participation by campaigning to groups of citizens (Wielhouwer and Lockerbie, 1994). Most channels of communication used to disseminate campaign information – newspapers, radio and TV stations – exist independent of the campaign season. The supply of these channels typically carries considerable fixed cost, which can only be overcome if demand is sufficiently strong. Candidates thus find more channels of communication for larger than for smaller groups.

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e.g., *Shaw v. Reno* 509 U.S. 630 (1993) in the case of Florida; *Bush v. Vera* 000 U.S. 94-805 (1996) for Texas).

For instance, radio stations or newspapers targeting a black audience only exist in places with many blacks (Waldfoegel, 1999). Where such newspapers do not exist, candidates find it more difficult to reach black citizens. Ultimately, such variation in the relative price of communicating with different groups appears to be translated into variation in voting tendencies for these groups. Larger groups are more likely to be campaigned to and are thus more likely to turn out.

Electoral acceleration has important implications for a number of questions in political economy. Following Olson (1971) and Becker (1983), there has been much interest in instances where small groups have a disproportionately large influence on policy outcomes. Electoral acceleration provides an example for a mechanism which puts small groups at a disadvantage. While the ability to solve problems of collective action undoubtedly contributes to a group's political effectiveness, our findings highlight the importance of other determinants of political influence which run counter to the intuition that small groups generally enjoy a relative competitive advantage.

Political participation and membership in groups are also the subject of a more recent debate on the importance of social capital (Putnam, 1993). Indicators for social capital such as turnout rates, civic engagement and trust appear to be related to measurable economic performance (Knack and Keefer, 1997). Several papers document that race has a profound impact on levels of social capital. For instance, racial heterogeneity decreases the level of trustworthiness in groups (Glaeser, Laibson, Scheinkman and Soutter, 2000), and individuals living in more racially heterogeneous communities are less likely to be members of churches and clubs (Alesina and La Ferrara,

2000). It appears plausible to expect that greater social interaction is likely to lead to increases in turnout. Social organizations such as unions and churches facilitate the dissemination of political information, and face-to-face interaction appears to be particularly effective in increasing turnout rates (Gerber and Green, 2000b). If correct, this type of reasoning suggests that racially more heterogeneous communities will have lower turnout rates both among blacks and whites because members of both groups become less likely to be socially active as racial fragmentation increases. The present paper contributes to the discussion of race and social capital by documenting that black citizens are *more likely* to turn out if they represent a larger fraction of the population. As blacks constitute a minority in most counties and in all states, increases in their population share are synonymous with increases in racial fragmentation. While racial heterogeneity may be responsible for low levels of trustworthiness and membership in associations, the relationship between racial fragmentation and political participation – another measure of social capital – appears to be more complicated and dominated by forces which cause members of larger groups to become politically more active.

The paper proceeds in six sections. Section II discusses the role of communication in influencing turnout rates. Section III describes the data used in the study. Section IV presents evidence that political preferences differ between US blacks and whites. Section V describes the empirical strategy employed in the study and presents evidence of electoral acceleration. Section VI offers evidence for the mechanism that we posit. The paper concludes with a discussion of the implications of our findings.

## II. Communication and Participation

Political economy models of participation generally recognize two reasons why citizens vote: the prospects of changing the outcome of an election and the utility that voters get from the act of voting (Downs, 1957; Riker and Ordeshook, 1968). The chief difficulty of explaining rational turnout in the standard framework is that both decision-theoretic and game-theoretic reasoning suggest that the probability of being decisive in a large electorate is essentially zero.<sup>2</sup> Thus, the rational model is reduced to stating that citizens will participate if the direct benefits of voting outweigh the costs of participation. This tautology is of course only helpful if one can add more structure to the problem.

In this study, we focus on candidates' costs of campaigning to different groups of citizens as one determinant of turnout. We refer to "groups" as sets of citizens who share similar political preferences. It is well known that campaign efforts increase the likelihood of participation (a summary of experimental results is given in Gerber and Green, 2000b; see also Cox and Munger, 1989; Bartels, 1993; Wielhouwer and Lockerbie, 1994; Shachar and Nalebuff, 1999). One interpretation of the effectiveness of campaigning is that citizens are reluctant to cast their vote if they feel ill informed (Palfrey and Poole, 1987).<sup>3</sup> For instance, citizens frequently abstain from voting in obscure races, even in situations where they have already borne the cost of going to the polls (Matsusaka, 1995). By offering such information, candidates reduce citizens'

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<sup>2</sup> In models where the probability of being decisive is determined endogenously, turnout can be substantial if voters have complete information about the preferences and voting costs of every other voter (Palfrey and Rosenthal, 1984). However, with less than full information, the only voters that participate in elections are citizens whose direct utility of voting outweighs the costs of participation (Palfrey and Rosenthal, 1985). This result implies that, at least for large electorates, the variation in turnout rates is likely to be explained by variation in the direct benefits and costs of voting.

overall cost of voting and thus increase the likelihood of participation. Under this interpretation of the effectiveness of campaign efforts, candidates have an incentive to target information at likely supporters (for empirical evidence, see, e.g., Huckfeldt and Sprague, 1992).

Our main argument is that, under plausible assumptions, candidates can find it less expensive to campaign to larger groups of citizens. This cost advantage stems from the fact that a multitude of communication channels – newspapers, TV programs, radio shows – exists for large groups, while smaller groups are often more difficult to reach. For instance, it is easier to provide campaign information to Spanish speakers in cities that have a Spanish language radio station. Whether or not such a media outlet exists depends largely on the *absolute number* of persons sharing similar preferences for media content (Siegelman and Waldfogel, 1998; Waldfogel, 1999).

In the United States, most voters get their information about policy platforms from television and newspapers (Strömberg, 1999a).<sup>4</sup> This provides candidates with two principal means of disseminating political information: paid advertisements and efforts to influence media content. Groups that watch TV and read newspapers are easier to reach than groups that do not consume such products. Thus, the demand for media content is an important determinant of the cost of campaigning. In this setting, two mechanisms can give rise to a positive relationship between group size and turnout.

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<sup>3</sup> In addition, non-partisan appeals to civic duty also appear to increase turnout (Gerber and Green, 2000a).

<sup>4</sup> In the most expensive media markets, candidates rely more heavily on direct mail. (Ansolabehere, Gerber and Snyder, 1999)

(i) *Availability of media outlets*: For small groups, the fixed costs of providing a newspaper or a TV channel, which offer the news and entertainment these groups are interested in, may be prohibitively high (Spence and Owen, 1977; see also Bresnahan and Reiss, 1991 for empirical evidence on the relationship between the size of the market and the number of competing firms). If preferences for media content are correlated with citizens' policy preferences, some candidates will find it difficult to reach groups of likely supporters. For example, blacks and whites prefer different kinds of media content (for radio, see Waldfogel, 1999; for newspapers, see George and Waldfogel, 2000). In section IV of this paper, we will also show that blacks have significantly more liberal political preferences than whites. If some black citizens do not consume media products because these products do not correspond to their preferences, liberal candidates will find it more difficult to reach these potential supporters. Thus, we expect turnout among blacks to be comparatively low in cities with no (or few) black-targeted media outlets.

(ii) *Media content*: Even in cases where the minority is too small to warrant the production of specialized media outlets, the relative size of the minority will influence media content, minority consumption, and thus the likelihood of participation. Consider the case of determining the content of a single daily newspaper in a city. A profit-maximizing paper values readers because advertisers are willing to pay for the right to send messages to these individuals (for a detailed analysis of optimal levels of advertising and product variety, see Anderson and Coate, 2000). The aggregate demand for advertised products depends, among other factors such as income, on the size of groups. Thus, all else being equal, the paper is better off by printing an article that is of interest to

a larger audience (Strömberg, 1999a). Under some circumstances, the paper will provide minority-targeted content. For instance, if circulation increases at a decreasing rate in the number of articles that are of interest to the majority, it is possible that the paper will cover some minority issues. The larger the minority, the more minority-targeted content will be provided. This, in turn will increase the likelihood that minority citizens read the daily. This view is consistent with observed empirical regularities. For example, George and Waldfogel (2000) document that newspapers report more frequently about issues of interest to blacks in cities with a larger black share of population. Increases in minority-targeted content in turn raise black readership. To the extent that candidates use newspapers to stimulate turnout, majority candidates enjoy a comparative advantage in reaching their supporters via papers. The smaller the minority, the greater is the advantage of majority candidates.<sup>5</sup>

These two mechanisms suggest that both the *absolute size* of minorities as well as their *fraction of the total population* can influence turnout. The number of minority citizens may matter because of the fixed costs of supplying media outlets. The population share of minority citizens can be important because it reflects the incentives of newspapers and TV stations to target content toward the preferences of minorities.

To the extent that media content reflects the population share of minorities, we expect to observe systematic differences in turnout between local and national political contests, and these differences should depend on the local fraction of blacks. Local races

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<sup>5</sup> In models with endogenous policy platforms, policies will reflect the interests of groups that are comparatively easy to reach. For example, Strömberg (1999b) documents that New Deal spending was significantly targeted at individuals who owned radios.

are predominantly covered by local media. Locally isolated blacks will thus find it comparatively difficult to acquire information about issues of interest in local races. In contrast, blacks living in cities with a large black population will enjoy more informative coverage. National races, on the other hand, are covered both by local and by national media. The targeting of national media reflects the national black population share. While national races might provide more detailed coverage for all citizens – and thus lead to general increases in turnout – this reasoning suggests that locally isolated blacks stand to gain most from the existence of a national race. Hence, relative to black turnout in local elections, increases in black turnout in the presidential race should be largest in places with few blacks. We will test this conjecture in section V of the paper. Before we turn to our empirical results, the next section provides some information about our data sources.

### **III. Data**

This study draws on five sources of data.

#### *A. CPS Voting Data*

Data on voting come from the 1994, 1996, and 1998 Consumer Population Surveys (CPS). Every two years the CPS asks individuals whether they voted in November. The dataset, which covers roughly 89,000 potential voters<sup>6</sup> in 1994, 78,000 in 1996, and 77,000 in 1998, also reports socioeconomic information about individuals, as

well as geographic identifiers. While the 1994 CPS reports counties for all observations, county identifiers are available for only about a third of potential voters in 1996 and 1998. Table 1 shows how the raw tendency for US citizens over age 18 to vote varies between blacks and nonblacks in 1994, 1996, and 1998.<sup>7</sup>

### *B. Census Population Data*

The data on group size in each state and county are drawn from the 1990 Census. The variation in group shares across states and counties is considerable. As table 2 shows, the unweighted average white population share of counties is 84.5 percent, and the median is 76.2 percent. The mean state black share is 8.6 percent, and the median is 1.7 percent. There is substantial variation, however. The 75<sup>th</sup>, 90<sup>th</sup>, and 95<sup>th</sup> percentile states are 10, 30, and 41 percent black.

### *C. GSS Data on Political Preferences*

We characterize political preferences using data from the General Social Survey (GSS), using answers to the question, “Are we spending too much, too little, or the right amount on...” 15 government spending categories. The GSS is a survey which has been administered since 1972. The question on spending preferences was included in most years. These data include about 32,000 whites and 5,000 blacks.

### *D. Black-targeted Weekly Newspapers and Radio Stations*

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<sup>6</sup> We include all persons who are eligible to vote whether they are registered or not. That is, we include individuals whose response to the question, “Did you vote in the November election?” was “yes” or “no”.

<sup>7</sup> Blacks are non-Hispanic blacks.

The data for black-targeted weekly newspapers in each MSA is taken from Burrelle's Media Directory (2000). The Directory classifies each of the 9,772 weekly newspapers in the United States according to its intended audience.<sup>8</sup> These audiences consist of twenty-three separate categories, including 224 papers in four categories we classify as black-targeted ("black," "black, general," "black, Hispanic," and "black, religious.") Data on the number of black-targeted radio stations in each metro area are derived from Duncan's American Radio (Duncan and Moon, 1997).

#### **IV. Do Political Preferences Differ Across Groups?**

Electoral acceleration is likely to arise if groups of citizens with different preferences for media content also have political preferences that are appreciably different from those of other groups. For our empirical work, we also require substantial cross-jurisdiction variation both in the absolute numbers and in the fraction of citizens for this group. The group of black US citizens meets all three requirements.

First, as pointed out above, there is substantial variation in the share of blacks across jurisdictions. Secondly, it is well known that blacks tend to consume different radio shows, TV programs and newspapers than whites. For example, in the spring of 2000, seven out of the ten most popular TV shows among blacks were rated among the ten least popular shows among whites (Nielsen Media Research, 2000).

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<sup>8</sup> We classify a paper as "weekly" if it is published fewer than seven times per week.

In this section, we document that the group of black citizens also meets our third requirement of having substantially different political preferences from whites. We show how political preferences vary across demographic groups with answers to the question, “Are we spending too much, too little, or the right amount on...” the following 15 issues: space program, environment, health, city problems, crime, drugs, education, race problems, defense, foreign aid, welfare, highways, social security, mass transportation, and parks. Given the categorical nature of the data, we estimate ordered probit models. The “Black-Nonblack” rows in table 3 report, for each spending category, the model’s predicted difference between the two groups in the probability of giving a particular answer. The results are striking: blacks’ and nonblacks’ answers differ significantly in all but one spending category (mass transportation). Relative to nonblacks, blacks think that the US government spends too little on 11 of 15 categories (except the space program, defense, and highways). These results indicate that blacks and nonblacks have different political preferences.

A note about preference differences by race is in order. It is not necessary for our purposes that preferences differ across race *because* of race. Even though the results presented in table 3 remain substantially the same if we add demographic controls, the differences may simply reflect unobserved heterogeneity in preferences that differs by race.

## V. Documenting Electoral Acceleration

### A. Empirical Implementation

We employ three basic empirical strategies for documenting the effect of group size on a citizen's tendency to vote. First, we examine the cross sectional relationship between her tendency to vote in a particular election year and, say, the fraction that are of her type in her jurisdiction. Second, by pooling black and nonblack data and including jurisdiction fixed effects, we examine the relationship between, say, the percent black and the gap between black and white turnout. Third, we make use of the contrast between local and higher-level (statewide or national) elections to construct longitudinal tests.

### B. Specifications and Results

#### 1. Cross sectional Analyses

The simplest measurement framework one might employ is cross sectional,

$$(1) \quad V_i = X_i \beta + \alpha b_s + v_i,$$

where  $V_i$  denotes whether the individual votes,  $X_i$  contains individual characteristics (education dummies, whether she lives in an MSA),  $b_s$  is the state black share (or the county black share  $b_c$ ) and  $v_i$  is an error term. Under our hypotheses, we expect  $\alpha$  to be positive for blacks. In addition to using shares, we can also use the absolute levels of jurisdiction population. Let  $W_s$  be a state's nonblack population and  $B_s$  the black population. Then the basic setup is

$$(2) \quad V_i = X_i \beta + A^w W_s + A^b B_s + v_i.$$

Under our hypotheses,  $A^b > 0$  for blacks. State and county-level estimates for these models are reported in table 4. The results are quite striking. Increases in the black population share increase black and decrease white participation rates significantly both at the state and at the county level. The effects for the absolute population levels are more mixed. The size of the black population appears to matter at the county, but not at the state level. We find qualitatively similar results for 1996 and 1998.

Though highly suggestive, these basic cross section relationships are vulnerable to the concern that the relationship between black population shares and group voting tendencies reflects unobserved heterogeneity in state and county tendencies to vote. That is, we are concerned that  $v_i = \mu_s + \varepsilon_i$ , where  $\mu_s$  is a jurisdiction fixed effect and  $\varepsilon_i$  is a well-behaved individual error. We can eliminate this unobserved heterogeneity that is constant across groups within jurisdictions with jurisdiction fixed effects estimates, which we implement by estimating voting probits on the black percent and/or population terms interacted with a black dummy, as well as race-specific MSA and education effects. That is, our second measurement approach pools data by race and includes jurisdiction fixed effects that are common across race. Define  $\delta^b$  as an indicator that is 1 for black individuals. For simplicity, we describe the model in terms of the share model given in (1):

$$(3) \quad V_i = X_i \beta + \delta^b X_i \beta^b + \gamma_1 \delta^b + \gamma_2 \delta^b b_s + \mu_s + \varepsilon_i.$$

In this model,  $\mu_s$  is the jurisdiction fixed effect and  $\gamma_2$ , the coefficient on the black dummy  $\times$  jurisdiction black population share, reflects the effect of the state's black share on the difference between black and nonblack voting tendencies.

Table 5 reports these results for state-level variables. In 1994 and in 1998, blacks are significantly more likely to vote, relative to whites, in states with higher black population shares. We observe the same positive relationship in the presidential year, though the effect is much smaller and not statistically significant. This is our first hint that electoral acceleration operates differently in national and in local elections. We will return to this point below. In columns 3, 6 and 9, we include the interactions of  $\delta^b$  with both the black population share and with the absolute size of the black and the white populations. We find that the fraction black is a more important determinant of turnout. Linear probability models using county-level data confirm the basic pattern: Blacks are more likely to turn out as the population share of blacks increases.<sup>9</sup>

## *2. Effects of Statewide Races*

Arguments made in section 2 suggest that non-local races, which attract the attention of regional and national media, are particularly beneficial for locally isolated blacks whose local media have little incentive to cover issues of concern to minorities. We start exploring this conjecture by asking whether blacks in predominantly white counties are more energized by statewide elections than blacks in heavily black counties. This question is best examined using election data from non-presidential years.

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<sup>9</sup> For reasons of space, we do not always report county-level results. The full set of tables is available upon request.

Define  $\delta^{98}$  as an indicator for 1998, and  $\delta^s$  as an indicator for the existence of a statewide race. Then one can estimate the effect of interest using the following specification,

$$(4) \quad V_i = X_i\beta + \phi_1\delta^{98} + \phi_2\delta^s + \phi_3\delta^s b_c + \mu_c + \varepsilon_i.$$

In this framework,  $\mu_c$  is a county fixed effect. The model is estimated separately by race on 1994 and 1998 data, and in the black model, the coefficient  $\phi_3$  shows how much a statewide election increases the black tendency to vote as the citizen's county is more heavily black. For counties with a larger white share than the statewide share of whites, we expect the non-local media coverage of the statewide race to provide more turnout inducement to blacks isolated in predominantly white counties. Thus, we expect  $\phi_3$  to be negative for blacks. Columns (1) and (2) of table 6 report these results, for whites and blacks, respectively. We find that  $\phi_3$  is negative and significant for blacks and small and insignificant for whites.

As the county black share reflects the difference between local and regional/national media to target minorities, the effect presumably depends on how black the state is. Furthermore, the state black share might assume a greater importance in explaining the black tendency to vote in statewide elections. To accommodate these possibilities, we augment specification (4) in three ways. First, we add the state black share interacted with a statewide dummy,

$$(4a) \quad V_i = X_i\beta + \phi_1\delta^{98} + \phi_2\delta^s + \phi_3\delta^s b_c + \phi_4\delta^s b_s + \mu_c + \varepsilon_i.$$

We expect  $\phi_4$  to be positive and  $\phi_3$  to be negative for blacks. Columns (3) and (4) of table 6 report these results. For blacks,  $\phi_4$  is positive and significant and  $\phi_3$  is negative and significant. Neither is significant for whites.

In a second modification of (4), we include a statewide dummy interacted with the county and the state black share. This allows the effect of the county black share to differ according to the black share of the state,

$$(4b) \quad V_i = X_i \beta + \phi_1 \delta^{98} + \phi_2 \delta^s + \phi_3 \delta^s b_c + \phi_4 \delta^s b_s + \phi_5 \delta^s b_s b_c + \mu_c + \varepsilon_i.$$

Columns (5) and (6) of table 6 report these results, and  $\phi_5$  is not significant. A third possibility is a special case of (4a) that merits mention, namely  $\phi_3 = -\phi_4$ . We test whether a county's excess of black share over the state share influences turnout using the following specification,

$$(4c) \quad V_i = X_i \beta + \phi_1 \delta^{98} + \phi_2 \delta^s + \phi_6 \delta^s (b_c - b_s) + \mu_c + \varepsilon_i.$$

Differences in media coverage at the local and the regional or national level lead us to expect that  $\phi_6 < 0$  for blacks. Columns (7) and (8) report this specification. Consistent with our previous findings,  $\phi_6$  is negative and significant for blacks and small and insignificant for whites. That is, the increase in black turnout for a statewide race is larger, the larger the white population share of the county is relative to the state-level share of whites.

### 3. *Effects of a Presidential Contest*

Differences in coverage that is provided by local and national media outlets will also influence turnout in presidential years. Information on candidate platforms may be more readily available for presidential races in general, and turnout among all groups may increase as a result. However, consistent with the effect of state-level contests, we expect the increase in turnout to be particularly large for locally isolated blacks who have difficulty learning about local races.

In a direct comparison between a presidential and a non-presidential race, we could only identify the effect of interest,  $\alpha\delta^{96}b_s$ , by assuming that, but for the presidential election, 1994 is like 1996. Instead, our strategy is to use three years of data, which allows us to study the effects of presidential races as deviations from a time trend. Under our hypotheses, deviations from the time trend should depend on the black population share. We account for the 1994-1998 trend in two ways. First, we introduce a time trend  $t$  ( $t = (year - 1994) / 2$ ). We interact this time trend with the state black share because it is possible that the general time trend varies with this share. By controlling for  $tb_s$ , we avoid interpreting as a black-share specific effect of the presidential contest, what is in fact a general effect. While we allow the overall tendency to vote to vary by arbitrary year effects, we force the part of the change in voting that goes with the percent black to be linear,

$$(5) \quad V_i = X_i\beta + \phi^{96}\delta^{96} + \phi^{98}\delta^{98} + \alpha^{96}\delta^{96}b_s + \lambda tb_s + \mu_s + \varepsilon_i.$$

In this specification,  $\alpha^{96}$  shows the effect of interest: Does the 1996 election, relative to a trend that goes with the percent black, induce larger increases in turnout among isolated blacks? Columns (1) and (2) of table 7 report estimates of (5) for whites and blacks. The coefficient  $\alpha^{96}$  is negative and significant for blacks and positive and significant for whites. This indicates that the presidential election raises turnout among blacks more as they are more isolated in predominantly white states. We can also estimate specification (5) with county instead of state-level shares of blacks. The county results show the same pattern as our state-level findings. A presidential contest is particularly effective in raising turnout among locally isolated blacks (results available upon request).

So far, we allow the time trend that goes with the percent black to vary across states, but without much flexibility. An alternative specification including state-specific time trends is

$$(6) \quad V_i = X_i\beta + \phi^{96}\delta^{96} + \alpha^{96}\delta^{96}b_s + \lambda^s t + \mu_s + \varepsilon_i.$$

In this specification, the year effects pick up deviations from the time trends. Columns (3) and (4) of table 7 report estimates of (6). The results are consistent with the findings in the first two columns of table 7. Turnout rates of locally isolated blacks increase to a greater extent in the presidential year.

Tables 4-7 provide considerable evidence that electoral acceleration operates. As black citizens make up a larger share of the population, they become more inclined to participate in elections. There are many possible reasons for the cross-sectional relationships that we observe. For instance, politically more active black citizens may

choose to live in cities with larger black populations. However, this type of unobserved heterogeneity cannot account for our longitudinal results. In the next section, we investigate more closely one of the mechanisms that can give rise to electoral acceleration, the availability of minority-targeted media outlets.

## **VI. Mechanism**

Our arguments in section 2 suggest that the structure of media markets may be one reason why electoral acceleration exists. In this section, we explore this mechanism empirically, using newspapers and radio stations as examples for channels of communication that can be used to disseminate political information.

The first two columns of table 8 present regressions of the white and black tendency to vote on the number of black-targeted newspapers in the MSA. The results are consistent with the hypothesis that a larger number of black-targeted media outlets increases black participation rates. The number of weeklies bears a positive relationship to the black tendency to vote, but none to white participation rates. Column 3 includes a MSA fixed effect and confirms that, relative to whites, blacks are more likely to vote in MSAs with more black weeklies. In columns 4, 5 and 6 of table 8, we repeat the analysis for black weeklies with the number of black-targeted radio stations. Again, we find that the number of black-targeted stations bears a positive relationship to differences between black and white voting tendencies. As the results in columns 3 and 6 indicate, the

positive effect of the number of minority-targeted media outlets on minority participation is not due to fixed unobserved differences between MSAs.

The FCC has long pursued policies promoting minority ownership of broadcast media, so from a public policy perspective, it is interesting to ask whether white and black owners of minority-targeted radio stations offer the same inducement for blacks to participate in elections. We might expect to find race-specific ownership effects if black owners receive greater benefits than whites from disseminating political information that is of interest to blacks.<sup>10</sup> In columns 7, 8 and 9, we distinguish between black-owned and white-owned black-targeted stations. Both types of stations induce blacks to vote, while there is no effect on white participation rates.

These results appear to confirm that greater access to media increases the likelihood of participating in elections. However, there is a concern that the number of media outlets is endogenously determined with the tendency to vote. We address this issue with a different identification strategy based on changes in the number of black-targeted radio stations. The 1996 Telecommunications Act substantially lifted restrictions on local station ownership. This change in legislation caused an increase in ownership concentration, which in turn significantly reduced the growth of stations and increased variety (Berry and Waldfogel, forthcoming).

Using longitudinal data on black-targeted media and voting, we can thus ask how the black voting tendency changes, 1994 to 1998, with changes in the number of black-

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<sup>10</sup> Siegelman and Waldfogel (1998) find that the number of black-owned stations increases the number of black-targeted stations, all else constant, suggesting that black station owners have different motivations.

targeted media outlets. The first two columns of table 9 show regressions of white and black voting tendencies on a 1998 dummy, the number of local black-targeted radio stations, which can substantially change between the two time periods as a result of the change in legislation, and MSA fixed effects. We find that the white voting tendency is unaffected by the number of black-targeted radio stations, while black participation rates increase in the number of stations. These results, consistent with our cross sectional findings, are not due to fixed unobserved heterogeneity.

Columns 3 and 4 show that black-targeted stations affect voting differently according to whether the stations are black-owned. Black-owned and targeted stations have a large effect on black voting (and a much smaller, albeit significant, positive impact on white voting), while white-owned black-targeted stations have no significant impact on black or white voting. This finding suggests that ownership has a consequential effect on content, even within stations that are targeted at black audiences.

The results in tables 8 and 9 provide reasonable support for the view that electoral acceleration is at least in part due to the structure of media markets. As the size of a group increases, members of this group can enjoy a larger number of media products that are specifically tailored to their tastes. The existence of these channels of communication make it easier for candidates to target campaign efforts at the group, thereby lowering the costs of learning about the candidates' positions and thus increasing the likelihood of participation.

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Data on minority ownership of radio stations are taken from <http://www.ntia.doc.gov/reports/97minority/list.htm>.

## VII. Concluding Discussion

Theories of democratic decision-making have long recognized that policy outcomes depend on the spatial distribution of citizen preferences. In the standard median voter model, for example, “moving” types from one jurisdiction to the next affects policy by changing the identity of the median citizen. The novel empirical result of this study is that the *tendency to participate in elections* also depends on the distribution of types. This finding has interesting implications for a number of questions that are of interest to economists and policy-makers. We discuss four of these: the consequences of electoral acceleration for redistricting, racial heterogeneity and social capital, the provision of local public goods, and the reasons why citizens vote.

### A. Majority-minority Districts

A major point of our paper is that there is a systematic bias between the median voter and the median citizen toward the group whose participation is augmented by its larger share. But how large is this deviation? Our estimates allow us to calculate this. If  $\Phi^W(p)$  and  $\Phi^B(p)$  are linear probability estimates mapping a county’s black population share  $p$  to the white and black participation probabilities, respectively, then the black share of voters is  $p^V = p\Phi^B(p) / [p\Phi^B(p) + (1-p)\Phi^W(p)]$ . We calculated  $p^V$  using our cross sectional specification (3) with county-level data for 1994. When  $p$  is 0, so is  $p^V$ . At the median black population share (1.7%), the black share of voters is 30% below the black share of population ( $\chi^2 = 45.36$ ). At the 75<sup>th</sup> percentile, the difference is 21%

( $\chi^2 = 10.84$ ). It is only at the 95<sup>th</sup> percentile of the black population share (41%) that we cannot reject the hypothesis that the black population share is equal to the share of black voters. As demonstrated earlier, these differences tend to be smaller in years with presidential elections. Using the same specification (3) with county-level data for the presidential year 1996, we only find significant differences up to the 90<sup>th</sup> percentile of the black population share, where the gap amounts to 3% ( $\chi^2 = 6.14$ ).

Electoral acceleration has interesting implications for redistricting. The mechanism suggests that black turnout will increase if political jurisdictions coincide with media markets. If black viewers who live in the same media market belong to different jurisdictions, any news about local races are of interest to only a small fraction of the black audience. Thus, broadcasting minority-targeted programs may not be attractive commercially. But if political jurisdictions coincided with media markets, candidates would find it less expensive to reach black citizens. Our results on the effects of black owners of minority-targeted stations indicate that patterns of ownership influence political participation. Increases in the number of black-targeted, black-owned station result in higher turnout rates, both among the minority and among whites.

### *B. Race and Social Capital*

Several measures of social capital such as the tendency to belong to associations and the level of trustworthiness in groups are negatively correlated with racial heterogeneity (Alesina and La Ferrara, 2000; Glaeser et al., 2000). For counties with fewer than 50% blacks, increases in black population shares are synonymous with more significant racial fragmentation. Electoral acceleration is preserved, and sometimes even

strengthened, if we re-estimate the models in section V excluding counties with black population shares in excess of 50%. This indicates that participation in democratic decision-making, which is often seen as one important component of social capital, differs in important respects from other indicators. While other forms of civic engagement appear to decrease in all groups as racial fragmentation increases, declining participation rates among whites in more heavily black communities are counterbalanced by higher turnout among black citizens.

### *C. Provision of Local Public Goods*

Electoral acceleration also has general implications for the empirical study of public policy. In decentralized economies, the responsiveness of the political system to voter preferences is often measured by relating changes in population characteristics to policy changes. For instance, cross-sectional variation in median population income is used to identify the supply of local public goods (Bergstrom and Goodman, 1973). To the extent that electoral acceleration occurs among the groups of poor and rich citizens, our results indicate that studies of this sort tend to systematically *overestimate* these income elasticities. Electoral acceleration predicts that rising population incomes across jurisdictions or time go hand in hand with higher voting tendencies for the rich and lower tendencies for the poor. Consequently, the estimated income elasticities exaggerate the policy response to rising population incomes.

### *D. Black and White Participation Rates*

Our work addresses differences between black and white voting tendencies because whites and blacks belong to different groups: They have substantially different political preferences, and they tend to consume different media products. However, for our study, it is not necessary that race *causes* blacks and whites to belong to different groups. In contrast to the approach taken here, there is a substantial literature which assumes that race *determines* the likelihood of political participation (see the review in Bobo and Gilliam, 1990).<sup>11</sup> Several papers maintain that a strong sense of “ethnic community” and “black consciousness” influences turnout rates (Verba and Nie, 1972; Shingles, 1981). Studies using data from the 1950s and 1960s generally find that blacks are more likely to participate than whites when one controls for demographic differences. More recent analyses for the late 1980s indicate that such differences have disappeared (Bobo and Gilliam, 1990).

Electoral acceleration contributes to this literature by emphasizing that some of the differences in participation between blacks and whites may be interpreted as stemming from differences in the fraction of the population that is black. To our knowledge, this hypothesis has not been tested in previous studies. Rather than interpreting declining rates of participation among blacks as stemming from changing values and varying degrees of political empowerment, electoral acceleration suggests that changes over time in the tendency to vote may reflect changes in the geographic dispersion of a group. In fact, Cutler et al. (1999) document just such a change: Since

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<sup>11</sup> Some studies identify race-specific institutional differences such as voter literacy tests, poll taxes (Filer, Kenny and Morton, 1991), and political resources in general (Wolfinger and Rosenstone, 1980) as reasons why turnout rates may differ between races. Others emphasize racial differences in socioeconomic status (Olsen, 1970; Verba and Nie, 1972).

1970, segregation in the US has decreased considerably because blacks have moved into previously all-white areas. The theory outlined here predicts that blacks who have moved and the now less numerous minorities which are left behind are less likely to vote. This and similar implications of electoral acceleration are interesting avenues for future research.

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*Table 1: Voter Turnout by Group, 1994 and 1996*

	1994	1996	1998
<hr/>			
Non-Black			
% voting	53.7	64.2	51.5
N	80,956	71,149	70,481
Black			
% voting	45.8	61.0	49.4
N	8,635	7,160	7,072

Notes: 1) Source is 1994, 1996, and 1998 CPS, voting and registration modules;  
2) "Voting" is turnout in November 1994, 1996, and 1998 elections.

*Table 2: Percent in Each Group, across Counties and States*

<i>Counties</i>	percentiles							
	mean	5	10	25	50	75	90	95
Nonblack	91.4.5%	59.0%	69.9%	90.0%	98.3%	99.7%	99.9%	100.0%
Black	8.6%	0.0%	0.1%	0.3%	1.7%	9.9%	30.1%	41.0%

  

<i>States</i>	percentiles							
	mean	5	10	25	50	75	90	95
Nonblack	89.5%	69.9%	75.1%	85.4%	92.7%	97.6%	99.1%	99.2%
Black	10.5%	0.8%	0.9%	2.4%	7.2%	14.6%	24.9%	30.1%

Notes: Source, 1990 Census; unweighted averages across counties and states.

Table 3: Unconditional Differences in Policy Preferences between Blacks and Nonblacks:

”Are we spending too much, too little, or about the right amount on ...” --

	Space Program	Environment	Health	City Problems	Crime	Drugs	Education	Race Problems
<b>Black</b>								
Coefficient	0.716	-0.208	-0.369	-0.493	-0.175	-0.258	-0.461	-1.552
(Std. Error)	(0.025)*	(0.024)*	(0.025)*	(0.025)*	(0.025)*	(0.025)*	(0.025)*	(0.027)*
<b>Black-Nonblack</b>								
(prob in %)								
”too little”	-9.7	7.8	12.9	18.9	5.8	9.3	16.5	55.8
”about right”	-17.4	-4.7	-9.4	-8.7	-4.0	-6.0	-11.5	-32.3
	Defense	Foreign Aid	Welfare	Highways	Social Security	Mass Transportation	Parks	
<b>Black</b>								
Coefficient	0.210	-0.204	-0.838	0.158	-0.531	0.006	-0.350	
(Std. Error)	(0.022)*	(0.025)*	(0.022)*	(0.023)*	(0.026)*	(0.023)	(0.024)*	
<b>Black-Nonblack</b>								
(prob in %)								
”too little”	-5.8	2.3	27.7	-6.0	20.0	-0.2	13.2	
”about right”	-2.0	4.6	3.5	3.3	-15.0	0.1	-9.7	

\*significant at 1% level

Coefficients are given for an ordered probit model where the dependent variable takes on the following values: 1=”too little”, 2=”about right”, 3=”too much”; robust standard errors in parentheses

The row “Black (prob in %) “too little” presents the predicted difference in the probability between blacks and nonblacks that they would choose this category.

Table 4: Do Blacks Vote More as their Population Size/Share Increases? Results for States and Counties in 1994

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	White	Black	White	Black	White	Black	White	Black
State Black Pct.	-0.9444 (0.2766)**	0.7406 (0.4305)*						
County Black Pct.					-0.4314 (0.0947)**	0.8222 (0.2489)**		
State Black Pop. (mil.)			-0.1407 (0.0574)**	-0.0917 (0.0999)				
State White Pop. (mil.)			0.0182 (0.0045)**	0.0142 (0.0094)				
County Black Pop. (mil.)							-0.2202 (0.0869)**	0.5655 (0.2247)**
County White Pop. (mil.)							0.0568 (0.0127)**	-0.0355 (0.0460)
MSA dummy	-0.0559 (0.0299)*	0.1583 (0.0897)*	-0.0901 (0.0266)**	0.0980 (0.1177)	-0.0590 (0.0205)**	0.1617 (0.0849)*	-0.0992 (0.0195)**	-0.0001 (0.0668)
Constant	-0.7698 (0.1554)**	0.5042 (0.2149)**	-0.8505 (0.1580)**	0.8135 (0.2819)**	-0.5838 (0.0689)**	0.4282 (0.2105)*	-0.6134 (0.0688)**	0.6628 (0.2405)**
Observations	80956	8635	80956	8635	80952	8635	80952	8635

Robust standard errors in parentheses. \* significant at 5% level; \*\* significant at 1% level. All regressions include education dummies.

Table 5: Do Blacks Vote More, Relative to Whites, in More Heavily Black States?

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	1994	1994	1994	1996	1996	1996	1998	1998	1998
Black x State Black Pct.	0.9322 (0.3377)**		1.2962 (0.3190)**	0.2806 (0.2003)		0.2225 (0.1840)	1.1612 (0.1796)**		1.2417 (0.1865)**
Black x State Black Pop. (mil.)		0.0691 (0.0674)	-0.0571 (0.0866)		0.0974 (0.0609)	0.0763 (0.0633)		0.2005 (0.0873)*	0.0923 (0.0782)
Black x State White Pop. (mil.)		-0.0039 (0.0074)	0.0159 (0.0137)		-0.0066 (0.0041)	-0.0034 (0.0047)		-0.0162 (0.0062)**	0.0012 (0.0059)
MSA dummy	-0.0800 (0.0216)**	-0.0786 (0.0219)**	-0.0775 (0.0216)**	-0.0208 (0.0175)	-0.0199 (0.0175)	-0.0197 (0.0175)	-0.0936 (0.0301)**	-0.0924 (0.0303)**	-0.0912 (0.0302)**
Black	1.1634 (0.2284)**	1.7072 (0.2929)**	1.4777 (0.2942)**	0.9949 (0.3198)**	1.6174 (0.3407)**	1.5740 (0.3359)**	0.8769 (0.2112)**	1.0365 (0.2405)**	0.7589 (0.2182)**
Black x MSA Dummy	0.1261 (0.0767)*	0.0842 (0.0892)	0.0946 (0.0769)	0.2019 (0.0629)**	0.1867 (0.0624)**	0.1894 (0.0631)**	0.2103 (0.0633)**	0.1649 (0.0749)*	0.1787 (0.0656)**
Observations	89591	89591	89591	78309	78309	78309	77553	77553	77553

Probit models with robust standard errors in parentheses. Dependent variable is whether the individual voted. “Black” is an indicator for whether the individual is black \* significant at 5% level; \*\* significant at 1% level. All regressions include state fixed effects, race-specific education dummies, and a race-specific MSA dummy.

Table 6: Do Statewide Races Change the Effect of County and State Black Shares on Turnout?

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	white	black	white	black	white	black	white	black
Statewide Race	0.0582 (0.0108)**	0.0697 (0.0337)*	0.0471 (0.0136)**	-0.0150 (0.0459)	0.0550 (0.0164)**	0.0476 (0.0744)	0.0517 (0.0086)**	0.0190 (0.0220)
Statewide Race x County Black Share	-0.0491 (0.0599)	-0.3857 (0.1338)**	-0.1002 (0.0709)	-0.6021 (0.1556)**	-0.2157 (0.1505)	-0.9788 (0.3857)*		
Statewide Race x State Black Share			0.1390 (0.1033)	0.8210 (0.3016)**	0.0632 (0.1351)	0.3787 (0.5125)		
Statewide Race x State Black Share x County Black Share					0.8131 (0.9353)	2.3283 (2.1811)		
Statewide Race x (County – State) Black Share							-0.1057 (0.0698)	-0.6028 (0.1556)**
1998 Dummy	-0.0087 (0.0072)	0.0100 (0.0161)	-0.0099 (0.0073)	0.0000 (0.0165)	-0.0109 (0.0074)	-0.0013 (0.0165)	-0.0094 (0.0072)	0.0030 (0.0161)
Observations	107001	12016	107001	12016	107001	12016	107001	12016
Number of Counties	1234	595	1234	595	1234	595	1234	595

Dependent variable is whether the individual voted in the November election. Data for non-presidential-election years (1994 and 1998) are included. Standard errors in parentheses. Linear probability models with county fixed effects. All regressions include individual education dummies as controls. \* significant at 5% level; \*\* significant at 1% level.

Table 7: Does the Presidential Election Change the Tendency to Vote More in Heavily Black States?

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	white	black	white	black	white	black	white	black
Presidential ('96) Dummy x State Black Pct.	0.2176 (0.0270)**	-0.2099 (0.0487)**	0.2177 (0.0271)**	-0.2196 (0.0491)**	0.1966 (0.0286)**	-0.2086 (0.0487)**	0.1751 (0.0311)**	-0.2247 (0.0495)**
Statewide Race	0.0229 (0.0030)**	0.0525 (0.0096)**	0.0111 (0.0038)**	0.0577 (0.0128)**	0.0131 (0.0053)*	0.0694 (0.0205)**	-0.0073 (0.0076)	0.0366 (0.0299)
Statewide Race x State Black Pct.					0.0927 (0.0408)*	-0.1012 (0.1080)	0.1885 (0.0677)**	0.1454 (0.1862)
'96 Dummy	0.0847 (0.0041)**	0.2150 (0.0140)**	0.0955 (0.0034)**	0.1719 (0.0118)**	0.0842 (0.0041)**	0.2183 (0.0145)**	0.0994 (0.0037)**	0.1705 (0.0119)**
'98 Dummy	-0.0213 (0.0045)**	0.0884 (0.0152)**			-0.0262 (0.0050)**	0.0927 (0.0159)**		
Time x State Black Pct.	-0.0004 (0.0155)	-0.0986 (0.0290)**			0.0185 (0.0176)	-0.1066 (0.0302)**		
State-specific time trend	no	no	yes	yes	no	no	yes	yes
Observations	222586	22867	222586	22867	222586	22867	222586	22867
Number of state codes	51	51	51	51	51	51	51	51

Linear probability models. Dependent variable is whether the individual voted in the November election. Data for 1994, 1996, and 1998 are included. All models include individual education dummies. Standard errors in parentheses. \* significant at 5% level; \*\* significant at 1% level

Table 8: Do Black Media Induce Blacks to Vote (1998)?

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	White	Black	MSA FE	White	Black	MSA FE	White	Black	MSA FE
# Black Weeklies	0.0003 (0.0010)	0.0092 (0.0028)**							
Black Dummy			0.5189 (0.1047)**			0.2521 (0.1030)**			0.2518 (0.1067)**
Black Dummy x # Black Weeklies			0.0077 (0.0034)*						
# Black Radio Stations				-0.0066 (0.0037)	0.0259 (0.0064)**				
# Black-Owned & Targeted Radio Stations							-0.0037 (0.0069)	0.0284 (0.0093)**	
# White-Owned Black-Targeted Radio Stations							-0.0080 (0.0044)	0.0246 (0.0097)**	
Black Dummy x # Black Radio Stations						0.0324 (0.0067)**			
Black x # Black Owned & Targeted Radio Stations									0.0314 (0.0104)**
Black x # White-Owned, Black-Targeted Radio Stations									0.0329 (0.0099)**
Constant	0.3121 (0.0306)**	0.6960 (0.0989)**	0.3061 (0.0305)**	0.3522 (0.0335)**	0.5981 (0.0998)**	0.0388 (0.0412)	0.3515 (0.0337)**	0.5989 (0.0994)**	0.0352 (0.0621)
Observations	46420	5751	52171	39460	5133	44593	39460	5133	44593
R-squared	0.06	0.06	0.08	0.06	0.06	0.08	0.06	0.06	0.08

Dependent variable is whether the individual voted in the 1998 general election. \* significant at 5% level; \*\* significant at 1% level. All columns are linear probability models. All specifications include education dummies. Specifications pooling black and white data, in columns (3), (6) and (9), include race-specific education dummies.

*Table 9: Does the Black Voting Tendency Change with Changes in the Number of Black- and White-Owned Black-Targeted Radio Stations?*

	White	Black	White	Black
	(1)	(2)	(3)	(4)
1998 Dummy	-0.0361 (0.0034)**	0.0185 (0.0093)*	-0.0322 (0.0035)**	0.0343 (0.0104)**
# Black-Targeted Stations	0.0038 (0.0020)	0.0166 (0.0053)**		
# Black-Owned & Targeted Radio Stations			0.0097 (0.0026)**	0.0338 (0.0074)**
# White-Owned Black-Targeted Radio Stations			-0.0031 (0.0028)	0.0044 (0.0064)
Education Dummies?	yes	yes	yes	yes
Fixed Effects	MSA	MSA	MSA	MSA
N	82,534	11,165	82,534	11,165

Dependent variable is whether the individual voted in the 1994 or 1998 general election.

\* significant at 5% level; \*\* significant at 1% level.