

Economic Crisis, Iraq, and Race: A Study of the 2008 Presidential Election

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Abstract

Democratic presidential candidate Barack Obama was the beneficiary of a nationwide swing in November, 2008: he outperformed 2004 Democratic presidential nominee John Kerry across nearly the entire country. Nonetheless, there was substantial local variation in the degree to which support for Obama exceeded the support given to Kerry four years earlier. With this in mind we show that county-level variation in (1) economic conditions, (2) the human cost of the wars in Afghanistan and Iraq, and (3) sizes of African-American and Latino populations together account for a major share of the variation in the 2008 pro-Obama swing. Our estimates suggest that the downturn in the housing and mortgage markets and the wars in Afghanistan and Iraq greatly advantaged Obama, increasing his national vote share by at least 5.8 percentage points. We also find that, within Southern states but not elsewhere in the country, the degree to which Obama outperformed Kerry across individual counties was strongly increasing in the size of African-American populations.

The 2008 presidential election took place in the shadow of a national economic crisis characterized by the bursting of a housing bubble, a sharp decline in financial markets, and growing unemployment. In addition, by late 2008 many Americans looked upon the ongoing and large-scale military deployments in Afghanistan and Iraq with increasing skepticism. Beyond these weighty domestic and foreign matters, the 2008 presidential contest was historic: the Democratic nominee in the race offered Americans an opportunity to vote for the first African-American candidate with a meaningful chance to win the presidency.¹ And, finally, an additional backdrop to the 2008

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¹There have been other African-American candidates for president, e.g., Lenora Fulani, and a number of African-Americans have run in presidential primaries, e.g., Jesse Jackson. The 2008 presidential race, though, was the first such contest to feature an African-American candidate with a serious chance to win the presidency.

presidential contest, one presumably not unrelated to the nation's economic troubles and to public perceptions of the Iraq War, was the striking unpopularity of the then sitting president, George W. Bush. Bush's job approval rating as of late October, 2008 hovered around 25%. By the final quarter of 2008 Bush was competing with former presidents Richard Nixon and Harry Truman for all-around worst approval rating for a quarter.²

Putting aside for the moment the question of whether Barack Obama's race advantaged or disadvantaged his candidacy as the Democratic nominee in 2008, the aforementioned twin crises in conjunction with a much-maligned incumbent Republican president could easily account for a national, pro-Democratic swing in 2008. Obama received slightly under 53% of the popular vote for president and almost 68% of the Electoral College in 2008. In contrast, George W. Bush won 50.6% of the popular vote and 53.2% of the Electoral College when he beat Democrat John Kerry in the 2004 presidential contest. The final outcome of the 2008 presidential race was not close compared to the 2004 contest and certainly not compared to the infamous 2000 election.³

National swing notwithstanding, we offer an analysis that transcends the overarching pro-Obama movement that captured much of the country in late 2008. In particular, the research described here addresses how Obama succeeded in places where the previous Democratic presidential nominee, John Kerry, did not. Our research incorporates both state- and county-level components, and this allows us to internalize the idea that, by November, 2008, not all localities in the United States had suffered equally from, for example, housing price drops and the foreclosure crisis. Even with respect to the Iraq War, a phenomenon that one might think of as inherently national in scope, not all states and counties in the United States had the same exposure to combat casualties. These issues have decidedly *local* aspects, and there is a small albeit growing tradition in post-election political analysis of exploring the effects of local conditions on vote choices.

We build on that tradition here with a county-level statistical study of the 2008 presidential race,

²See "Bush Approval Rating Doldrums Continue," report published by Gallup on October 20, 2008, available at <http://www.gallup.com/poll/111280/Bush-Approval-Rating-Doldrums-Continue.aspx> (last accessed March 11, 2009).

³Popular vote figures are based on data downloaded from David Leip's Atlas of U.S. Presidential Elections. See <http://www.uselectionatlas.org/> (last accessed April 22, 2009).

one that focuses on the correlates of Obama vote share. We model variation across United States counties using three sets of variables: those pertaining to county economic conditions, those that proxy for county exposure to the Afghanistan and Iraq Wars, and, finally, variables that measure county-level racial demographics. With these variables and our statistical models we construct alternative scenarios, also known as counterfactuals, that allow us to estimate the degree to which the factors we study affected voting in particular counties, states, and in the nation as a whole.

We ask, for example, how might presidential voting in Florida, a notable battleground state in 2008, have been different if the particularly acute housing downturn that Floridians experienced in the period surrounding the 2008 presidential race had not existed? This question involves a counterfactual because it poses a scenario (no Florida housing crisis as of November, 2008) that in fact did not occur and then considers how this hypothetical scenario would have affected the 2008 presidential election. Counterfactual explorations allow us to better understand the degree to which various factor may have affected the 2008 Presidential election.

In constructing counterfactuals about the 2008 contest, we make the decidedly conservative assumption that the totality of the impact of the economy and war on vote choices was local. That is, when we counterfactually reduce the level of, say, mortgage delinquency in all of Florida's counties (i.e., when we assume, contrary to fact, that mortgage delinquency rates among Florida's counties as of late 2008 were relatively low), we assume that such a statewide reduction in the mortgage crisis would not have independently led additional voters to shift their support from Obama to his Republican opponent, John McCain. If in fact part of the national (or, e.g., Florida-wide) swing to Obama was due to a national (or Florida-wide) sense of a housing crisis, our local measures of housing market vulnerability understate the true total effect of the housing market on the 2008 presidential election outcome.

Similarly, when we counterfactually manipulate a state's level of Afghanistan and Iraq war casualties (i.e., when we assume, for example, that a given state had zero such casualties when it in fact had many more than zero), we do not consider any effect that such changes in one state or county might have had on the decisions of voters' residing in other counties or states. We thus

consider our counterfactual estimates based on various scenarios of interest to be lower bound estimates because we believe it reasonable to assume that the national-level effects of the factors we study (e.g., Afghanistan and Iraq casualties) move in the same directions as the state and local-level effects that we identify. That is, to the extent that voters conditioned their votes on national-or state-level manifestations of the economic downturn and war, those effects could be expected to reinforce the local-level effects that we identify in our analysis.⁴

With respect to the effect that Obama's race had on his support nationwide, our analysis can provide little guidance. While there is local variation in economic conditions and the impact of the Iraq and Afghanistan Wars, there was, of course, no county-level variation in the personal attributes of candidates for president in 2008—Obama was African-American everywhere he campaigned and John McCain was everywhere white. Thus, in considering the effect of race on the 2008 election, we can at best only infer how the availability of an African-American candidate on the ballot may have differentially affected counties as a function of their demographic composition or geographic location.⁵

Our analysis yields three central findings. First, we find that rising unemployment and mortgage delinquency reduced McCain's vote share across the United States. Our conservative (local effect only, as noted above) estimates suggest that unemployment and mortgage delinquency increased Obama share by 0.1 and 0.2 percentage points, respectively, over what it would have been under the more normal financial conditions that obtained prior to the crisis of 2007-2008.⁶ Second, contextual effects of the Afghanistan and Iraq wars benefited Obama. We estimate that increasing the Army enlistment rate in each county by 10 percent is associated with an increase in Obama

⁴To illustrate this point consider the following. Suppose that Iraq and Afghanistan war casualties led to more votes for Obama (we provide evidence of this shortly). When we hypothetically reduce war casualties in Iowa then this will push up McCain's vote share in this Midwest state. One would imagine that a reduction in Iowa war casualties might similarly affect McCain support in Minnesota, a bordering state for Iowa. Our models do not capture cross-state effects that operate in such a manner.

⁵Such conclusions turn on the notion that, net of other factors controlled for in our study, the only reason that more or less racially diverse communities would have supported Obama in 2008 compared to Kerry in 2004 is that Kerry is white while Obama is not.

⁶Estimated effects are calculated under the alternative that November, 2008 unemployment rates were the same as corresponding rates from January, 2005 and that mortgage delinquency rates in November, 2008 were equivalent to rates from the first quarter of 2007, our earliest available county-level measures.

national share of 0.1 points; and, we find that a hypothetical 2008 presidential election held in a nation with zero Afghanistan and Iraq war fatalities would have decreased Obama national share by 5.2 points (recall that Obama's observed national vote share was slightly less than 53%).

Third, we find that increases in support for Obama over support for Kerry were greater in counties with larger Latino populations and, interestingly, in Southern state counties with large African-American populations. This result obtains despite the fact that many Southern states remained uncompetitive for the Democratic nominee in 2008 and several even swung toward the Republican McCain relative to 2004. We estimate that, among Southern counties, each additional percent of a county's residents who were black increased Obama share by 0.17 points; and we estimate that, among all counties, each additional percent of county residents who were Hispanic raised Obama vote share by 0.18 points. *Ceteris paribus*, the size of a county's black population did not affect Obama vote share in non-Southern counties.

We now review existing literature on voting in presidential (and other) elections. Next, we use a variety of plots to describe several notable features of the ways in which Obama vote share varied by county across the United States. We then build on our plots with a regression analysis of county vote share, and our regressions allow us to pose counterfactuals, e.g., what might have happened in November, 2008 had there not been an economic crisis. Finally, we offer a brief conclusion.

National Trends, Local Factors, and Election Results

Perhaps the most commonly considered explanation of national electoral tides is the state of the economy. As early as the 1940s political scientists were studying the connection between the health of the economy in the aggregate and election outcomes (for a review of this early research see Kramer 1971). While early studies presented mixed evidence of the effects of national-level economic variables on aggregate presidential vote shares, national economic indicators have become staples of contemporary presidential election forecasting models (e.g., Fair 1978, Rosenstone 1983, Bartels & Zaller 2001, Erikson & Wlezien 2008). Not only do voters

appear to evaluate incumbent parties on the basis of their handling the economy, but there is evidence that incumbents in government attempt to manipulate the economy prior to elections to improve their reelection prospects (e.g., Nordhaus 1975, Hibbs 1977, Tufte 1978, Hibbs 1987, Alesina & Rosenthal 1989).

While much of the work related to the effect of the economy on elections has focused on national economic outcomes and national vote shares, other studies have attempted to disaggregate these effects to the state, local, or individual levels. Fiorina (1981) finds that voters appear to vote sometimes based on their idiosyncratic perceptions of the state of the economy and other times not. In contrast, Duch, Palmer, & Anderson (2000) and Cho & Gimpel (2009) argue that local conditions affect perceptions of the economy and vote choices, respectively.

There is some evidence that state-level economic conditions predict variation in incumbent party vote for president across states (e.g., Abrams 1980, Holbrook 1991, Campbell 1992, Abrams & Butkiewicz 1995). Ebeid & Rodden (2006) show that the degree to which state-level economic variables condition incumbent party support in gubernatorial elections may depend on the extent to which state economic outcomes are attributable to state government policies.⁷ They find that in states whose economies are dominated by farming or natural resource extraction, where economic conditions are arguable largely determined by national forces, state macroeconomic indicators are less predictive of gubernatorial vote shares. This finding suggests that voters may consider not only the current state of the economy but also a governor's, or presumably a president's, role in creating those conditions.⁸ The fact that some economic outcomes—particularly at the state or local level—may be more easily attributed to federal government action or inaction than others may explain in part why the effects of state-level variation in economic outcomes on electoral outcomes are evident in some cases but not in others.

Fewer scholars have focused on the effects of local (e.g., county-level) economic conditions on vote choices. For example, Gosnell & Coleman (1940) show that changes in economic condition

⁷A similar argument has been made regarding presidential responsibility for economic outcomes. See Rudolph & Grant (2002) for an example.

⁸Achen & Bartels (2004) demonstrate, though, that governors are sometimes held accountable for natural events clearly beyond their control.

in Pennsylvania counties were correlated with changes in support for Roosevelt between the 1932 and 1936 elections. And, Mitchell & Willett (2006) show that county-level economic variables predict incumbent party gubernatorial vote in Georgia. Looking across the entire United States, Kim, Elliot, & Wang (2003) find that variation in county-level economic conditions are significant predictors of presidential vote in 1996, but not in the other presidential elections held between 1988 and 2000. Following the logic of Ebeid & Rodden (2006), the inconsistency of these results may reflect variation in the degree to which current local economic conditions can be taken as evidence of presidential competence.

In the 2008 presidential election, there exist two conditions that may be necessary to observe retrospective evaluations of local economic circumstances conditioning presidential voting. First, the housing crisis that began in the later Bush Administration years was widely and popularly attributed to problems within credit and financial institutions. Because regulation and oversight of the nation's credit and financial institutions is under the purview of the federal government, there is a clear connection that could be made between the housing crisis and national governance. Of course, to what extent government policies created or exacerbated the housing or credit crises is beyond the scope of this study; this subject will presumably be debated for years. For our purposes, though, it is sufficient that the federal government is responsible for regulating credit markets and that failures in those markets were widely seen as precipitating the collapse of housing and mortgage markets. That is, voters could be expected to hold the incumbent party of the president responsible for the housing crisis.

Second, while the root problems that precipitated the housing crisis were national in scope, the impact of the crisis was not uniform across the country. Some counties felt its effects earlier and more strongly than others. Thus, while the crisis was reported nationally, its palpable impact was revealed to much greater degree in some areas of the country than it was in others. It is this local variation in the extent of crisis allows us to estimate the effect of the economic conditions at the local level.

In the analysis that follows we pay particular attention to the effect of the mortgage and housing

crisis, but we also consider more standard measures of economic outcomes such as unemployment and income. We also consider the possibility that the effect of the housing crisis was greater in some contexts than in others. In particular, we hypothesize that wealthier communities will respond more strongly to housing market distress than will poorer communities.

Beyond local economic trends, we also focus, as will be seen shortly, on local variation in other salient variables. Many national phenomena have local components (e.g., there is variation across the country in the locations of Afghanistan and Iraq war casualties), and these local phenomena can be just as important as local economic factors.

Overview of the Obama Victory

Obama's victory in 2008 was the culmination of a months-long campaign between two sitting United States Senators, Obama from Illinois and McCain of Arizona. The 2008 presidential campaign had no incumbent, and furthermore the then-Vice President, Richard Cheney, a Republican former United States Representative from Wyoming, was not a candidate for office. Thus, for only the second time since 1928 the presidential campaign did not involve a candidate that could be directly tied to the incumbent administration.⁹ Because John McCain was not in the Bush Administration and had on some issues been an outspoken opponent of Bush Administration policies—for example, he opposed drilling in the Arctic National Wildlife Refuge and publicly spoke out against some of the methods by which so-called enemy combatants were interrogated—one might suppose that retrospective evaluations of the Bush administration would not play a major role in the determination of 2008 Presidential election either locally or nationally. On other issues, though, McCain's positions were close to those espoused by the Bush Administration, e.g., support of tax cuts and support of the Iraq War, albeit not necessarily of the way it was implemented.¹⁰

⁹In 1952 Republican Dwight D. Eisenhower ran and won easily against Democrat Adlai Stevenson. The sitting president at the time, Harry S. Truman, a Democrat, had chosen not to run for re-election.

¹⁰For a discussion of contrasts and similarities between the Bush Administration and McCain see, "How Close McCain Is to Bush Depends on the Issue," *New York Times*, June 17, 2008, downloaded from <http://www.nytimes.com/2008/06/17/us/politics/17policy.html> (last accessed May 6, 2009).

Either in spite of McCain’s dissimilarities with Bush or on account of the similarities, Obama was the recipient of a national swing in his favor. We define swing as the advantage that Obama had in two-party vote share compared to the two-party vote share for John Kerry, the 2004 Democratic presidential candidate.¹¹ Whether the cause of this shift was dissatisfaction with Bush or simply that Obama was a superior candidate to Kerry (or McCain an inferior candidate to Bush), most counties in the United States swung toward Obama despite many differences in local conditions. To get a sense of the strength of the national pro-Obama swing, consider Figure 1, a scatter plot of counties in the continental United States. Each point in the figure represents a particular county’s Obama (2008) two-party vote share on the vertical axis and Kerry (2004) two-party vote share on the horizontal axis; two-letter postal abbreviations represent states in which counties reside. The dashed line in Figure 1 is a 45 degree line. Accordingly, a county that lies right on the line had identical Obama and Kerry two-party vote shares; a county above it had Obama vote share greater than Kerry share; and, a county below it had greater Kerry share than Obama share.¹²

*** Figure 1 about here ***

Note that the large cloud of counties in Figure 1 lies *above* the dashed 45 degree line; in our set of counties, 2,406 swung toward Obama from 2004 while only 685 swung toward McCain. Thus, there was a broad-based national swing in favor of Obama at the county level as well as at the national level.

National patterns notwithstanding, we also see substantial variation across the country in the extent of the pro-Obama swing. Consider, for example, the continental United States map in Figure 2 wherein shading in the map is proportional to Obama share minus Kerry share. While almost the entire map is relatively light in grayscale (indicating an increase in Democratic candidate vote share between 2004 and 2008), Arizona stands out—perhaps not surprisingly given that this is John McCain’s home state—as does a band of counties in the upper South. Note that we do *not* observe

¹¹In other words, the Obama swing is the Obama share of the two party vote in 2008 (by county, Obama vote total divided by Obama plus McCain vote totals) minus Kerry share of the two party vote in 2004.

¹²The various analyses presented here cover the 48 continental states. We focus on this group because Alaska organizes its elections by state house district and this makes matching Alaska results to county data difficult. Alaska is actually organized by boroughs rather than counties. We drop Hawaii in addition to Alaska to limit our analysis to the continental United States, and drop the District of Columbia as an outlier.

scatterings of dark McCain swing across the map in Figure 2. Rather, darker counties appear relatively concentrated in specific locations. That is, the 2008 pro-Obama swing was virtually national in scope and departures from this swing appear to be systematic rather than uniformly distributed across the continental United States.

*** Figure 2 about here ***

Additional evidence of systematic variation in the Obama swing can be found in Figure 3, which displays 45 degree line plots akin to Figure 1 but with a separate plot for each of the four Census regions of the country—Midwest, Northeast, South, and West.¹³ The point size for each county is proportional to the number of votes cast in the county with larger points indicating counties with greater voting populations. Figure 3 shows that the vast majority of counties swinging towards McCain, those below the 45 degree line, are from Southern states: in each plot but the bottom right, almost every point falls above the 45 degree line. This was apparent from the map in Figure 2, but what is new here is the fact that we can now tell that the counties with lower Obama vote share compared to Kerry share were in general relatively small. This is consistent with the idea that anti-black racism in lightly populated Southern counties may have played a minor albeit a notable role in the 2008 presidential election.¹⁴

*** Figure 3 about here ***

Moreover, it is quite evident from Figure 3 that, the larger a county, the more likely it is to be located above the 45 degree line and also above the point at which Obama won 50% of the county's vote share. Indeed, of the 3,091 counties in our analysis, Obama won only 853. Nonetheless he won 27 of 48 continental states, more than 53 percent of all votes, and, of course, the presidency, by winning more often and by bigger margins in the larger counties.

More evidence of systematic variation across counties is apparent in Figure 4. This figure is similar to Figures 1 and 3. Again, we have displayed county-level Obama vote share versus Kerry vote share with a 45 degree line. Counties with black populations more than 25 percent are

¹³See http://www.census.gov/geo/www/us_regdiv.pdf (last accessed on April 9, 2009).

¹⁴We use the term “consistent with” as opposed to, say, “indicative of” because we cannot be sure why some counties in the upper South seemed to be relatively anti-Obama. Racism is one explanation as are policy differences that have nothing to do with race.

represented by solid triangles, with all other counties are represented by gray open circles. The pattern in Figure 4 is not particularly surprising given the historic nature of the 2008 presidential race: the counties with high proportion African-American are more likely to have had a pro-Obama swing.

*** Figure 4 about here ***

Nonetheless, Figure 4 suggests that the earlier comment about lightly populated counties and their anti-Obama nature is somewhat specific to the South. Notice in Figure 4 that there are many counties in the United States that contain very few black residents, i.e., are shaded light gray in the figure. Some of these counties had a pro-Obama swing (they lie above the 45-degree line) and others had a McCain swing (they lie below). When we juxtapose this with Figure 3 we can infer that there is an interaction between a county's region, in particular South versus non-South, and whether a low black percentage was associated with relative anti-Obama sentiment. Namely, the figure suggests that lightly populated, low black percentage locales were disproportionately anti-Obama in the South but not necessarily elsewhere.

Obama Vote Share across Counties

As shown above, there was substantial variation and nuance to the county-level, pro-Obama swing. In this section, we explore local variation in Obama support in greater detail by modeling county-level vote share using regression analysis. Our regression models focus on economic conditions, Iraq, and race. As we noted in the introduction, economic and Iraq-related themes were especially prominent in the 2008 presidential campaign, as was the issue of race, and this guides our selection of the covariates we use to explain Obama vote share by county.

Key Variables in the 2008 Presidential Election

We begin with a set of county-level economic variables. These variables are intended to proxy for local housing issues, unemployment rates, investment returns due to the stock market declines, and

more long-standing wealth in the county. In particular, we consider: the *Mortgage Delinquency Rate*, which measures the fraction of mortgages in a county that were 90 days or more delinquent on payments as of the Fourth Quarter of 2008;¹⁵ *Log Wages per capita*, which measures the log of wages per capita in a county 2006; *Log Dividends per capita* (also measured in 2006) to proxy for the presence of a investor class in a county;¹⁶ and the *Unemployment Rate* as of September, 2008.¹⁷ Our use of wage and unemployment data are standard within the literature on presidential election voting. We also measure the effect of changes in mortgage delinquency rates and changes in unemployment rates insofar as some counties may be accustomed to higher and lower levels of each and changes may stimulate a voting response against or for an incumbent party. Beyond unemployment and mortgage delinquency we draw on dividends per capita because this variable is presumably correlated with the extent to which a county is exposed to financial markets. Given that stock market declines were prominent in late 2008, voters in counties more exposed to investment losses may have been more likely to turn against the incumbent administration, *ceteris paribus*.

We also consider the potential for heterogeneity in the response of voters to economic conditions. Specifically, we suspect that the decline in housing prices around the 2008 presidential election was more likely to turn more wealthy voters against the incumbent Republican party compared to less wealthy voters who may be more accustomed to economic uncertainty. Toward that end, we consider the county-level interaction of wages per capita and the mortgage delinquency rate. The extent of local variation in the interaction of mortgage trouble and wage wealth in late 2008 is captured in Figure 5. We shade each county by the product of the county-level mortgage delinquency rate and the natural logarithm of wages per capita.

*** Figure 5 about here ***

The notable, darkly-shaded counties in the map are those with both high wages and high mort-

¹⁵Source for mortgage delinquency rate is the Federal Reserve Bank of New York. Data was gathered from <http://data.newyorkfed.org/creditconditionsmap> (last accessed April 13, 2009). Delinquency measurements are available beginning First Quarter, 2007.

¹⁶Source for county-level wage and dividend data is the Internal Revenue Service, with 2006 the latest available. See <http://www.irs.gov/taxstats/indtaxstats/article/0,,id=96809,00.html> (last accessed April 10, 2009).

¹⁷Source for unemployment data is the Bureau of Labor Statistics (BLS). The BLS reports unemployment percentages, but we use rates in what follows for consistency with other measures.

gage delinquency rates: they are spread all over the continental United States but not with uniformity. Around 50% of Florida (by area) is dark, major parts of southern California (Los Angeles, Orange, and San Diego Counties), Phoenix, and notably, much of northern Virginia and Indiana also suffered from high mortgage delinquency with higher wages. Indiana especially is interesting; note back in Figure 2 that Obama's win in Indiana was not limited to the counties in the northwest near Chicago. Obama out-pollled Kerry in every county of the state, and by more than 10 points in 58 out of 92 counties (63 percent). While this might reflect solely a campaign effect, we also note the countywide in Indiana pattern is consistent with the high interaction of mortgage distress and wages across the state apparent from Figure 5. Thus, Obama's victory in Indiana may be due to a housing crisis in Indiana falling on citizens unaccustomed to economic distress.¹⁸

Our Afghanistan and Iraq war variables consist of markers for the exposure that a county had to these conflicts as of November, 2008. We measure exposure with *Army Recruits per 1000*, which is the total number of Army recruits per 1,000 residents from each county between 2004 and 2008,¹⁹ and *Iraq/Afghanistan Fatalities per 1000 residents*.²⁰ Given the growing unpopularity of the foreign entanglement in Iraq as of November, 2008, we suspect that counties with more soldiers per capita would swing more towards the candidate, Obama, who more forcefully laid out a vision to bring the troops home.

Because Obama was the first African-American candidate to contest seriously a presidential election, there does not yet exist much literature analyzing the role of race on the vote shares of minority presidential candidates. Mas & Moretti (2008) use aggregated attitudes about inter-racial

¹⁸We note, of course, that it would be an ecological fallacy to assume that the same individuals in the dark-shaded counties in Figure 5 were responsible for both the high wages in the said counties and the accompanying foreclosures. Nonetheless, we think it reasonable that, even if the more wealthy did not suffer personal mortgage foreclosure or delinquency, the condition of the local housing market was relevant to their evaluation of the incumbent administration's economic policies.

¹⁹Source for Army recruitment data is the National Priorities Project at <http://www.nationalpriorities.org/nppdatabase/nppdatabase.php> (last accessed March 11, 2009).

²⁰Data on Afghanistan and Iraq fatalities was gathered from the Faces of the Fallen database maintained by *The Washington Post*. See <http://projects.washingtonpost.com/fallen/> (last accessed February 27, 2009). From this database we calculate the number of Iraq (Operation Iraqi Freedom) and Afghanistan (Operation Enduring Freedom) deaths for each county from November 3, 2004 through November 4, 2008. Faces of the Fallen provides soldier home towns, and from these we infer counties using <http://www.convertunits.com/>. We treat home towns as a soldier's location as opposed to the base or other unit to which he or she was assigned.

marriage gleaned from the General Social Survey to argue that racial attitudes were not major determinants of vote choices in the 2008 presidential election. Nonetheless, Tesler & Sears (2009) use survey responses to a set of questions that measure racial animus to predict votes in the 2008 presidential election as well as votes in past elections. They find that voting patterns in the 2008 Democratic primaries and general election were more strongly predicted by attitudes about race than is the case for other recent presidential election.²¹ Ultimately, however, the ability of any design to capture the causal effect of Obama's race on Obama's vote is questionable (see Jackman & Vavreck 2009) Here, we consider the effect of race at the county level. We use *Proportion Black* and *Proportion Hispanic* based on recent county-level estimates from the Bureau of the Census.²² Given the pattern we identified in Figure 4, we also interact the proportion population black in each county by a indicator variable measuring if the county resides in a state in the Southern Census Region.

In many states, large African-American populations reside in urban areas that, traditionally, are also heavily Democratic. So as not to attribute an effect of urban Democrats to proportion black, we include in our regression models a measure of county density, *Log Population Density*.²³ We saw evidence earlier (see Figure 3) that county size was related to Obama vote share, and we suspect that this is actually a city effect and therefore more accurately measured by population density.

Note also that our models control for Kerry 2004 vote share. By doing this we implicitly control for long-standing urban county support for Democratic candidates as well as for otherwise unmodeled county-level variables that are correlated with underlying county political predispositions. Indeed, by controlling for Kerry share we are almost certainly understating the effect of the economy on Obama's vote share. Presumably some of the counties that were suffering econom-

²¹Interestingly, these authors argue that while there is evidence that racial conservatives discriminated against Obama, there is also evidence that racial liberals may have discriminated in favor of Obama. That is, Obama's race led some white voters to support him as well as led other white voters to oppose him.

²²County demographics are based on 2007 figures and were collected from <http://www.census.gov/popest/counties/asrh/> (last accessed April 14, 2009).

²³County density data is based on 2008 estimates produced by the Bureau of the Census. See <http://www.census.gov/popest/gallery/maps/maps-county2008.csv> (last accessed April 27, 2009).

ically in November, 2008 are perennially distressed locals that, perhaps accordingly, had higher Kerry share in 2004.

One way that we might gain some leverage on the effect of race in the 2008 presidential election is to study how support for Obama varied across counties as function of the size of county African-American (*Proportion Black*) and Latino (*Proportion Latino*) populations. Because we observe the vote totals and demographics of counties rather than individual voters (due to ballot secrecy), we cannot infer from our data whether African-Americans or Latinos voters supported Obama more strongly (relative to white voters) than they had supported Kerry four years earlier. Even if we could make such as showing, we would not have established that any such relatively stronger support for Obama among minority voters was the result of Obama's race and not, say, his policy positions.²⁴

Nevertheless, it is reasonable to suppose that not all voters viewed the opportunity to vote for an African-American with the same enthusiasm. In particular, it seems likely, *ceteris paribus*, that counties with larger minority populations gave relatively greater support to Obama than did counties with smaller minority populations. This would be the case if the Obama swing was, again *ceteris paribus*, larger among minority voters than it was among white voters. However, such a result could also indicate that *all* voters in more racially diverse counties experienced a larger Obama swing than did all voters in less diverse counties. Previous studies of the effect of local racial context on voter choice in racially charged state-level elections have come to mixed conclusions with respect to the degree to which such context matters. While Key's (1949) racial threat hypothesis suggests that white voters in the South are more likely to support race-baiting candidates such as David Duke if they live in areas with larger African-American populations, studies of Duke's gubernatorial run in Louisiana find little (Giles & Buckner 1993) to no (Voss 1996) evidence that white support for Duke was larger in parishes (counties) with larger African-American populations. Our evidence, we shall see, sheds some light on this issue.

²⁴Persily, Ansolabehere, & Stewart III (2009) use exit poll data to study the variation in white support for Obama across states. They find that even controlling for partisanship, white voter support Obama (with some exceptions) fell relative to support for Kerry in 2004 in the Southern states and increased elsewhere.

These limitations and caveats aside, with some caution we interpret greater swings towards Obama in more racially diverse counties as arising from the fact that Obama is African-American. That is, we assume that once the effects of the economy and the war are controlled for, the only reason that areas with larger minority populations would disproportionately support Obama over McCain in greater numbers than they supported Kerry over Bush is Obama's race. From this we will draw some conclusions about how race contributed to local variation in Obama support. However, it is worth repeating that we cannot estimate or even bound the effect that Obama's race might have had on his electoral success nationally.

We model county-level Obama vote share using a set of regression models. Some of our models are standard ordinary least ("OLS") regressions; some OLS models are augmented with state fixed effects or what are often called indicator or "dummy" variables; and some of the regressions are hierarchical. A hierarchical regression is one in which the nesting of counties within states is explicitly modeled.²⁵ In our case, there exists a hierarchy of counties within states and then states within the United States. The hierarchy of counties within states allows us to estimate state-wide effects that affect all the counties within a given state in addition to county-level effects that are a function solely of county-level variables. Hierarchical regressions, as presented and discussed in Gelman & Hill (2007), are often thought of as compromises between models that treat all states identically (our OLS models which "pool" over states) and those that allow every state to have its own, unique effect (our fixed effects models).

In light of Karol & Miguel (2007), Kriner & Shen (2007), and Grose & Oppenheimer (2007), who establish that Iraq war deaths affected candidate vote totals in presidential (2004), Senate (2006), and House (2006) elections, respectively, we include state-level Iraq and Afghanistan fatalities per 100,000 residents as a factor that is allowed to affect the intercept in our hierarchical regression. We similarly allow state adjusted gross income (AGI) to affect the model's intercept as well as army recruits per capita at the state level, and an indicator for whether a state had a major, competitive state-wide race in November, 2008 defined as either a competitive presidential contest,

²⁵For a similarly nested framework, albeit using opinion polls instead of election results, see Park, Gelman, & Bafumi (2004).

a competitive gubernatorial contest, or a competitive U.S. Senate contest.²⁶

In analysis that follows we draw on data from the 48 continental United States. Within these states we have 2004 voting data from 3,091 counties, and we have complete demographic, military, and economic data on 2,790 of this group. The remaining 301 counties accounted for approximately 0.4% of the Obama and McCain votes in our complete 48-state dataset, and the 301 were among the smallest counties in the nation and hence had missing data on mortgage delinquency or unemployment. The 301 missing data counties contribute a small fraction of the presidential votes, 461,592 of 122,816,392 votes, in the United States, and we thus ignore them from this point onward.

We note, before presenting results, that our analysis is based on aggregate data as opposed to individual, survey-based data. The advantage of aggregate data is that it facilitates coverage of almost the entire United States (Alaska and Hawaii excluded), and thus we can use the substantial variation in exposure to economic and war context across counties in the country to estimate the correlates of Obama's victory. We also know each county's 2004 vote totals exactly, something that individual interviews in one-sample survey projects have a hard time measuring without error. While we do believe there is a place in election analysis for opinion surveys and the individual-level data in them, the information available from our aggregate election results is sufficiently rich for our purposes.

Regression Results

In Table 1 we present estimates from three linear regression models where the dependent variable in each of the models is Obama two-party vote share. In the leftmost column ("OLS") we present a simple county-level regression; the middle column ("OLS with State FE") reports results from the same regression augmented with state fixed effects; and, the rightmost column ("Hierarchical") contains results from a two-level hierarchical model in which, as discussed above, counties are

²⁶Source for AGI data is the Internal Revenue Service, see fn. 16, and for army recruitment data the National Priorities Project, see fn. 19. Competitive races are defined as those whose final margin was within ten percentage points.

nested within states and regression intercepts vary by state. Standard errors in the first model are heteroskedasticity-robust and clustered on state and in the second are heteroskedasticity-robust.²⁷

*** Table 1 about here ***

As noted earlier, in all three models we control for 2004 county vote share for John Kerry. By controlling for previous Democratic vote share, we are implicitly estimating the difference between Obama and Kerry while allowing that difference to be a function of the level of support for Kerry.²⁸

We find that the coefficient on Kerry vote is close to one, particularly in the simplest OLS model shown in the leftmost column of Table 1; this means that the Obama swing was not particularly larger or smaller in counties that supported Kerry more strongly in 2004.²⁹ Once other state-specific factors are accounted for however, as in the middle and rightmost columns of Table 1, the estimated coefficient on Kerry vote in 2004 drops somewhat to about 0.93 ($p < 0.01$) indicating that, all else equal, the swing towards Obama was larger in counties that had given Kerry less support in 2004. The magnitude of this effect is modest. Estimates in columns two and three of the table suggest that each 14 percentage point increase in Kerry support in 2004 decreased the Obama swing by one percentage point, *ceteris paribus*.

The non-hierarchical regression model (“OLS”) without state fixed effects is instructive yet imposes a form of across-state homogeneity that does not seem plausible. Thus, we believe that the results most credible in Table 1 are those which allow for across-state variation, e.g., the middle and rightmost columns in the table. Insofar as results in these two models are very similar, without loss of generality we focus attention on the hierarchical model in the discussion that follows.

²⁷We estimated the hierarchical model using *lmer* code from the *lme4* package in the R statistical computing environment (R Development Core Team 2009). Full details are available from the authors.

²⁸To see this, subtract Kerry support from both the left- and right-hand side of our regression equation. The dependent variable in this new regression equation is the difference between Obama and Kerry support and the effect of Kerry support on this difference (the Obama “swing”) is $(1 - \beta)$ where β is the effect or slope coefficient of Kerry vote on Obama vote in our linear specification. It is easily shown that all of the other estimated effects will be the same under either strategy.

²⁹That is, $1 - \hat{\beta} \approx 0$ where $\hat{\beta}$ is the estimated Kerry effect from a given model. See fn. 28.

Economic Effects

We allow the effect of mortgage delinquency on Obama vote share to be a linear function of log wages by including an interaction between mortgage delinquency and log wages in our regression model. Due to the inclusion of this interaction, a negative coefficient on mortgage delinquency does not necessarily imply that increasing mortgage delinquency was associated with less support for Obama; to calculate the marginal effect of mortgage delinquency the interaction must be considered as well. In Figure 6 we plot the effect of mortgage delinquency across the range of county wages per capita.

*** Figure 6 about here ***

We see in Figure 6 that the mortgage delinquency effect on Obama vote share is increasing in county wages per capita. Notably, the effect is statistically significant when wages per capita are somewhat greater than \$15,000.³⁰ We interpret this to mean that the housing shock had the greatest effect, politically, on voters who lived in relatively wealthy places. Poor counties, *ceteris paribus*, were less likely to face a political effect of the end of the housing bubble, perhaps because a mortgage crisis tends to affect middle or upper class voters more than it does relatively poor voters who are already accustomed to some amount of economic hardship. The greatest shocks from the end of the housing bubble, that is, were felt in middle to upper class counties where housing prices presumably had much room to fall. The predicted effect is greatest, of course, in the locations shaded most dark in Figure 5.

We find a small but non-trivial positive effect on Obama share of the change in county mortgage delinquency between the first quarter of 2007 and the fourth quarter of 2008. We will explore this coefficient and the other delinquency effect further in the section below that covers various hypothetical, counterfactual elections.

Similarly, Table 1 shows that counties with the greatest dividend per capita rate were disproportionately pro-Obama, *ceteris paribus*. What might explain this? Counties with exposure to

³⁰536 of our counties have wages per capita above \$15,000, and these counties encompass approximately 55.8 percent of all votes.

financial markets faced a relatively large and certainly palpable economic shock as these markets lost value during 2008. That is, the greater the exposure to markets in a county, the greater the perceived economic consequence due to market declines and, as Table 1 suggests, the greater the swing toward Obama.

Ceteris paribus, we also see from Table 1 that wealthier counties tended to be Democratic in 2008 (in this case, pro-Obama), a finding consistent with the aggregation effects found in Gelman (2008). And, we find state-level income has an effect similar to that of county-level wealth (greater wealth is associated with greater Obama vote share). We note that the effect of wealth is augmented by mortgage delinquency: the greater the mortgage delinquency rate in a county, the more wages per capita increase Obama share, *ceteris paribus*.

Local employment conditions appear to have had relatively little effect on support for Obama. Neither the county-level rate of unemployment or the change in that rate since the beginning of George W. Bush's second term are estimated to significantly have affected support for Obama.³¹

Effects of Afghanistan and Iraq War Deaths

Our hierarchical models contain two variables that measure the impact of the Iraq and Afghanistan wars on county-level Obama vote share. We find, in particular, that a county's army enlistment rate is a strong predictor of Obama vote share. A natural interpretation of this finding, holding all else including wealth constant, is that counties with more soldiers at risk swung more towards Obama. However, we do not see a county-level Iraq and Afghanistan fatality effect.

Also notable is the Iraq and Afghanistan state-level fatality effect in the hierarchical model column of Table 1. The effect is positive and statistically significant, and this parallels findings in Karol & Miguel (2007). Karol & Miguel study the 2004 presidential election and uncover a state-level Iraq casualty effect: the more dead and wounded in a state, the lower Bush's vote share. Although John McCain, Obama's Republican opponent, was not an incumbent in 2008, his policy

³¹These findings are roughly consistent with those in Cho & Gimpel (2009), who argue that over most of the country unemployment was not pivotal to vote choices. Cho & Gimpel do identify what one might call an Appalachia zone in which unemployment rates did influence votes.

positions on Iraq were more aligned with those of the Bush Administration than were Obama's. The effect of this is clearly evident in Table 1. And these findings hold despite controlling for state-level army recruitment, which we use to proxy for a state's positive disposition towards the military, consistent with the coefficient's positive effect for McCain.³²

One might inquire as to why Table 1 and Karol & Miguel find evidence of state-level casualties as opposed to, say, compelling evidence of more local effects. After all, our economic variables operate at the county level—why not the Iraq and Afghanistan fatalities variable? We speculate that this contrast is driven by the relative obscurity of county-level war casualties compared to, say, the obviousness of local unemployment, of shuttered storefronts, of a plethora of house for-sale signs, and so forth. Perhaps presidential candidates, with the Electoral College in mind, use state-level Iraq and Afghanistan figures in their advertisements that, due to media market boundaries, cross county lines. All of this is speculative, of course, and it raises an interesting research question, i.e., do more obscure foreign policy matters have state-level effects while more tangible issues operate locally? This question is beyond the scope of the analysis here, but our results are consistent with an affirmative answer.

Demographic and Race Effects

Our next set of variables estimates the effect of racial demographics on Obama vote share. As the hierarchical model column of Table 1 indicates, proportion Hispanic is strongly related to Obama share. Holding Kerry share constant, with each additional percent a county's population is Hispanic, Obama share increases by 0.18 points. If the demographic models that predict

³²The hierarchical (state-level) point estimate for Iraq and Afghanistan war deaths is difficult to compare to plausibly similar point estimates in Karol & Miguel (2007), Kriner & Shen (2007), and Grose & Oppenheimer (2007). With respect to the former, the analysis there holds candidate (George W. Bush) constant, and of course the research presented here compares vote shares across candidates, namely Kerry and Obama; with respect to the Senate study in Kriner & Shen, the key casualty variable is the fraction of total casualties experienced by a state, and this is not inherently comparable to the per state resident casualty figures used here; and, finally, with respect to the House election analyses in Grose & Oppenheimer (2007), the key casualty variable is a count of casualties per Congressional District (possibly adjusted in case a zip code of soldier residence does not pin down a district, Grose & Oppenheimer (2007)'s *Measure 2*). Despite the different definitions and specifications used across the three studies noted here and the present analysis, all four studies come to the same qualitative conclusion. Precise effect magnitudes await future research.

increasing Hispanic population in the United States remain correct despite the current economic downturn's effect on immigration, Obama's success in increasingly Hispanic counties where population growth is fastest portends well for Obama's 2012 election campaign and Democratic election chances in the future.

The effect of proportion black on Obama share is more complicated. The direct effect in both state-effect controlled models is negative, suggesting that increasing proportion black *decreases* Obama share. These effects are marginally statistically significant but not very large: each additional percent county population black, Obama share decreases by 0.05 points. Note that this effect is holding all else, such as population density and Kerry share, constant. In contrast, the South times black interaction coefficient suggests that in Southern counties each additional percent population black *increases* Obama share by about 0.17 points, about the same effect as for Hispanic population (0.18, as noted above).

We explore the relationship between the size of the African-American population and Obama vote in greater detail in Figure 7. This figure shows the expected Obama vote as a function of the county-level black population proportion in the non-South and South, respectively. These estimates are generated by fitting a variation of the state fixed effects model of Table 1 (middle column) to Southern and non-Southern counties separately in which the effect of county racial composition is not constrained to be linear but is instead allowed to vary by a semi-parametric spline function.³³ Spline functions can fit straight-line relationships to the data. They can also curve, bend or reverse course as the data suggest. The curves plotted in Figure 7 reflect the expected result of increasing the size of the black populations in Southern and non-Southern counties moving away from zero percent black, *ceteris paribus*. Dashed lines shows 95 percent confidence intervals. The y-axis is scaled so that the expected Obama support in counties with very small black populations is equal to the average support for Obama across such homogeneously non-black counties (less than one percent black) in each region.

*** Figure 7 about here ***

³³Splines estimated using the *gam* package in R (Hastie 2008, R Development Core Team 2009).

The estimates in Figure 7 corroborate a strong positive relationship between proportion black and Obama share in Southern state counties, even controlling for Kerry share. Moving from an all-white Southern county to a Southern county that is 60 percent black is associated with an increase of 15 points in Obama share, *ceteris paribus*. In contrast, outside the South, Obama swing is not increasing in the size of the black population.³⁴ It is probably far-fetched to consider realistically the hypothetical effect of varying the size of the black population in a county from zero to as much as 80 percent holding economic and war factors constant. However, understood as relative effects, the estimates noted here do allow us to consider whether counties moved more heavily towards Obama as a function of the size of their black populations controlling for other factors.

The racial threat hypothesis implies a curvilinear relationship between a black candidate's support and the proportion black in a county. We would expect Obama support first to fall (or increase at a slower rate) as the size of the black population increases from near zero and whites in the county increasingly offer less support to a black candidate in response to the racial threat of blacks in the local area. But as the proportion black continues to increase, Obama share should begin rising again (or increase at a faster rate) as the direct effect of the black population's support for Obama swamps the indirect effect of the shrinking white population's racial threat response to the black population. Interestingly, in Figure 7 we find little evidence of this sort of relationship. Both inside and outside the South, the estimated effect of increasing the size of the black population is approximately linear. There is perhaps some weak evidence of a curvilinear dynamic in the zero to 20 percent range of black population in the South where the estimated effect in size of the black population seem to be increasing quadratically.

What is the source of the difference between Southern and non-Southern states? Of course the difference we identify above extends well beyond the variables in our model. While the uniqueness of the South transcends the scope of this article, one might reasonably conjecture that the history of this region and its link to institutionalized racism (slavery, black disenfranchisement, and so

³⁴Note the much smaller range of proportion black in non-Southern counties compared to the corresponding distribution across non-Southern counties. This is evident in the rug marks on the bottoms of each frame. See the note for Figure 7.

forth) render it non-surprising that there is greater race-based voter elasticity there than in non-Southern states. Exit polls suggest that over 95 percent blacks voters both inside and outside the South supported Obama, a roughly 10 percentage point increase over black support for Kerry in 2004 (Persily, Ansolabehere, & Stewart III 2009). Thus, in a Southern county in which 80 percent of the voters are black, only 8 percentage points of the expected 16 point swing towards Obama (as shown in the right-hand panel of Figure 7) can be the result of increased support for the Democratic candidate among blacks between 2004 and 2008. The rest could arise from two possible sources: (1) an increase in black turnout (relative to white turnout) between 2004 and 2008; or, (2) a swing away from the Democrats among Southern white voters that is *decreasing* in the share of black voters in the county. Which of this two possibilities drives the pattern of Obama swing as a function of black population share observed in the South cannot be determined from our research design. This issue is certainly worthy of additional research.

Additional Sources of State Heterogeneity

We now turn to estimates of state-level heterogeneity, conditional on our covariates and models. Why do we do this? Simply put, some of the pro-Obama county swing under study here can be attributed to state-level variation. State-level variation can be caused by the state-level covariates we estimate in our hierarchical model or can reflect unmeasured, state-level treatments such as campaign and media activity (perhaps induced by the Electoral College) that varied by state as opposed to by county. If, for example, the counties in Illinois, Obama's home state, were uniformly more pro-Obama in November, 2008, then this should be understood as an Illinois effect as opposed to a county-level effect that happened to hit all the counties in Illinois.

The hierarchical model presented in Table 1 provides an estimate of each of these state-level effect. While the values of each these state-specific effects are not shown in the table, we plot them in Figure 8. In this figure, we shade each state by the estimated deviation between its observed swing towards Obama and the expected swing in an average state having the same county-level variable values. In this sense, these state-level effects can thought of the average residual swing

towards or away from Obama in each state once the county-level variables that we consider have been accounted for. States move from dark (strong McCain swing) to light (strong Obama swing), with gray values state effects in the middle.

*** Figure 8 about here ***

Arkansas, Tennessee, and Louisiana notably tended most strongly towards McCain relative to 2004, while Obama did better than expected given county characteristics in Utah, Montana, Wisconsin, and Indiana. Interestingly, estimated state random effect are negative in two states, North Carolina and Florida, that Obama won in 2008 despite Kerry losses in 2004.³⁵ Our estimates thus indicate that in these two states Obama's victory can be attributed to county- and state-level context as measured by our explanatory variables rather than to unmeasured state-level heterogeneity. Nonetheless, the state-level heterogeneity among our estimated random effects is substantively relevant: state-level effects range from a pro-McCain random effect of -0.099 in Louisiana to a pro-Obama random effect of 0.08 in Indiana.

Recently Persily, Ansolabehere, & Stewart III (2009) have noted that Obama's election has led some to question whether the Voting Rights Act of 1965³⁶, commonly known as the VRA, is still necessary. Persily, Ansolabehere, & Stewart III consider whether states requiring United States Department of Justice pre-clearance to implement changes in election administration under Section 5 of the VRA were more racially polarized in their presidential-election voting or less supportive of Obama, controlling for other individual characteristics such as partisanship and education. Arguably, the justification for continued pre-clearance is weakened if in an election involving a black candidate for president no differences in voting behavior are found between voters residing in states requiring pre-clearance and voters residing in states not requiring pre-clearance.³⁷ Drawing on a variety of exit poll and other survey data, Persily, Ansolabehere, & Stewart III find lower levels of white support for Obama in pre-clearance states even controlling for individual voter character-

³⁵The negative North Carolina result here could reflect the same John Edwards effect discussed below in the context of the mortgage delinquency counterfactual.

³⁶19 Stat. 437, U.S.C. §1973.

³⁷While a fuller discussion of the logic of Section 5 of the VRA is beyond the scope of this article, we note that whether differences in voting behavior in the 2008 Presidential election between currently covered and currently uncovered states are relevant to the question of whether Section 5 is still necessary or constitutional is debatable.

istics such as partisanship, ideology, and education. The state effects that we present in Figure 8 reinforce this finding. The greater support for McCain that Persily, Ansolabehere, & Stewart III identify could have hypothetically resulted from, for example, covered states having less exposure to the housing crisis or better general economic conditions than were found in uncovered states. However, because our model controls for local variation in economic conditions and exposure to the wars in Iraq and Afghanistan in addition to racial composition, partisanship, and ideology,³⁸ our results rule out the possibility that apparent differences between pre-clearance states and other states arise from differences in local conditions rather than differences in voter behavior (including perhaps, racial discrimination).

Based on the data presented in Figure 8, we estimate that support for Obama was, *ceteris paribus*, 2.5 percentage points lower in states covered (or partially covered) by Section 5 of the VRA than it was in the uncovered states. Again, this number is estimated while controlling for economic conditions, exposure to war casualties, demographics, prior presidential vote share, and our other variables measuring local conditions. This difference increases to 3.4 percentage points if we consider only the six states that have been wholly covered since 1965 (a set of states whose past discrimination was predominantly against African Americans rather language-based ethnic groups).³⁹ Indeed, the only VRA Section 5 covered states for which Obama outperformed model expectations were North Carolina (which has been partially covered since 1965), New York (three counties covered), and Michigan (two townships covered). While we cannot definitively attribute Obama's under-performance in states covered by Section 5 of the VRA to his being black, we can conclude with confidence that voters in covered states were less likely to support the black candidate in the 2008 presidential election, *ceteris paribus*.

Differences in support for Obama between covered and uncovered areas can be further explored by comparing covered to uncovered counties within the single state of North Carolina. By

³⁸Local partisanship and ideology are accounted for in our model through the inclusion of Kerry support as a predictor of Obama support.

³⁹Those states are Alabama, Georgia, Louisiana, Mississippi, South Carolina, and Virginia, as enumerated by the United States Department of Justice at http://www.usdoj.gov/crt/voting/sec_5/covered.php#note1 (last accessed October 1, 2009).

looking within a single state, we avoid possible state-level confounding factors that may lead us to falsely attribute differences in state-level support for Obama between covered and uncovered states to differences in voter tastes for a black candidate. Since 1965, 40 of North Carolina's 100 counties have been covered under Section 5 of the VRA. We compare the Obama swing in covered counties to the Obama swing in the uncovered counties in the state while accounting for other county-level factors by analyzing whether Obama systematically over- or under- performed our model's prediction in each type of county. Comparing the residuals from our regression model, the difference between the observed Obama swing and the swing predicted by the model, we find that the Obama swing was over-predicted by an average 0.7 percentage points in covered counties and under-predicted by an average of 0.5 percentage points in the uncovered counties. Taken together, these estimates suggest that Obama swing was 1.2 percentage points larger in uncovered counties than it was covered counties, *ceteris paribus*, and further buttress the findings of our state-level analysis.

Counterfactual Analysis: What Might have Happened in 2008

We now turn to a hypothetical consideration of two of our main findings: what might have happened to the 2008 election outcome if not for the mortgage meltdown or unpopular wars? To estimate these counterfactual outcomes (recall, these are alternative scenarios that in reality did not occur), we fit our hierarchical model coefficients to hypothetical alternative sets of data where mortgage delinquency by county is set to a county's' First Quarter, 2007 delinquency rate (the first measurement we have from the New York Fed), where there were zero Afghanistan and Iraq War fatalities 2004-2007 (both county and state level variables), and a hypothetical world where both obtain.

With our hierarchical model coefficients and counterfactual data we are able to generated predicted values (and associated confidence intervals) for Obama vote share by county. Since county totals ultimately determine the winner of the presidency, mediated by the Electoral College, it follows that our counterfactual analysis allows us to model the effect of alternative scenarios on the

winner of the 2008 presidential race. Our counterfactual exercise is not unlike calculating predicted values from an ordinary regression wherein the predicted values correspond to variable values that capture scenarios of interest.

Limitations of Counterfactuals

One limitation of any counterfactual analysis lies in the extent to which the scenario counterfactually posited is qualitatively different from what was observed in reality. Would it be interesting in a counterfactual sense to consider the effect of an 90% drop in the financial markets on the 2008 presidential election? The answer is certainly yes. Nonetheless, a drop of this magnitude is so large and so out-of-sample, broadly speaking, that suggesting our model can internalize it would strain credulity.

Our mortgage delinquency counterfactual is not unreasonable as an alternative. Note that First Quarter, 2007, mortgage delinquency rates across counties are well within the variation of the rates observed during Fourth Quarter, 2008: many counties at the time of the 2008 presidential election had mortgage delinquency rates similar to those of other counties from two years prior. Thus, estimating a mortgage delinquency counterfactual based on 2007 rates does not constitute a large, out-of-sample leap.

In contrast, our counterfactual of zero foreign war fatalities at the state level is out of sample. In resetting the state-level fatalities to zero per 100,000 population we are estimating the effect of an explanatory variable almost two standard deviations below the lowest observed level 2004-2008 (0.73 fatalities per 100,000 in Rhode Island). The corresponding county-level counterfactual, though, is not out-of-sample: more than half of our counties had zero total Afghanistan and Iraq War fatalities through the 2008 election.

Of course, one might question whether the zero war fatality would have changed the winner of the Democratic and Republican presidential primary elections. If Obama's early opposition to the Iraq War was pivotal to his primary victory over then Senate Hillary Clinton, then in the counterfactual scenario Obama might be the wrong candidate to model. Indeed, even McCain might not

won the Republican primary had the Iraq and Afghanistan wars never started: his national security expertise in such a scenario might have been perceived as less valuable.

Nonetheless, our models do not have any leverage on what a 2008 presidential race would have looked like if the contesting candidates were, say, Democrat Hillary Clinton and Republican Mike Huckabee. Thus, we hold candidate identity constant in our scenarios, mindful of the possible strength of this assumption.

Results of Counterfactual Analysis

To assess uncertainty in counterfactual election outcomes, we implement a bootstrap resampling procedure (Efron & Tibshirani 1993).⁴⁰ Overall, we estimate significant counterfactual effects. At the national level, Obama's two-party share was 53.1 percent across all states and 53.0 percent in our non-missing data counties in the continental United States. Under the hypothetical world with mortgage delinquency rate in each county at its 2007, First Quarter, levels, we estimate an Obama share of 52.8 percent with a 95 percent bootstrap confidence interval of [52.4, 53.2], *ceteris paribus*. In a hypothetical world with no Iraq or Afghanistan fatalities, however, we estimate an Obama share of 47.8 percent [47.2, 48.5], suggesting perhaps an Obama election defeat had there been no fatalities in Afghanistan and Iraq. Combining the two effects together into a world with First Quarter, 2007, mortgage delinquency and no Afghanistan and Iraq fatalities lowers Obama share further to a average outcome of 47.2 [46.5, 47.9] Obama.

According to our estimates, then, the Afghanistan and Iraq Wars were pivotal in the 2008 presidential election. Of course this should be understood as a partial equilibrium effect: the Bush Administration could have presumably reduced Afghanistan and Iraq casualties to zero by simply withdrawing all United States forces from these two counties. Would the resulting violence in Iraq

⁴⁰We create 1,000 bootstrap samples. For each bootstrap sample, we re-estimate our hierarchical model on a random sample with replacement of non-missing data counties stratified by state so that the number of counties and number of counties per state is fixed in each iteration. With the coefficients estimated on the stratified random sample, we create a fitted value for all original counties under each of our counterfactual worlds, for each county adding one draw from the county-level disturbance distribution to reflect prediction uncertainty. We then aggregate the counties to national and state Obama two-party share. We use mean and 2.5 and 97.5 percentiles across bootstrap iterations for our predicted counterfactual values and confidence intervals.

(if such a prediction is accurate) have swung the public against John McCain in the same way that war casualties appear to have? We cannot answer this, of course, but it is a natural question to ponder.

Counterfactuals that involve manipulating conditions across the entire nation are, of course, somewhat fanciful because they conflate national- and local-level effects. While we believe our national-level counterfactuals provide lower-bound estimates of the effects of interest, we also offer estimates of the effects of changing key variables within a single state holding fixed conditions elsewhere. Because altering conditions on a single state typically has only a modest effect on the national conditions, our single-state counterfactuals face fewer of the sort of partial-equilibrium problems that arise when considering altering conditions in the nation as a whole.

For our state-by-state counterfactuals, we consider the nine states that Obama won with between 50 and 54 percent of the total vote (note that we estimate our model on two-party share but the election outcome is determined by plurality). How likely were these battleground states to shift to McCain in our three hypothetical conditions? In Figure 9 we present the results for the United States and these battleground states under each of the three conditions.

In the counterfactual world where mortgage delinquency changes, only North Carolina flips to McCain based on confidence intervals though Florida's point estimate is pro-McCain. Even if McCain won Florida in addition to North Carolina, however, Obama still wins the Electoral College, 322 to 216.

It is worthwhile noting that North Carolina was the home state of John Edwards, the 2004 Democratic nominee for Vice President. As such, in 2004 and conceivably in 2008 observed vote totals may be been unusually pro-Democrat given the profile of North Carolina. Any regression to the mean, then, could in this scenario flip North Carolina to a pro-Republican position in 2008. This is one rationale for North Carolina's fragility in 2008, i.e., the fact that it is the only state that flips to McCain in our mortgage delinquency counterfactual.

In both counterfactual worlds with zero Afghanistan and Iraq War fatalities and with no fatalities in addition to First Quarter, 2007, delinquency, many more states flip to McCain, *ceteris*

paribus. Obama states that we predict for McCain with confidence intervals that do not overlap 50 percent include, in addition to North Carolina, Indiana, Ohio, Florida, and Virginia. The point estimates of New Hampshire, Iowa, and Colorado also swing to McCain with no war fatalities. Just giving McCain the electoral votes from the outside-50 percent-confidence interval states still does not get him to an Electoral College victory, with Obama squeaking out a 278 to 260 win. But if Iowa and New Hampshire were to flip, McCain wins. And if only Colorado flips, we predict an Electoral College tie of 269 to 269.

We stress that these results are derived only from the impact of changes in *local* variation in mortgage and fatality variables. All of our models estimate a national intercept across all counties conditional on the other variables in the model, something that might be considered the national swing from 2004.⁴¹ If part of the national swing is due to the national sense of the country being on the wrong track due to Iraq war fatalities or due to changes in mortgage delinquency, our counterfactual predictions *underestimate* the effects of each because we keep the estimated intercept and estimated state random effects constant in our counterfactual fits. Bartels & Zaller (2001, p. 15), for example, estimate a model-averaged indicator of war hurting incumbent vote share by -3.9 points though of course they do not separate the national, state, and local components that comprise this overall total effect. While we have no way to estimate the proportion of our intercept that is due to the mortgage crisis or the war in our cross-sectional model, we suspect that if that were properly accounted, the no-war counterfactual could plausibly have led to a McCain victory.

Conclusion

In this article, we have explored the state- and county-level variation of Barack Obama's vote share in the 2008 presidential election. We find that Obama benefited from a broad national shift in support relative to the 2004 Democrat John Kerry, but that a sizable portion of the shift can be attributed to variation in local experiences and conditions. Specifically, we show that were it

⁴¹The actual intercepts reported in Table 1 are not directly interpretable as national swing because of centering and excluded categories.

not for the many fatalities caused by foreign engagements in Afghanistan and Iraq, John McCain would have been much more competitive in the 2008 presidential race if not its overall victor. We also find that local levels of housing trouble increased Obama's vote share among counties and that, the more wealthy the county, the greater the housing crash hurt McCain.

With respect to race and ethnicity, while we cannot attribute effects necessarily to Obama's racial background, we find that, even controlling for economic, geographic, and foreign war conditions, Obama did disproportionately well in counties with relatively large minority populations. Across the nation counties with more Hispanics had higher support for Obama, but only in the South do we find that counties with relatively large black populations had, *ceteris paribus*, large surges in support for Obama.

Obama benefited from a variety of negative policy outcomes that voters seem to have attributed to the incumbent Republican party, this despite John McCain's stated differences from George W. Bush. Whether the same conditions that benefited Obama the challenger in 2008 will hurt Obama the incumbent in 2012, or if, alternatively, the 2008 election demonstrated a sustainable Democratic coalition, will be seen as we move toward 2010 and 2012.

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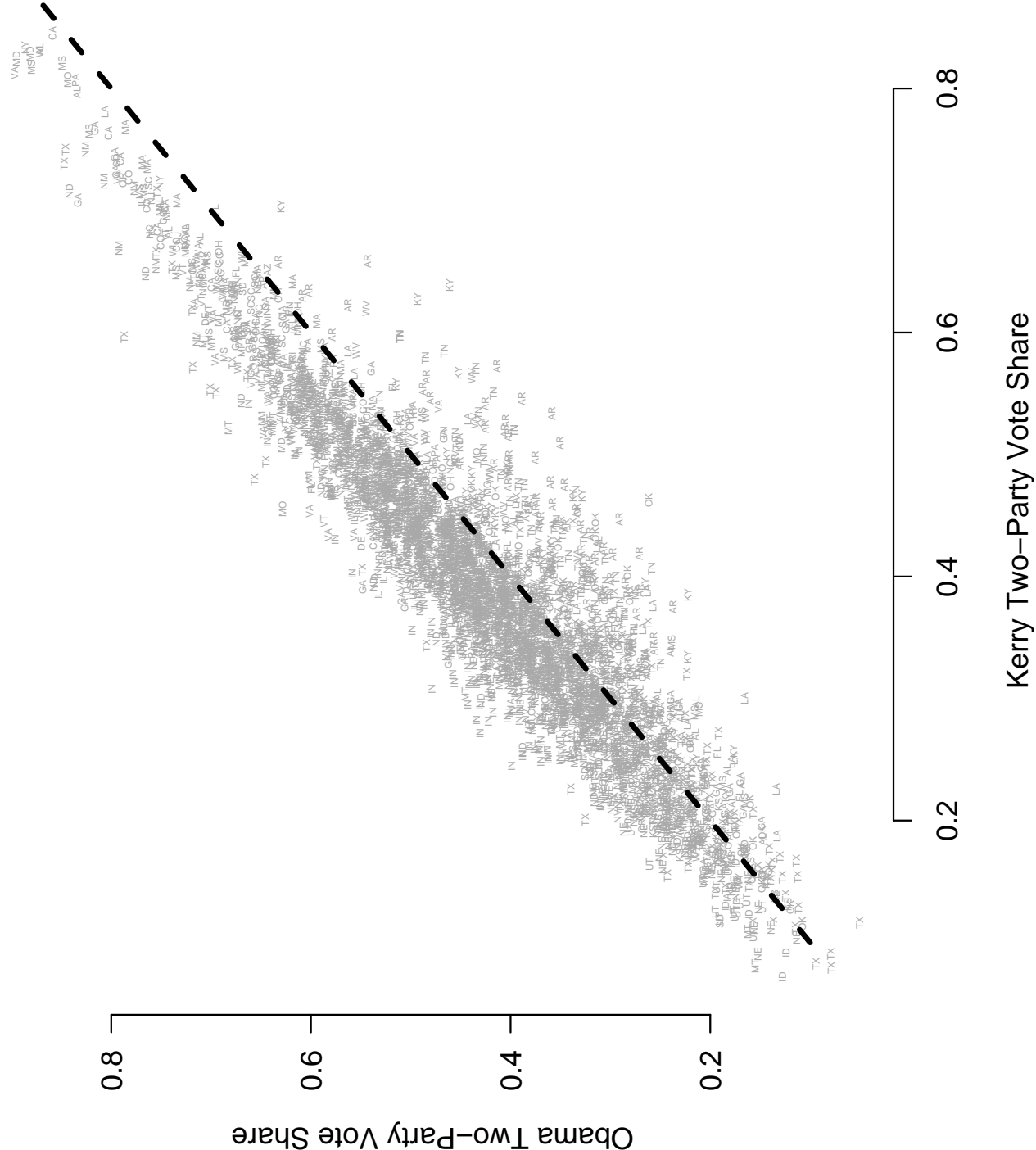
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Table 1: Models of Obama County Vote Share

	OLS	OLS with State FE	Hierarchical
Kerry Two Party Share 2004	1.001 (0.036)	0.930 (0.008)	0.931 (0.007)
Mortgage Delinquency Rate 08Q4	0.408 (0.922)	-0.648 (0.420)	-0.633 (0.344)
Change Mortgage Delinq 07Q1-08Q4	-0.173 (0.247)	0.103 (0.079)	0.099 (0.064)
Log Wages per capita	0.067 (0.020)	0.008 (0.005)	0.008 (0.005)
Mortgage 08Q4 * Log Wages	0.013 (0.391)	0.300 (0.170)	0.295 (0.138)
Log Dividends per capita	0.026 (0.008)	0.012 (0.002)	0.012 (0.002)
Unemployment Rate Sept 08	0.167 (0.238)	-0.083 (0.056)	-0.084 (0.047)
Change Unemp Rate/100 05-08	-0.178 (0.132)	0.024 (0.048)	0.020 (0.040)
Proportion Black	0.148 (0.068)	-0.048 (0.022)	-0.046 (0.019)
South * Black Interaction	-0.111 (0.058)	0.219 (0.022)	0.214 (0.019)
Proportion Hispanic	0.096 (0.017)	0.176 (0.010)	0.175 (0.007)
Log Population Density	-0.006 (0.002)	0.004 (0.001)	0.004 (0.001)
Iraq/Afghanistan Fatalities per 1000	0.043 (0.020)	0.011 (0.015)	0.012 (0.017)
Army Recruits per 1000	0.007 (0.003)	0.006 (0.001)	0.006 (0.001)
State Iraq/Afghanistan Fatalities per 100K			0.037 (0.012)
State AGI per Capita			0.002 (0.002)
State Army Recruits per 10K			-0.004 (0.002)
State Competitive Race			0.012 (0.012)
Intercept	-0.150 (0.051)	0.011 (0.014)	-0.039 (0.076)
N	2790	2790	2790
Adjusted R-Squared	0.885	0.956	
Std. Error of Regression	0.045	0.028	

Note: Multiple regression coefficients with White standard errors in parentheses. The leftmost column (“OLS”) contains results from an ordinary least squares regression; the middle column (“OLS, State FE”) is the same regression augmented with state-level fixed effects (FE); and the rightmost column reports a hierarchical model that allows state-level intercepts to be functions of three state-level variables. Standard errors in the first column are robust and clustered on the state, and in the second column are robust.

Figure 1: Kerry (2004) and Obama (2008) Two-Party Vote Shares by County



Note: Depicts vote shares for John Kerry (2004) and Barack Obama (2008). Each two-letter state abbreviation in the figure represents a county, and the dashed line in the figure is a 45 degree line. A county that lies on the line had identical Kerry and Obama vote shares.

Figure 2: Obama Share Minus Kerry Share by County

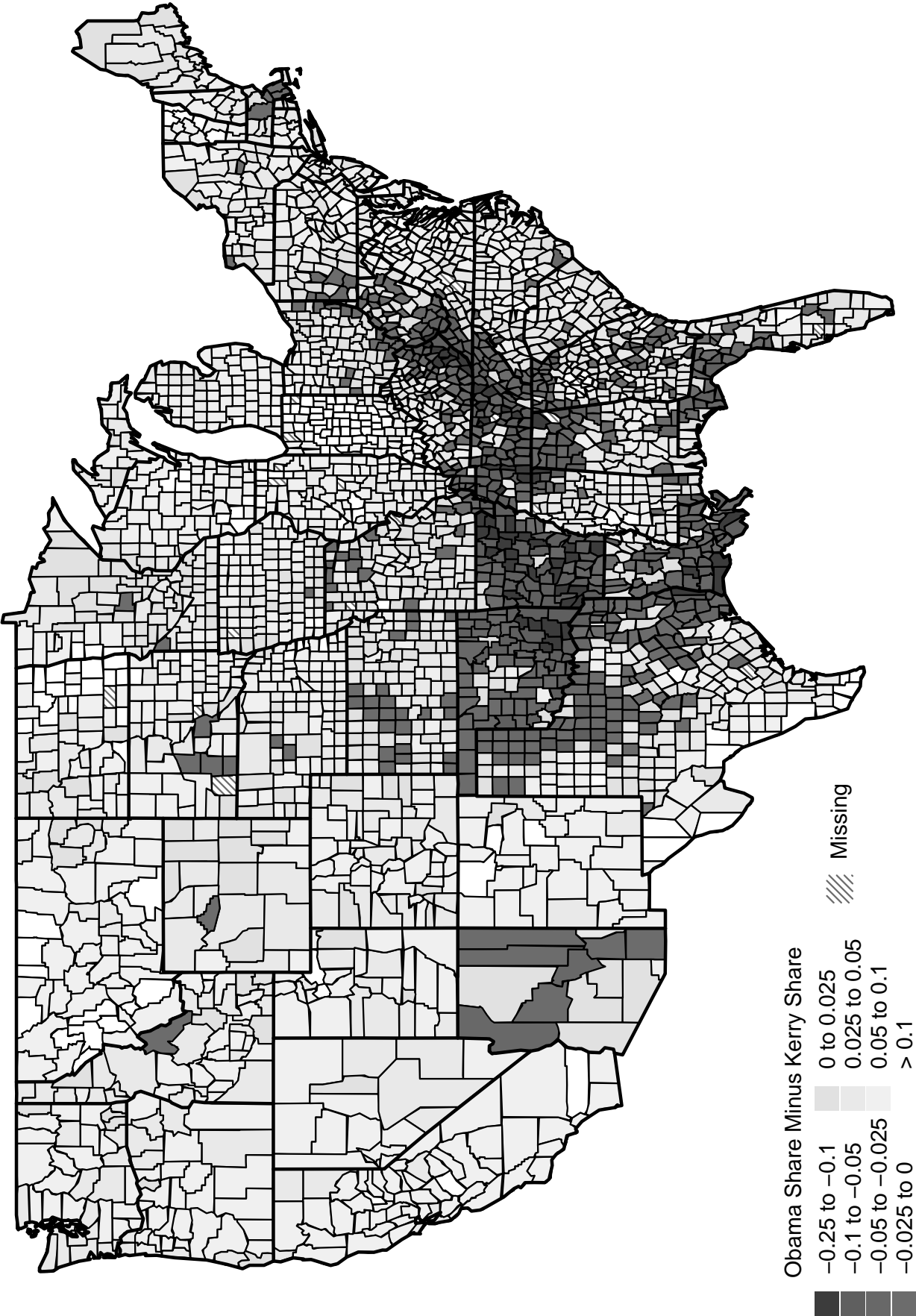
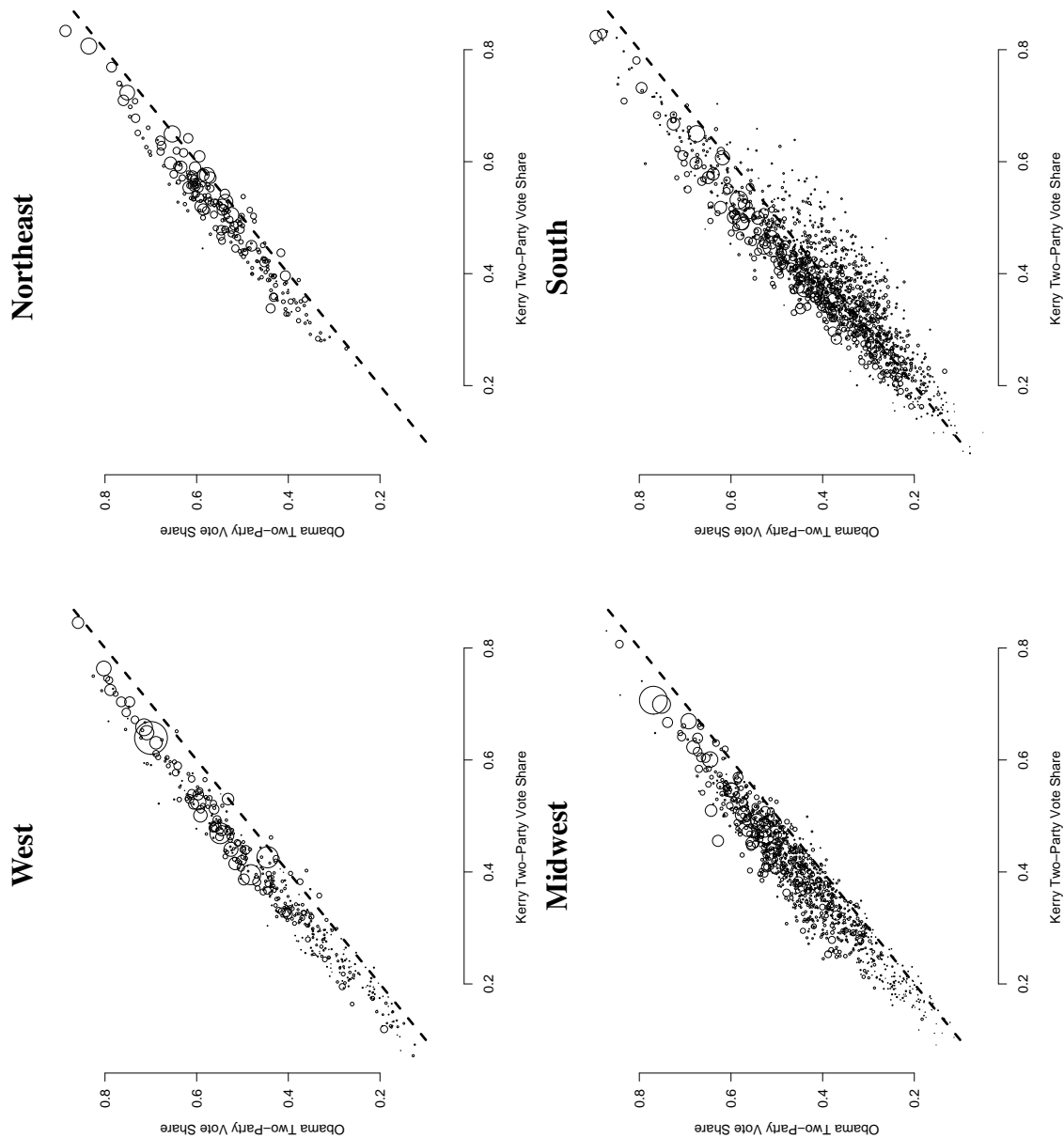
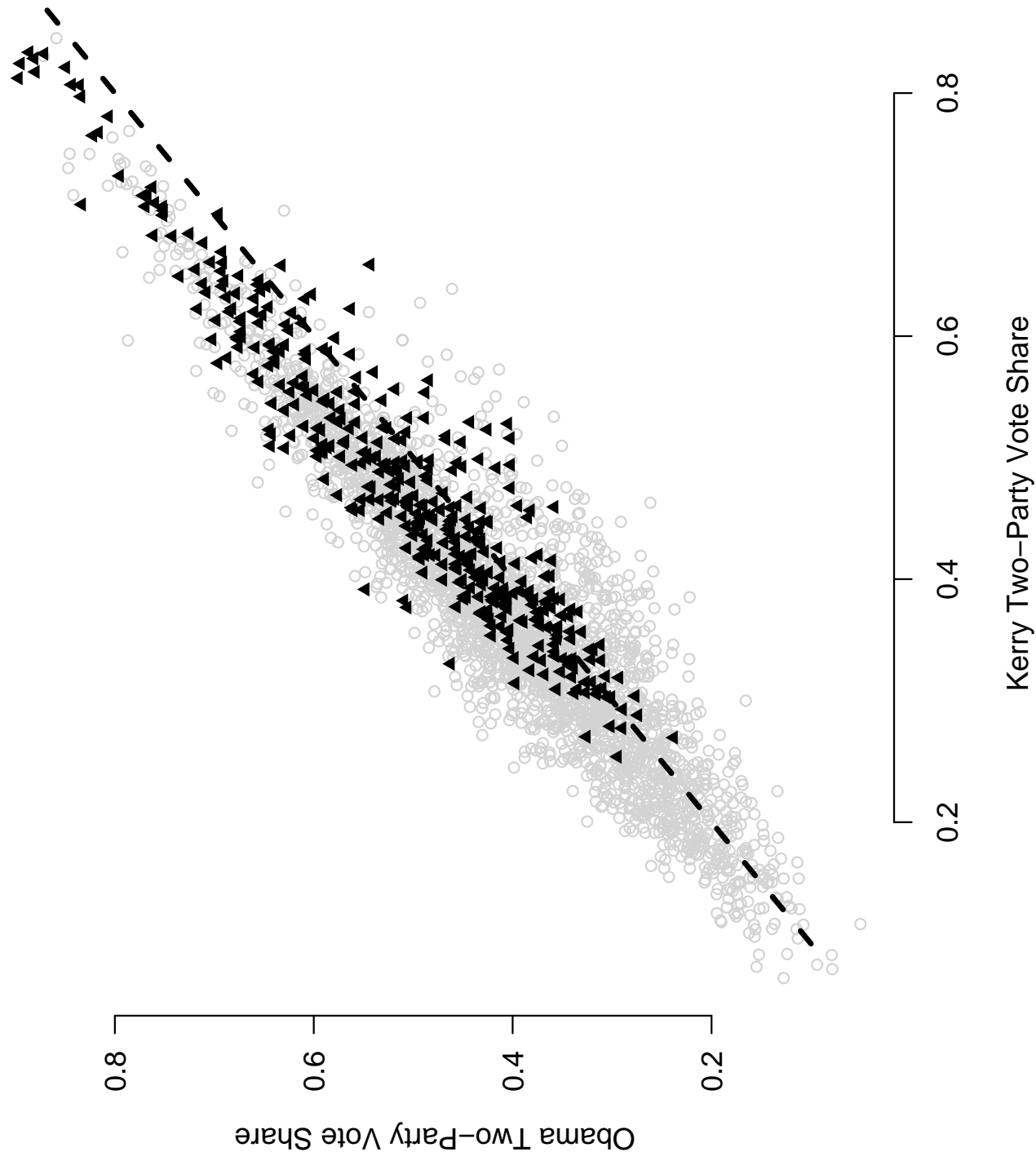


Figure 3: Kerry (2004) and Obama (2008) Two-Party Vote Shares by County and Region



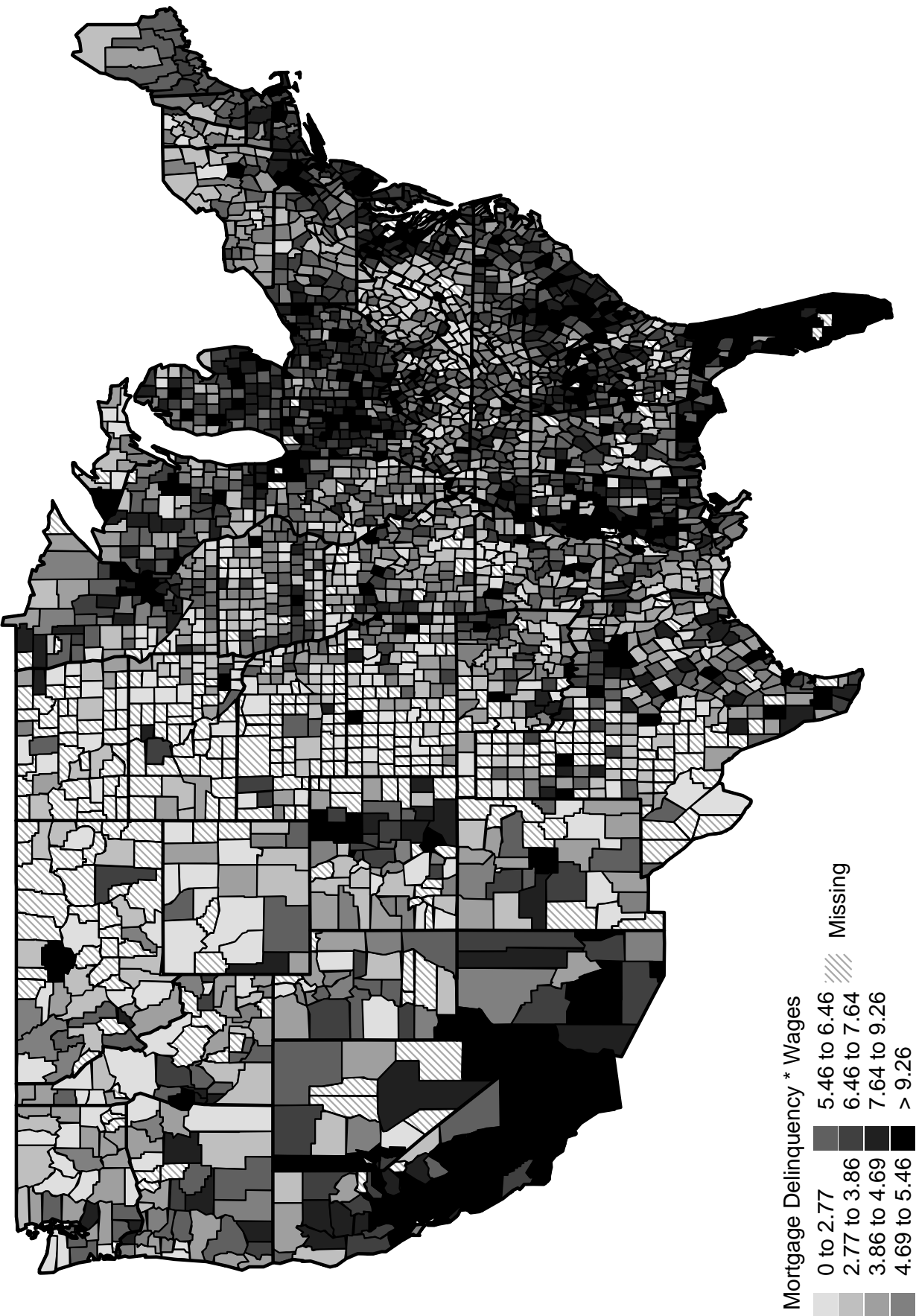
Note: Depicts vote shares for John Kerry (2004) and Barack Obama (2008), by census region. Each point is one county with symbol size proportional to the total number of Obama and McCain votes.

Figure 4: Kerry (2004) and Obama (2008) Two-Party Vote Shares by County and Percent Black



Note: Depicts vote shares for John Kerry (2004) and Barack Obama (2008). Each symbol represents a county: solid triangles denote counties at least 25 percent black and open circles denote counties less than 25 percent black.

Figure 5: Mortgage Delinquency and Wages Interaction



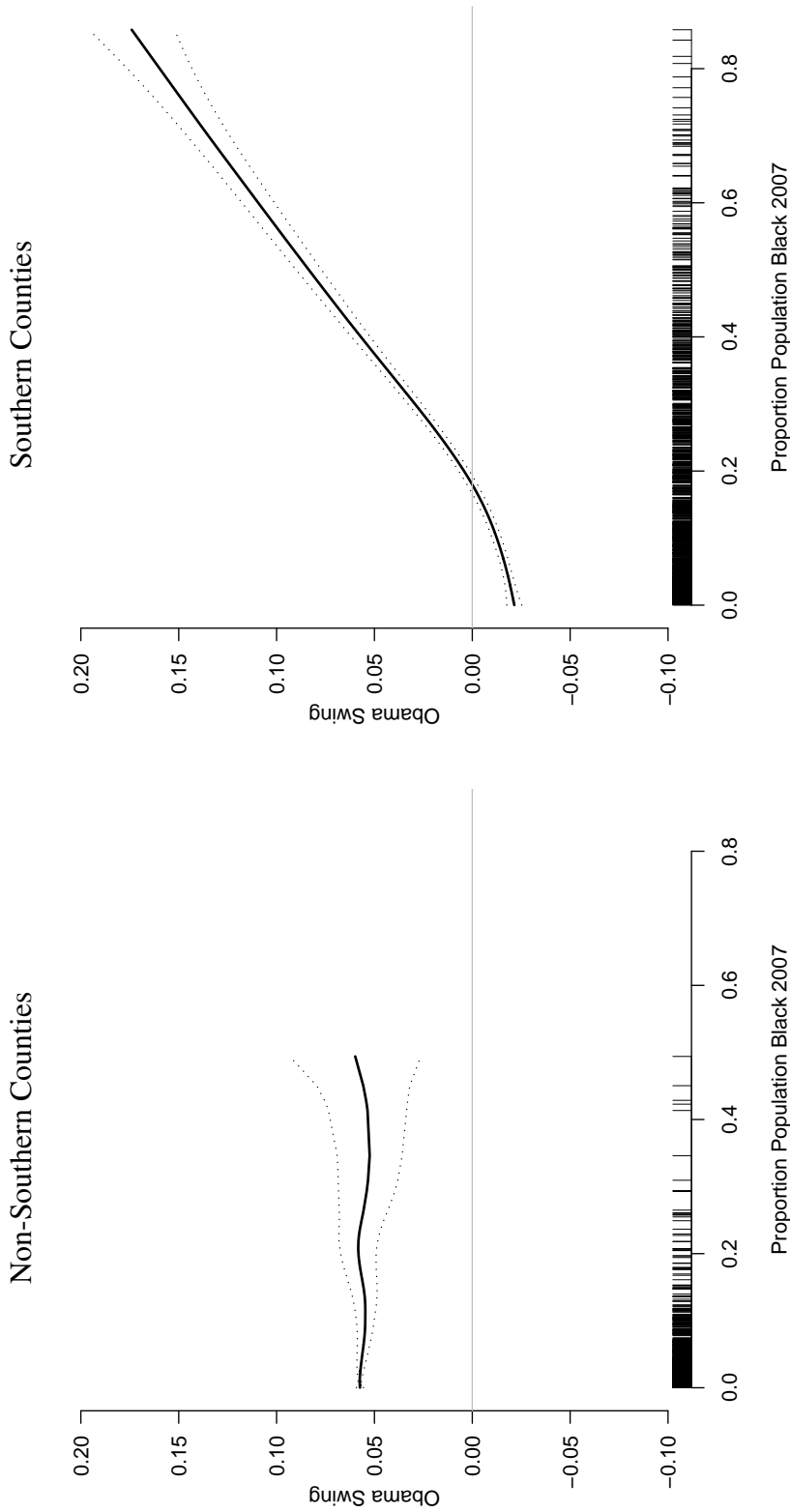
Note: Depicts the product of mortgage delinquency rate times one hundred and the natural logarithm of wages per capita by county. Counties are shaded in proportion to their interaction values: dark colors are associated with larger interactions.

Figure 6: Marginal Effect of Mortgage Delinquency on Obama Vote Share



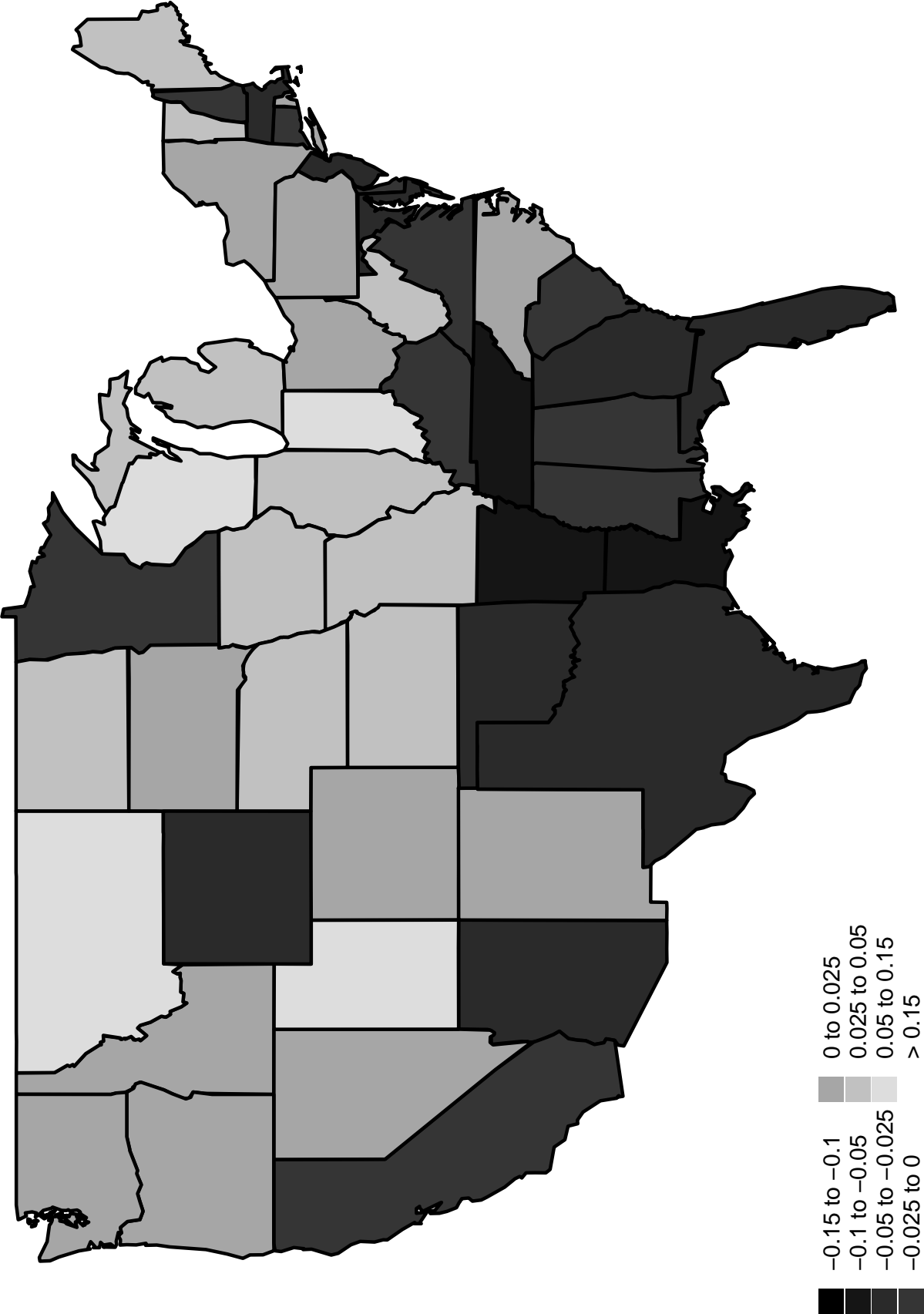
Note: Depicts the estimated marginal effect of a county's mortgage delinquency rate as a function of county-level wages per capita. The dashed line depicts a 95% confidence interval. Based on estimates in Table 1 as well as the estimated covariance (not shown in Table 1) between the mortgage delinquency and mortgage/wage interaction estimates.

Figure 7: Spline-Estimated Effects of Proportion Black on Obama Share



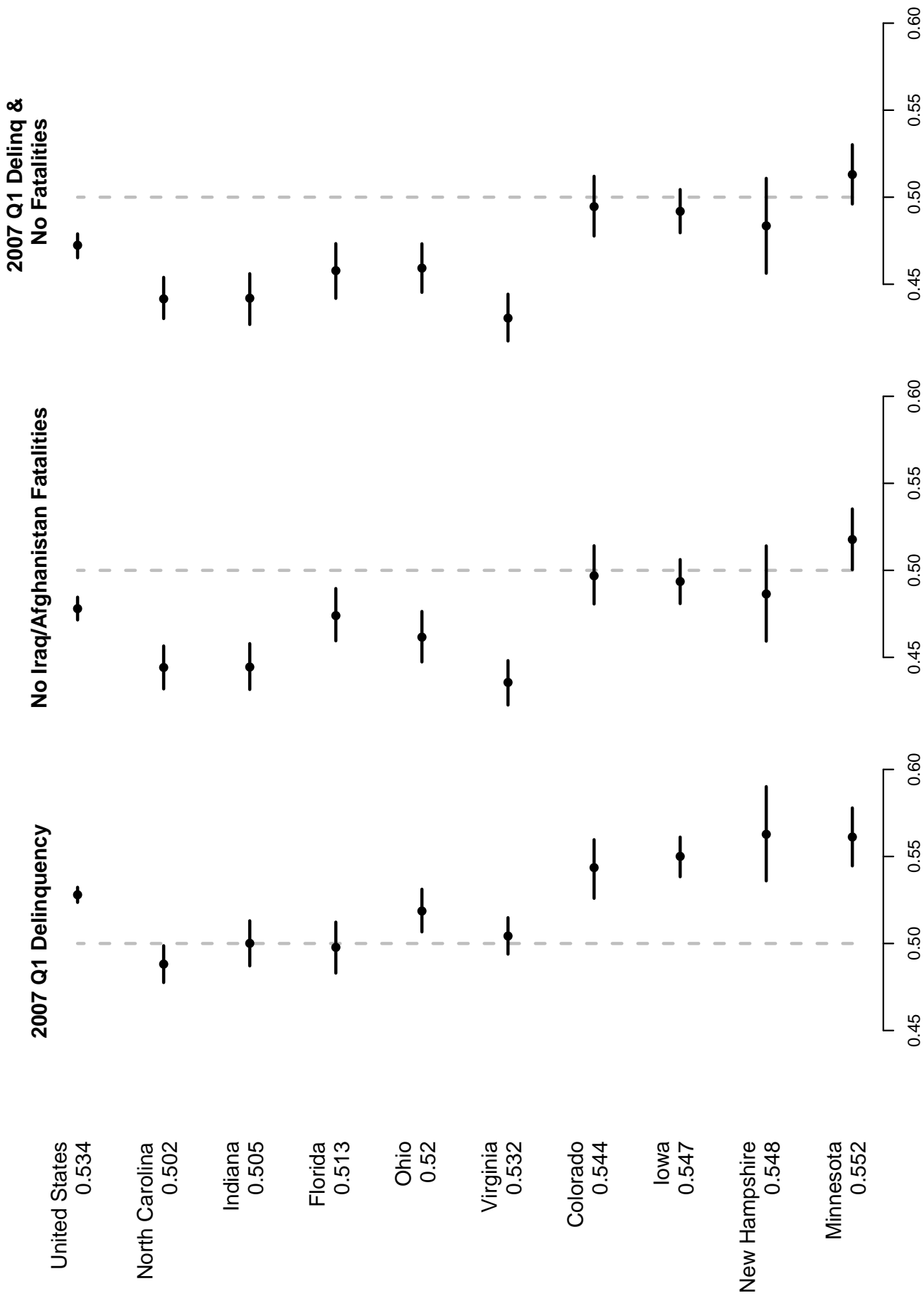
Note: Depicts semi-parametric spline estimates of expected Obama swing as a function of the proportion black in Southern and non-Southern counties. Estimation detail are given in the text. Dashed lines are 95 percent confidence intervals. The hash marks (also called rugs) at the bottom of each panel show the distribution of Proportion Black across counties in each region. The vertical axes are scaled so that the Obama swing at proportion black equals zero (left end point of each line) is equal to the actual 2008 Obama county swing for all counties with population black less than one percent in each region, Southern and non-Southern. In the South an all-white county swung to McCain by about two points, while in the non-South an all-white county swung to Obama by more than five points.

Figure 8: Estimated State Random Effects



Note: Effects estimated from hierarchical model of Table 1.

Figure 9: Counterfactual Obama Shares With No Mortgage Meltdown and No War Fatalities



Note: Point estimates and 95 percent confidence intervals derived from 1,000 bootstrap stratified re-sampled iterations of the hierarchical model in Table 1, fitted to original data disturbed by counterfactual values, ceteris paribus. Actual Obama two-party vote shares are listed in the first column below each geographic entity.