Voting and Political Participation in the Aftermath of the HIV/AIDS Epidemic*

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Abstract

This study examines the effect of the HIV/AIDS epidemic and the public health response to it on political behaviors. Using data on elections to the U.S. House of Representatives and leveraging cross-district variation in HIV/AIDS mortality during the period 1983-1987, we find that, beginning with the early 1990s, exposure to HIV/AIDS mortality increased the vote share, voter turnout, and contributions made to Democratic candidates. The increased support for Democrats is larger in competitive districts. The results are consistent with HIV/AIDS mortality impacting cultural attitudes and leading to broader and persistent changes in voting patterns and political participation.

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1. Introduction

On June 5, 1981, the first scientific account of what would become known as human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) was published by the Centers for Disease Control and Prevention (1981). Over the next few years, HIV/AIDS spread quickly through the gay communities of major American cities. By the end of 1984, HIV had been identified as the cause of AIDS (Gallo and Montagnier 2003) and the official U.S. death count had climbed past 16,000 by the end of 1987 (Francis 2012). Today, about 1.1 million Americans live with HIV and approximately 38,000 new infections occur every year.[1]

At its outset, the HIV/AIDS epidemic was largely confined to the gay community and there is no evidence that it generated a widespread concern. In fact, during most of the 1980s, public opinion did not consider the fight against AIDS a top priority and was sharply divided on how best to combat it (Singer, Rogers, and Glassman 1991; Rogers, Singer, and Imperio 1993).[2] This, in turn, complicated and delayed the federal public health response to it (Shilts 1987; Francis 2012).[3] It was not until October of 1988, more than 7 years after the start of the epidemic, that Congress passed the Health Omnibus Program Extension (HOPE) Act, described as the "first comprehensive effort to combat the AIDS epidemic" (Molotsky 1988).

As HIV/AIDS spread across U.S. cities and their suburbs, however, it went from being a disease that could easily be labeled "the gay plague" to one that affected a much broader demographic mix, including blood transfusion recipients, hemophiliacs, as well as intravenous

[1]Statistics retrieved from the Department of Health and Human Services (`https://www.hiv.gov/hiv-basics/overview/data-and-trends/statistics`).

[2]For instance, one poll conducted before the 1988 elections found that 49 percent of Americans were in favor of mandatory testing for members of high-risk groups, a policy endorsed by conservatives in Congress, and 47 percent of Americans were against it (Steinbrook 1987). The same poll, conducted by the *Los Angeles Times*, also found that 68 percent of Americans were in favor of criminal sanctions against people with AIDS who remained sexually active, and 29 percent were in favor of tattooing anyone who was HIV-positive (Steinbrook 1987).

[3]President Reagan described AIDS research as a "top priority" at a press conference held on September 17, 1985. It was the first time Reagan had publicly mentioned AIDS (Boffey 1985).

drug users and their partners (Selik, Haverkos, and Curran 1984; Shaw 1987).[4] As media coverage of the epidemic and the fight against HIV/AIDS intensified in the late 1980s (McCoy and Khoury 1990; Burd 1993), Americans came to view AIDS as the most urgent public health problem facing the country (Shaw 1987; Blendon and Donelan 1989; Moore 1997; McCarthy 2019; Padamsee 2018).[5]

This paper examines whether the HIV/AIDS epidemic and the public health response to it impacted the cultural attitudes and political behaviors of Americans, as measured by their voting patterns and political participation. This is important because the link between HIV/AIDS and homosexuality, its evolving impact on the wider population, and the dynamics of the policy response to it, provide a unique opportunity to study whether a public health shock impacting historically marginalized groups can shift cultural attitudes, and how it may have contributed to the increased support for culturally liberal causes in the past 30 years (Nelkin, Willin, and Parris 1991; Brier 2009).

Specifically, we use data at the congressional district level to estimate the effects of the HIV/AIDS epidemic on voter turnout, vote share, and campaign contributions received by Democratic and Republican candidates to the U.S House of Representatives during the period 1988-2000. In order to distinguish the impact of the HIV/AIDS epidemic from other factors and secular trends, we leverage cross-district variation in HIV/AIDS mortality during what we characterize as the "treatment period," 1983-1987.[6] Intuitively, our identification strategy compares the evolution of political outcomes over time in districts that bore the brunt of the epidemic to those that were relatively unscathed.[7] Higher exposure to HIV/AIDS mortality

[4]By 1988, heterosexual men accounted for more than a quarter of new cases and women accounted for 10 percent of new cases (Ellerbrock et al. 1991); fully 8 percent of AIDS patients lived in the suburbs or a Standard Metropolitan Statistical Area (SMSA) with fewer than 250,000 residents (Selik, Haverkos, and Curran 1984).

[5]The first major political organization against AIDS gained nationwide attention in the beginning of 1987 when the AIDS Coalition to Unleash Power (ACT UP) organized rallies and protests across the country Brodie et al. (2004). The number of news stories about HIV/AIDS in the U.S. media increased sharply after 1984, peaking at over 5,000 stories in 1987.

[6]As we show below, the results are robust to using alternative treatment windows, including using cross-district HIV/AIDS mortality in 1988.

[7]It is important to note that this identification strategy is not designed to gauge nation-wide shifts in attitudes or opinions. Such shifts will be captured by election-year fixed effects. Instead, our interest is in

rates across electoral districts may have impacted political behaviors and perceptions of the public health response to it through several channels, such as increased local media coverage, greater exposure to political rallies and protests by activist groups, and through increased contact with people, friends, or family members who have been impacted by the epidemic.

Our results suggest that the HIV/AIDS epidemic had limited influence on election outcomes in 1988 and 1990. However, by the early 1990s, we find that the HIV/AIDS epidemic increased vote share received by Democratic candidates, Democratic voter turnout, and campaign contributions made to Democratic candidates. As a consequence, Democratic candidates running in congressional districts that bore the brunt of the HIV/AIDS epidemic experienced a significant increase in their probability of winning. These results point to a greater responsiveness in voting behavior to the substantial national shift in public opinion about the perceived risks of the epidemic, perceptions about the public health response to it, and greater exposure to "gay issues" in politics and the media in places that had more intense exposure to HIV/AIDS (Walters 2003, p. 34).

Although we find that voting outcomes in the pre-treatment period were not systematically related to HIV/AIDS mortality rates, one concern about our research design is that exposure to the epidemic is correlated with increased support for Democratic candidates that would have occurred for other reasons. In fact, the 1994 Congressional elections marked one of the largest shifts in partisan voting patterns in the U.S., gaining the Republican party a net of 54 seats in the House of Representatives and ending 40 years of Democratic control (Jacobson 1996; Stonecash and Mariani 2000). To rule out the possibility that our estimates simply reflect changes in support for candidates in Democratic strongholds that would have happened absent the epidemic, we estimate the effect of the HIV/AIDS mortality on a subset of districts that we define as competitive in 1980.[8] Reassuringly, we find that the benefits to Democratic candidates in competitive districts are larger in magnitude

whether the outcomes under study were impacted by the local intensity of the HIV/AIDS epidemic.

[8]Competitive districts are define as those in which the Democratic and Republican candidates were separated by fewer than 10 percentage points in 1980.

compared to the full sample estimates and appear as early as 1992. This indicates that the results are not being identified solely from Democratic strongholds, and suggests that Democrats would have suffered an even *bigger loss* in 1994 absent the HIV/AIDS epidemic. The results are also robust to controlling for urbanicity-by-year fixed effects and to excluding congressional districts with low HIV/AIDS exposure. Moreover, the results are robust to top-coding the HIV/AIDS mortality rates at the 95^{th} percentile and using alternative measures of HIV/AIDS to account for possible misclassifications in the cause of death. We also conduct a placebo test by using mortality rates from cardiovascular disease and reassuringly show that it has no relationship to voting patterns.

We contribute to the literature in several ways. First, this study provides evidence that the HIV/AIDS epidemic led to a broad and long-lasting shift in voting patterns and political participation in the U.S., potentially impacting the rapid acceptance of Lesbian, Gay, Bisexual and Transgender (LGBT) people into public life and to advancing legislation related to their civil rights. Although the HIV/AIDS epidemic is believed to have had profound (and ongoing) socioeconomic effects in the United States (Nelkin, Willin, and Parris 1991; Timmons and Fesko 2004; Law et al. 2007; Rushing 2018), studies using U.S. data have generally focused on the impact of HIV/AIDS on sexual behaviors (Catania et al. 1991; Ahituv, Holtz, and Philipson 1996; Spencer 2020), and no study has empirically documented its effects on political attitudes.[9]

Second, we contribute to the literature showing that exposure to underrepresented and marginalized groups can reduce bias. For instance, Beaman et al. (2009) provided evidence that exposure to female leaders assigned through gender quotas impacted voters attitudes and the perceptions about the role and effectiveness of female politicians, and Boisjoly et al. (2006) found that randomly assigning an African American roommate in college changed white students' support for affirmative action. More closely related to our findings, the

[9]A large number of studies estimate the effects of HIV/AIDS on economic growth and development in Africa. See Dixon, McDonald, and Roberts (2002) for a review of this literature. Fortson (2009; 2011), Chicoine (2012), Oster (2012), Chin (2013), Karlsson and Pichler (2015), and Chin and Wilson (2018) provide additional evidence that HIV/AIDS in Africa has influenced a wide variety of socioeconomic outcomes.

results in Fernández, Parsa, and Viarengo (2019) indicate that greater exposure to gay people contributed to the dramatic increase in support for same-sex relations over the past 30 years. Our results complement these studies by showing that exposure to the HIV/AIDS epidemic, which raised the visibility of the gay community, did not only change public opinion towards same-sex relations but also led to a persistent shift in political behaviors.

More broadly, the paper also contributes to the literature which studies the determinants of voting and policy preferences (Rees et al. 1962; Fair 1978; Peltzman 1987; Wolfers 2002; Brunner, Ross, and Washington 2011; Charles and Stephens 2013). For instance, Brunner, Ross, and Washington (2011) found that improved employment prospects in California decreased support for redistributive policies, indicating that voters are self-interested, while also increasing support for conservative non-economic issues. More recently, Autor et al. (2020) found that higher exposure to Chinese imports increased ideological polarization leading to changes in political preferences, and Choi et al. (2021) found that counties which historically voted Democratic increased their support for the Republican party in response to the passage of the 1994 North American Free Trade Agreement.[10] While most of these studies estimate the contribution of economic factors that increased support for conservative causes and right-wing parties, our results show that non-economic shocks, such as the HIV/AIDS epidemic, may have contributed to the rise in support for culturally liberal causes and the party that adopted them.[11]

[10] A large number of previous studies have also examined whether voting outcomes are shaped by a retrospective evaluation of policy responses and their connection to politicians (Key 1966; Fiorina 1981; Ferejohn 1986; Lewis-Beck and Stegmaier 2000; Ashworth 2012; Healy and Malhotra 2013). There is also evidence that international terrorist attacks increase the vote share received by right-wing, nationalistic parties (Berrebi and Klor 2008; Gould and Klor 2010; Kibris 2011; Getmansky and Zeitzoff 2014; Peri, Rees, and Smith 2020). Barone et al. (2016), Halla, Wagner, and Zweimüller (2017), and Mayda, Peri, and Steingress (2018) explore the effects of immigration on election outcomes. Using data from Gallup World Polls (2006-2018), Askoy, Eichengreen, and Saka (2020) document a negative association between exposure to an epidemic as a young adult (ages 18-25) and confidence in political institutions. Other studies have documented the effects of natural disasters on voting outcomes producing mixed evidence as to their impact and persistence over time (Achen and Bartels 2004; Gasper and Reeves 2011; Bechtel and Hainmueller 2011; Ben-Ezra et al. 2013; Stokes 2016; Nakajo, Kobayashi, and Arai 2019; Liao and Junco 2021).

[11] Economic policies have also been shown to impact cultural issues. For instance, Bastian (2020) showed that the introduction of the Earned Income Tax Credit changed attitudes towards working mothers and increased their participation in the labor market.

Lastly, the paper contributes to a small but growing literature that has examined the impact of pandemics on election outcomes. For instance, Baccini, Brodeur, and Weymouth (2021) found that the vote share received by Donald Trump was lower in counties more exposed to COVID-19; and Gutierrez, Meriläinen, and Rubli (2020) found a negative association between the local magnitude of the H1N1 outbreak in Mexico and the 2009 congressional vote share received by the governing party. There is also evidence that higher exposure to flu mortality in 1918 had a small negative impact on the vote share received by incumbent politicians in the 1920 elections (Abad and Maurer 2021). Fear from health outbreaks, even in the absence infections or mortality, has also been shown to hurt incumbent politicians. For instance, Campante, Depetris-Chauvin, and Durante (2020) found a strong, negative association between Ebola concerns and Democratic vote share in the 2014 congressional and gubernatorial elections.[12] The public health responses to the 1918 flu pandemic, the H1N1, and the Ebola outbreaks were swift and they were contained in a relatively short period (Bell et al. 2016; Gutierrez, Meriläinen, and Rubli 2020). As a result, the political repercussions of these health emergencies were short-lived and did not produce permanent shifts in voting preferences or cultural attitudes. By contrast, mortality from the HIV/AIDS epidemic continued to increase rapidly throughout the 1980s and early 1990s and the two political parties sharply disagreed on how to fight it. Consequently, the epidemic led to a long-term change in political preferences and arguably impacted the passage of other laws and policies which advanced gay related issues.

2. The Politics of HIV/AIDS

The public health response to HIV/AIDS was consistently characterized as underfunded and lacking in urgency (Shilts 1987; Brier 2009; Francis 2012).[13] Figure 1 details key public

[12]Maffioli (2021) found that the Liberian government allocated more relief resources to combat the Ebola outbreak in 2014 to electoral swing villages.

[13]During the early 1980s, local AIDS service organizations (ASOs), including the Gay Men's Health Crisis in New York City, the AIDS Project Los Angeles, and the San Francisco AIDS Foundation provided a range of health, counseling, and legal services for people with HIV/AIDS. In addition, ASOs actively promoted

health interventions and other important events in the fight against HIV/AIDS during the 1980s and early 1990s.

The first large-scale federal response to the epidemic occurred in December 1987 when, despite fierce objections by members of the Reagan administration, Congress tasked the CDC with developing and distributing an educational brochure about HIV/AIDS (Boodman 1988). The brochure, titled "Understanding AIDS," explicitly discussed the risks of anal sex and encouraged the use of condoms (Boodman 1988), while conservative advisers to the president such as Gary Bauer and William Bennett, argued that the government should be encouraging abstinence and heterosexual marriage instead of "safe sex" practices (Brier 2009). The HOPE Act, which passed in October of 1988, established the Office of AIDS Research at the National Institutes of Health (NIH) and authorized the use of approximately $800 million per year for AIDS education, home health care, research, and testing (Molotsky 1988; Banks 1989). In August of 1990, Congress passed The Ryan White CARE Act. The Act provided emergency assistance to communities most affected by the epidemic and funded outpatient care for uninsured and underinsured HIV/AIDS patients (Buchanan 2002; Siplon 2002, p. 97).[14] Nonetheless, public opinion polls conducted throughout the 1990s show that Americans continued to rank HIV/AIDS as the most urgent health problem facing the country (McCarthy 2019), and expressed dissatisfaction with the federal response of the Reagan and Bush administrations (Blendon, Donelan, and Knox 1992).

Although HIV/AIDS is likely to have impacted the political participation and voting behaviors of LGBT people, the impact of AIDS mobilization was not confined to the gay community. In December 1984, Ryan White, a 13 year old teenager from Indiana who was a hemophiliac who contracted HIV from a contaminated blood transfusion. He gained national media attention after he was refused to be re-admitted to school. His struggle, along with announcements of other prominent HIV-infected people such as "Magic" Johnson and

"safe sex" practices and pushed local officials to support AIDS awareness, research, and treatment (Altman 1985; Panem 1987; Kirp and Bayer 1993; Brier 2009).

[14]In a recent study, Dillender (2021) estimates that the Ryan White CARE Act saved about 60,000 lives through 2018.

Arthur Ash are said to have changed American attitudes towards HIV/AIDS and impacted their health behaviors (Noland et al. 2009; Pollock III 1994; Spencer 2020; Cardazzi, Martin, and Rodriguez 2020). In 1993, more than one million people marched to Washington D.C. raising the visibility and demands of the LGBT movement. Using data from the General Social Survey (GSS) from the period 1973-2002, Fernández, Parsa, and Viarengo (2019) documented a substantial shift in public opinion in 1992, the year in which "gay issues" became more visible in politics (Walters 2003, p. 34). Specifically, they found that states hardest-hit by the epidemic (as measured by the cumulative HIV/AIDS mortality rate through 1992) experienced the largest increases in approval of same-sex relations.

The emergence of the gay community as a political group and the changing public opinion towards same-sex relations arguably led the Democratic presidential candidate, Governor Clinton, to embrace the agenda of AIDS activists and advocate on their behalf.[15] Although Republicans attacked then Governor Clinton as a supporter of homosexual rights and homosexual marriage (Schmalz 1992), there was little appetite within the party for cutting Ryan White funding.[16] These debates served to highlight long-standing differences in how the two parties engaged with social issues and are important for explaining the relationship between exposure to HIV/AIDS and voting preferences. (Carmines and Stimson 1981; 1989; Adams 1997; Dowland 1989).

[15]The 1992 Democratic platform pledged to "provide targeted and honest prevention campaigns; combat HIV-related discrimination; make drug treatment available for all addicts who seek it; guarantee access to quality care; expand clinical trials for treatments and vaccines; and speed up the FDA drug approval process." (The American Presidency Project: https://www.presidency.ucsb.edu/documents/1992-democratic-party-platform).

[16]The 1992 Republican platform stated that "[w]e have committed enormous resources - $4.2 billion over the past four years for research alone, more than for any disease except cancer." It also emphasized the role of "personal responsibility" and rejected "the notion that the distribution of clean needles and condoms are the solution to stopping the spread of AIDS." (The American Presidency Project: https://www.presidency.ucsb.edu/documents/republican-party-platform-1992).

3. Data

3.1. HIV/AIDS Mortality

Information on deaths attributable to HIV/AIDS comes from the National Vital Statistics System (NVSS), made available by the National Center for Health Statistics. Among other data, the NVSS contain mortality counts by cause at the county level. We aggregated HIV/AIDS deaths to the congressional district level after adjusting for decadal shifts in both county and district boundaries using a standard areal interpolation procedure.[17]

At the start of the epidemic, physicians and medical examiners attributed HIV/AIDS deaths to a wide variety of causes (including immune disorders, pneumonia and skin cancer), making it impossible to obtain accurate counts (Kristal 1985). In early 1983, the ICD-9 code 279.1 ("deficiency of cell-mediated immunity") was adopted for HIV/AIDS deaths.[18] Although the use of other ICD codes on death certificates was not completely eliminated, HIV/AIDS death counts became much more accurate with this designation (Chu et al. 1993). In 1987, unique ICD-9 codes (042-044) and new assignment procedures were adopted for HIV/AIDS deaths (Chu et al. 1993).

We measure the intensity of the HIV/AIDS epidemic as:

$$HIV/AIDS\ Mortality\ Rate_i^{1983-1987} = \frac{\sum_{t=1983}^{1987} HIV/AID\ Deaths_{it}}{Population_i^{1980}/100,000}, \tag{1}$$

where population of congressional district i comes from the 1980 Census. Although deaths from HIV/AIDS continued to rise throughout the early 1990s, we focus on this treatment win-

[17]Specifically, we constructed crosswalk weights based on the overlap between counties and congressional districts. (Congressional shapefiles come from Lewis et al. (2013).) For instance, if half of County A overlapped with District B, then we assigned half of County A's HIV/AIDS deaths to District B. Implicitly, this procedure assumes that HIV/AIDS deaths are uniformly distributed within counties. Crosswalk weights were adjusted to reflect the changing relationship between counties and congressional districts after decadal redistricting. See Markoff and Shapiro (1973) and Goodchild and Lam (1980) for early examples of researchers using this procedure.

[18]ICD-9 codes, which are based on the *International Classification of Diseases* (9th Revision), are used on death certificates to indicate the underlying cause of death.

dow to minimize reverse causality concerns by which election outcomes impacted HIV/AIDS mortality. The results reported below do not appreciably change if the number of HIV/AIDS deaths during the period 1983-1986 are used to gauge the intensity of the epidemic. Likewise, our results are robust to using HIV/AIDS deaths per 100,000 population in 1987 or 1988 as our measure of intensity.

Figure 2 shows HIV/AIDS mortality rates across U.S. congressional districts. These rates are based on equation (1) and use 1982 congressional district boundaries. The typical district (i.e., the median) experienced 4.8 deaths from HIV/AIDS per 100,000 population. This figure, however, masks substantial cross-district variation in HIV/AIDS mortality rates. The interquartile range was 2.5 to 10.4, with New York City, San Francisco and Los Angeles districts experiencing the highest rates.

3.2. The Outcomes

Data on elections to the U.S. House of Representatives during the period 1968-2000 come from records maintained by Congressional Quarterly.[19] These records contain information on votes received by Democratic and Republican candidates as well as votes received by third-party and fringe candidates.[20] We compute the vote share received by the Democratic/Republican House candidate as a percentage of the total votes cast in district i and election year t. Voter turnout is calculated as votes per 100,000 voting-age population.

In addition to voting behavior, we use campaign contributions made to House candidates to examine whether the epidemic affected political engagement. Data on contributions made by individuals (as opposed to corporations) come from the Database on Ideology, Money in Politics, and Elections (Bonica 2016) and cover the period 1979-2000. For each contribution, we observe the specific date upon which it was transacted, the amount of the transaction, the donor type, and the party of the receiving candidate. Contributions are measured in

[19]We end our analysis at the 2000 elections to mitigate concerns related to redistricting, which became more severe as measured by (non)-compactness (Ansolabehere and Palmer 2016).

[20]We combine non-Democratic and non-Republican votes for the sake of simplicity.

1980 dollars per 100,000 voting-age population. Following our voting outcomes, we aggregate individual contributions to the district-year level.

4. Methods

To explore the political ramifications of the HIV/AIDS epidemic, we leverage cross-district HIV/AIDS mortality during the treatment period, 1983-1987. Our pre- and post-treatment periods depend upon the outcome under consideration:

$$\underbrace{[1968,\ 1982]}_{\text{Pre-treatment period}} \cup \underbrace{[1988,\ 2000]}_{\text{Post-treatment period}} \quad \text{for voting behavior, and}$$

$$\underbrace{[1979,\ 1982]}_{\text{Pre-treatment period}} \cup \underbrace{[1988,\ 2000]}_{\text{Post-treatment period}} \quad \text{for campaign contributions.}$$

We begin by estimating difference-in-differences (DiD) regressions of the following form using ordinary least squares (OLS):

$$Y_{it} = \alpha_0 + \alpha_1 HIV/AIDS\ Mortality\ Rate_i^{1983-1987} \times \mathbf{1}[t \geq 1988] + \gamma_i + \delta_t + \varepsilon_{it}, \tag{2}$$

where Y_{it} measures voting behavior or campaign contributions for district i and year t.[21] Congressional district fixed effects, γ_i, control for time-invariant factors at the district level and year fixed effects, represented by δ_t, capture nation-wide shifts in attitudes and opinions. Our coefficient of interest is α_1, which measures the effect of an additional HIV/AIDS death per 100,000 population during the treatment period, 1983-1987, on the outcome, Y_{it}.

We explore the dynamic effects of the HIV/AIDS epidemic by estimating event-study

[21] Although not shown, the HIV/AIDS mortality rate during the treatment period, 1983-1987, uninteracted with post-treatment indicator is also on the right-hand side of (2). The uninteracted 1983-1987 HIV/AIDS mortality rate is not perfectly collinear with the district fixed effects, γ_i, because of redistricting every 10 years. With its inclusion on the right-hand side of (2), α_1 is relative to the pre-treatment relationship between Y_{it} and the 1983-1987 HIV/AIDS mortality rate. In a robustness check below, we show that our results are qualitatively similar if we use a fixed 1983-1987 HIV/AIDS mortality rate based on the 1982 congressional district boundaries.

regressions of the following form:

$$Y_{it} = HIV/AIDS\ Mortality\ Rate_i^{1983-1987}\left[\sum_{k=a}^{b}\pi_k \mathbf{1}[t=k] + \sum_{k=1988}^{2000}\beta_k \mathbf{1}[t=k]\right] + \gamma_i + \delta_t + \epsilon_{it}, \quad (3)$$

where the bounds on k depend on the outcome under consideration and are as follows:

$$k \in \begin{cases} a = 1968,\ b = 1980 & \text{for voting behavior, and} \\ a = 1979,\ b = 1981 & \text{for campaign contributions.} \end{cases}$$

The π_k capture the association between Y_{it} and the 1983-1987 HIV/AIDS mortality rate during the pre-treatment period. If the parallel trends assumption holds, the estimates of π_k should be close to zero and statistically insignificant. The β_k trace out the effects of the epidemic in the post-treatment period. The interaction between the 1983-1987 HIV/AIDS mortality rate and the 1982 indicator is omitted.[22] All of our regressions are weighted using the decadal voting-age population and the standard errors are corrected for clustering at the congressional district level.

5. Results

Difference-in-differences (DiD) estimates of the effects of HIV/AIDS mortality on election outcomes are reported in Panels A-D of Figure 3 and Panel A of Appendix Table 1. A one-unit increase in the HIV/AIDS mortality rate led to a .081 percentage point increase in the vote share received by Democratic candidates. It also increased Democratic voter turnout by 45 votes per 100,000 voting-age population. Although not statistically significant at conventional levels, a one-unit increase in the HIV/AIDS mortality rate led to a .058 decrease in the vote share received by Republican candidates and 5 fewer Republican votes

[22] Although not shown, the uninteracted 1983-1987 HIV/AIDS mortality rate is on the right-hand side of (3). With its inclusion, π and β are relative to the relationship between Y_{it} and the 1983-1987 HIV/AIDS mortality rate in 1982.

per 100,000 voting-age population.[23]

The median congressional district experienced an HIV/AIDS mortality rate of 4.8. We estimate that the vote share of a Democrat running in this district increased by less than half a percentage point ($4.8 \times .081 = .389$), which would have changed the outcome of very few elections. It is, however, important to note that many congressional districts experienced HIV/AIDS mortality rates much higher than the median, and, as a consequence, the DiD estimates for these districts are arguably quite substantial. For instance, Georgia's 5th Congressional District, which encompasses much of Atlanta, experienced an HIV/AIDS mortality rate of 34.4. We estimate that the epidemic yielded an almost three percentage point increase in the vote share received by Democratic candidates in this district ($34.4 \times .081 = 2.79$).[24]

Event-study estimates are reported in Figure 3 and Panel B of Appendix Table 1. The estimates of π from equation (3) are, with only a few exceptions, small and statistically indistinguishable from zero. Consistent with the parallel trends assumption, we do not find evidence that voting behavior was trending differently in districts that would, during the treatment period, bear the brunt of the epidemic as compared to districts that would experience relatively few HIV/AIDS deaths. Likewise, the estimates of β are small and statistically insignificant at conventional levels in the 1988-1992 elections.

The estimated impact of HIV/AIDS mortality on voting behavior becomes notably stronger after the 1994 election.[25] By the 2000 election, all of the $\hat{\beta}$s are statistically distinguishable from zero. A one-unit increase in the HIV/AIDS mortality rate increased the vote share received by the Democratic candidate by a .202 percentage point, decreased the vote share received by the Republican candidate by a .168 percentage point, increased Demo-

[23]There is little evidence that HIV/AIDS mortality rate is related to the vote share or voter turnout received by third-party candidates. These results are available upon request.

[24]To take another example, Louisiana's 1st Congressional District experienced an HIV/AIDS mortality rate of 27, which suggests that the Democratic vote share increased by 2.2 percentage points.

[25]In 1994, a one-unit increase in the HIV/AIDS mortality rate led to a .137 percentage point increase in the vote share received by the Democratic candidate, a .122 percentage point decrease in the vote share received by the Republican candidate, and 80 more votes for the Democratic candidate per 100,000 voting-age population.

cratic voter turnout by 112 more votes (per 100,000 voting-age population) and decreased voter turnout by 104 votes for the Republican candidate. These estimates suggest that the epidemic eventually benefited Democratic candidates at the expense of their Republican counterparts. Moreover, it appears as though this benefit was non-trivial in magnitude. For instance, the vote share going to a Democratic candidate running in the median district had, by the 2000 election, increased by a percentage point ($4.8 \times .202 = 0.97$) as compared to 1982, and this same Democratic candidate received 538 additional votes per 100,000 voting-age population ($4.8 \times 112 = 537.6$).

Although it took several election cycles to manifest, the effects of HIV/AIDS mortality on election outcomes in the mid-1990s are consistent with a mechanism through which greater HIV/AIDS mortality increased public awareness and media coverage of the disease and formed perceptions about the public health response to it. For instance, media coverage of prominent HIV-infected people such as "Magic" Johnson and Arthur Ash are said to have changed American attitudes towards HIV/AIDS, and raised awareness as to the role of the government in handling the epidemic (Noland et al. 2009; Pollock III 1994; Spencer 2020; Cardazzi, Martin, and Rodriguez 2020). Other large political rallies, such as the 1993 march on Washington D.C., increased visibility of the HIV/AIDS epidemic and highlighted the need to increase funding for AIDS education, research, and patient care. Fernández, Parsa, and Viarengo (2019) show that states hardest-hit by the HIV/AIDS epidemic saw a substantial increase in approving same-sex relations in 1992 when "gay issues" became more visible in politics (Walters 2003, p. 34). These shifts in attitudes towards HIV/AIDS and LGBT people may be an important channel through which higher mortality rates from HIV/AIDS benefited Democratic candidates in the ballot box.

The effects of the epidemic documented in Figure 3 can be summarized by examining the effects of HIV/AIDS mortality on the probability of the Democratic candidate to win in election year t and district i. DiD estimates, reported in Figure 4, are small and statistically insignificant. Likewise, the estimates of β, reported in Panel Figure 4 and Appendix Table 2, are statistically insignificant for the 1988-1994 elections. Beginning with the 1996 election, however, the estimates become positive and are distinguishable from zero in a statistical sense. By the 2000 election, a one-unit increase in the HIV/AIDS mortality rate led to a .003 increase in the probability of the Democratic candidate winning. For a Democratic candidate running in the median congressional district, this translates into a .014 increase in the probability of winning ($4.8 \times .003 = .014$). Democrats running in congressional districts that bore the brunt of the epidemic saw their chances of winning increase by considerably more than this.[26]

6. Robustness Checks and Extensions

Table 1 reports the results of various robustness checks. In the first column, we reproduce the DiD estimates reported above. In the next two columns, we show that neither weighting by total population (as opposed to voting-age population) nor correcting the standard errors for clustering at the state (as opposed to the district) level qualitatively changes these estimates. In column (4), we report DiD estimates fixing the intensity of the HIV/AIDS epidemic using the 1982 boundaries of congressional districts. Again, our results are qualitatively unchanged.

We next experiment with using different treatment periods. Specifically, in column (5) we measure the intensity of the epidemic as the total number of HIV/AIDS deaths from 1983-1986, while in column (6) we restrict our attention to HIV/AIDS deaths in 1987, when unique ICD-9 codes and new assignment procedures were adopted (Chu et al. 1993).[27] The

[26] In Appendix Figure 1, we explore the effect of the HIV/AIDS epidemic on votes received by Presidential candidates. DiD estimates show that a one-unit increase in the HIV/AIDS mortality rate led to a .10 percentage point increase in the vote share of the Democratic nominee. The estimated effect on Republican vote share is of equal magnitude but has the opposite sign. By the 2000 presidential election, a one-unit increase in the HIV/AIDS mortality rate increased the Democratic vote share by a .189 percentage point. The DiD estimates also provide evidence that the epidemic eventually increased Democratic, but not Republican, voter turnout.

[27] In Appendix Figure 2 we expand our leave-out period to include 1988 and measure HIV/AIDS mortality using only deaths in this year, finding similar results across all outcomes. This sample excludes Georgia, since counties with few HIV/AIDS deaths are not identified in the data. Moreover, we are unable to expand the treatment period beyond 1988 as only large counties are identified in later years.

DiD estimates continue to show that Democratic candidates benefited from the epidemic at the expense of their Republican counterparts. In column (7), we show DiD estimates top-coding the HIV/AIDS mortality rate at the 95th percentile to address the possibility that a subset of districts with disproportionately high mortality rates are driving our results.[28] The estimates are qualitatively unchanged with this restriction in place.

Although a unique ICD-9 code was designated to HIV/AIDS deaths in 1983, there is evidence that physicians and medical examiners continued to attribute HIV/AIDS to other causes of deaths such as cancer and pneumonia (Kristal 1985; Chu et al. 1993). To assess the impact of this measurement error on the results, we broaden the definition of HIV/AIDS mortality to include deaths from any type of cancer or pneumonia for men aged 20-45.

The results of this exercise are presented in Panels A-D of Appendix Figure 3. Although the DiD estimates are smaller in magnitude, and in some instances are not statistically significant, we continue to find strong evidence that an increase in HIV/AIDS mortality increased the vote share received by Democratic candidates and in Democratic voter turnout. The similarity in the results using alternative measures of HIV/AIDS mortality suggests that misclassifications of HIV/AIDS deaths do not vary systematically across congressional districts.[29]

While the district fixed effects in equation (3) capture unobserved heterogeneity that is time-invariant across districts, they do not account for time-varying unobservables that are correlated with both HIV/AIDS mortality and voting patterns. This concern may be particularly salient given our event study estimates do not show detectable effects until the early to mid 1990s - a period marked by rising crime rates and dramatic welfare reform via the Personal Responsibility and Work Opportunity Reconciliation Act of 1996. In Appendix Figure 4, we partially test whether time-varying unobservables are driving our estimates

[28]The HIV/AIDS mortality rate at the 95th percentile is 41.8. This restriction affects districts in New York, California, Florida, and New Jersey where the epidemic was particularly severe.

[29]If physicians in Republican-leaning districts were more likely to misclassify deaths from HIV/AIDS, the inclusion of cancer and pneumonia deaths in our mortality measure would have biased our estimates towards zero.

and augment equation (3) with 1980s district characteristics interacted with a linear trend. Specifically, we test whether changes in district-level racial composition, educational attainment, or incarceration rates can account for the observed voting patterns.[30] The results are broadly similar to our main estimates, and in some cases, are even stronger when including these interactions.[31] Moreover, we test the robustness of the results by adding a flexible set of urban-by-year fixed effects.[32] These fixed effects non-parametrically account for any differential trends across districts that vary by baseline urbanicity status, effectively limiting our identifying variation to be within district-urbanicity-type. The results in Appendix Figure 5 continue to indicate a positive relationship between HIV/AIDS mortality and electoral outcomes for Democrats and a negative relationship for Republicans.

Recent work from Callaway, Goodman-Bacon, and Sant'Anna (2021) has shown that in continuous difference-in-differences settings, an additional assumption is required to recover a valid causal estimate. In our context, this amounts to assuming that districts would have had the same response to the HIV/AIDS epidemic had they received a different level of exposure or "dose." The urbanicity-by-year fixed effects described above effectively weaken this assumption to holding within district-urbanicity-type. As an additional test of this assumption, we also estimate our main results on a subsample of districts whose mean HIV/AIDS mortality rates were above the 50^{th} or 75^{th} percentile in Appendix Figure 6. Although this reduces our identifying variation considerably, we view this subsample of districts as more likely to have had similar responses had they received a different dose. Reassuringly, although some estimates are imprecise due to smaller samples, we continue to find evidence of increased support for Democratic candidates.

Finally, we conduct a placebo check by replacing the HIV/AIDS mortality rate with

[30] Johnson and Raphael (2009) also find a positive correlation between incarceration rates and AIDS infection rates.

[31] We also test whether differential migration is a potential confounder using our difference-in-differences framework and find that net migration rates at the county-by-decade level are uncorrelated with HIV/AIDS mortality.

[32] Urban status is defined to be one of three levels: urban, non-urban, or rural. We calculate urban status using data from the 1980 Census.

mortality due to cardiovascular diseases, and report the results in Appendix Figure 7. There is no evidence that cardiovascular mortality is systematically related to Democratic or Republican vote shares or voter turnout.

6.1. Effects by Outcomes of Previous Elections

The high HIV/AIDS mortality rates in urban areas, typically considered to be Democratic strongholds, raises the concern that the increased support for Democratic candidates in the early 1990s reflects partisan shifts in voting patterns that would have occurred absent the epidemic.[33]

To address this concern, in Figure 5 and Appendix Table 3, we focus exclusively on competitive districts, defined as those in which the Democratic and Republican candidates were separated by fewer than 10 percentage points in 1980. Just under 17 percent of districts fit this definition. Although the DiD estimates for competitive districts are mostly not statistically significant at conventional levels, the event-study estimates provide evidence that the effects of the epidemic manifested earlier, and were more pronounced, in competitive districts. Specifically, the estimates of β for competitive districts are statistically distinguishable from zero as early as 1992 and are, without exception, larger (in absolute magnitude) than the corresponding full-sample estimates.[34] This analysis indicates that the effects of HIV/AIDS mortality on voting outcomes are not being identified solely from Democratic strongholds, and suggests that Democrats would have suffered an even bigger loss in 1994 absent the HIV/AIDS epidemic.[35]

[33] In the 1994 congressional elections, the Republican party gained a net of 54 seats in the House of Representatives, ending a 40 years of Democratic control (Jacobson 1996). The Republican strategy to nationalize the congressional elections in 1994 continued to influence partisan voting patterns across congressional districts throughout the 1990s (Stonecash and Mariani 2000).

[34] In the 1992 elections, a one-unit increase in the HIV/AIDS mortality rate led to a .004 increase in the probability of the Democratic candidate winning in a competitive districts (Appendix Figure 8 and Panel B of Appendix Table 2). For a Democratic candidate running in the median district, this translates into an almost two percentage-point increase in the chances of winning ($4.8 \times .004 = .019$) as compared to 1982. The increase in the probability of winning persists in the 1996-2000 elections.

[35] We also explore whether the effects of the HIV/AIDS epidemic differed by whether Reagan carried the district in 1980. The results are reported in Appendix Figure 9 and Appendix Tables 4A and 4B. Although, in general, we cannot reject the hypothesis that the effects of the epidemic were the same across these two

6.2. Black vs. White HIV/AIDS Mortality

In the early years of the epidemic, the media reports focused on white, gay men (Quimby and Friedson 1989). HIV/AIDS infection and mortality rates were, however, becoming alarmingly high among African Americans (Bakeman, Lumb, and Smith 1986; Selik, Castro, and Pappaioanou 1988).[36] By 1994, HIV/AIDS was the leading cause of death for black men ages 25-44 and infection rates among African Americans were higher than for any other racial/ethnic group (Cohen 1999, p. 23; Alsan and Wanamaker 2018).[37]

To examine the role of race in shaping the political response to the HIV/AIDS epidemic, we calculated separate HIV/AIDS mortality rates for blacks versus whites and re-estimated equations (2) and (3) with each measure separately on the right-hand side.[38] Race-specific DiD and event-study estimates are reported in Appendix Figure 10 and Appendix Tables 5A and 5B. In general, they provide little evidence that voters responded differently to the race of the victim.

Although the estimated effect of black HIV/AIDS mortality on the Democratic vote share is about 40 percent larger, it is not statistically significant and we cannot reject the hypothesis that these two estimates are equal. Event-study estimates, however, provide evidence that white HIV/AIDS mortality affected voting behavior as early as the 1994 elections. By contrast, the estimated effects of black HIV/AIDS mortality are smaller and less precise until the 1998 elections. This pattern of results is consistent with historical accounts describing the process of mobilizing black politicians and voters around the issue of HIV/AIDS

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types of districts, there is evidence that, beginning in 1994 the effects of the epidemic were more pronounced in districts that Reagan won.

[36] According to an analysis conducted by the CDC in 1988, fully 26 percent of the AIDS patients in the United States were black (Selik, Castro, and Pappaioanou 1988). Our analysis of NVSS data for the period 1983-1987 shows that 30 percent of HIV/AIDS deaths were among black men and women.

[37] Although grass-roots organizations such as The World AIDS Advisory Task Force and the National Coalition of Black Lesbians and Gays focused on addressing the needs of people of color with HIV/AIDS (Brier 2009), political mobilization and advocacy by church leaders and black politicians did not begin until the early 1990s (Shipp and Navarro 1991; Thomas and Quinn 1993). For an excellent history on HIV/AIDS black mobilization see Cohen (1999).

[38] In our data, the correlation between white and black HIV/AIDS deaths is 0.71. This statistic, however, masks substantial geographical variation. For example, blacks accounted for 34 percent of HIV/AIDS deaths in the South, 38 percent in the Northeast, but only 11 percent in the West.

(Shipp and Navarro 1991; Thomas and Quinn 1993; Cohen 1999).

7. Campaign Contributions

In this section, we shift our focus from voting behavior to campaign contributions, a measure of political participation that is not constrained by the timing of the electoral cycle. DiD and event-study estimates reported in Figure 6 and Appendix Table 6 provide evidence that the HIV/AIDS epidemic spurred political participation to the benefit of Democratic candidates. A one-unit increase in the HIV/AIDS mortality rate led to a \$143 increase in contributions to Democratic candidates per 100,000 voting-age population. For a Democrat running in a median district during the treatment period, this translates to an increase of \$686 ($4.8 \times 143 = 686$), or about 5 percent of the sample mean. A one-unit increase in the HIV/AIDS mortality rate also increased contributions to Democratic candidates by 0.52 per 100,000 voting-age population, which for a Democrat running in a median district, this translates to about a 6 percent of the sample mean ($\frac{4.8 \times 0.52}{43.2} = 0.06$). DiD estimates of the impact of HIV/AIDS deaths on contributions to Republican candidates, although positive, are smaller and statistically insignificant.

Event study estimates provide evidence that the effect of the epidemic grew stronger over time. In the 1988 election, the first election in the post-treatment period, a one-unit increase in the HIV/AIDS mortality rate is associated with a \$80 increase in contributions to Democratic candidates per 100,000 voting-age population; 4 years later, it is associated with a (statistically insignificant) \$148 increase in contributions to Democratic candidates; and 4 years after that, it is associated with a (statistically insignificant) \$226 increase in contributions to Democratic candidates. The number of contributions to Democratic candidates also exhibits a similar trend. There is little evidence that the epidemic systematically affected campaign contributions made to Republican candidates.

8. Conclusion

Approximately 1.1 million Americans are currently living with HIV and 38,000 new infections occur every year in the United States. Although HIV/AIDS is acknowledged to have had profound and wide-reaching socioeconomic effects (Nelkin, Willin, and Parris 1991; Timmons and Fesko 2004; Law et al. 2007; Rushing 2018), studies using U.S. data have generally focused on sexual behavior and attitudes towards homosexuals and same-sex relations (Catania et al. 1991; Ahituv, Holtz, and Philipson 1996; Francis 2008; Fernández, Parsa, and Viarengo 2019).

The initial public health response to the HIV/AIDS has been characterized as underfunded and lacking in urgency (Shilts 1987; Brier 2009; Francis 2012). As HIV/AIDS spread across the country and began to affect a broad demographic mix, Americans came to view it as the most urgent health problem facing the country (Moore 1997).

In this paper, we explore the effects of the HIV/AIDS epidemic on voting in elections to the U.S. House of Representatives. Leveraging cross-district variation in HIV/AIDS mortality during the period of 1983-1987, we find consistent evidence that, by the mid-1990s, the epidemic had increased the number of votes received by Democratic candidates and the vote share received by Democratic candidates. In addition, we find that the epidemic increased campaign contributions made to Democratic candidates. Combined, these effects translate into substantial increases in the probability of winning. A back-of-the-envelope calculation that combines our event-study estimates with HIV/AIDS mortality rates suggests that over the period 1994-2000, Democrats won about six more seats per year on average than they would have in the absence of the epidemic, while also strengthening their hold in non-competitive districts.[39]

[39] To perform this calculation, we take the observed Democrat and Republican vote shares and compute the implied counterfactual vote share after multiplying the HIV/AIDS mortality rate and the corresponding point estimate from our event-studies. We then compare the outcomes of elections under this epidemic-absent counterfactual to the observed outcomes in the data to calculate the number of marginal seats that changed between parties.

The findings indicate that once voters became aware of the severity of the HIV/AIDS epidemic in their local areas and the poor public health response that followed, they responded to it at the ballot box. The increased support for the Democratic party is also consistent with greater exposure to the gay community, suggesting that the HIV/AIDS epidemic served as a catalyst for the rapid acceptance of LGBT people into American society.

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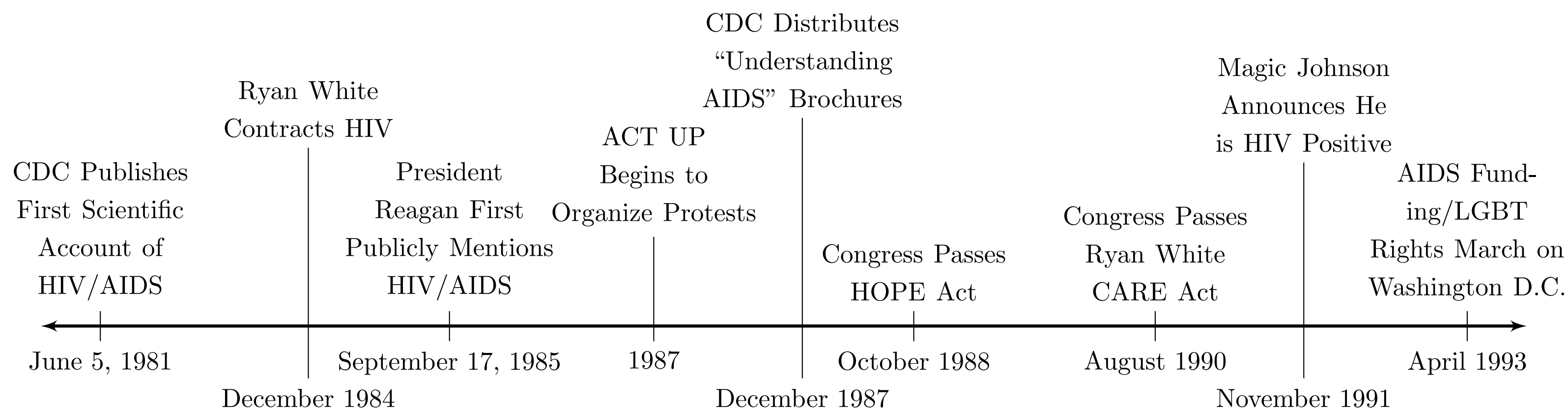
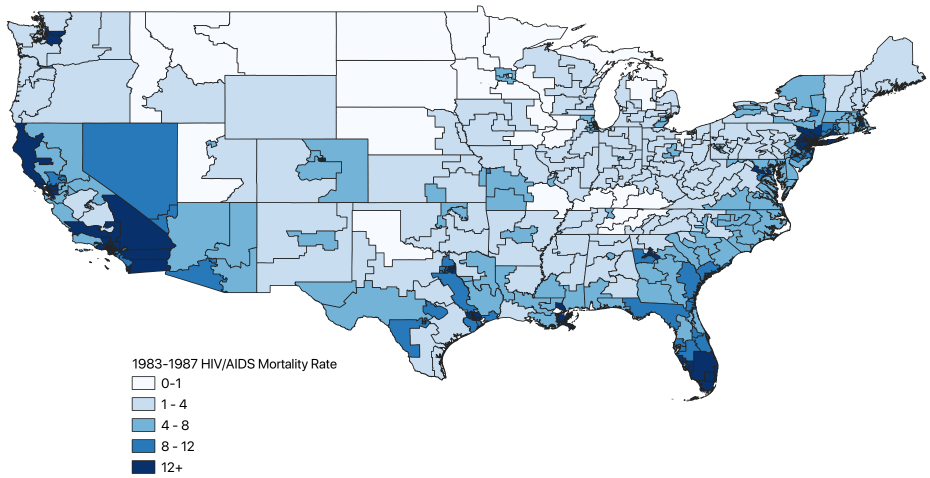
Figure 1: Timeline of Notable HIV/AIDS Epidemic Events and Federal Legislation



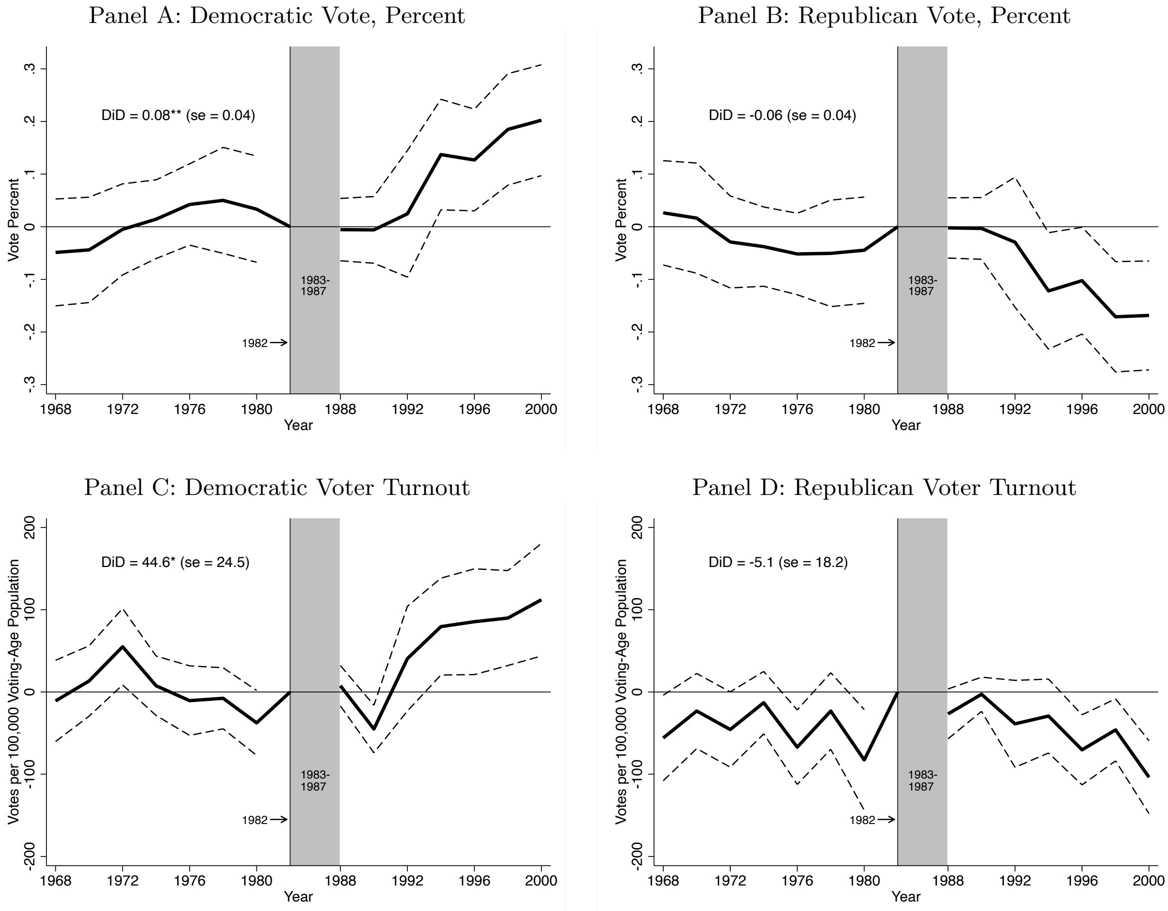
Notes: This figure presents a timeline of notable events during the HIV/AIDS epidemic.

Figure 2: HIV/AIDS Mortality Rate in Congressional Districts



Notes: This figure reports 1983-1987 HIV/AIDS mortality rates per 100,000 population in congressional districts from 1982.

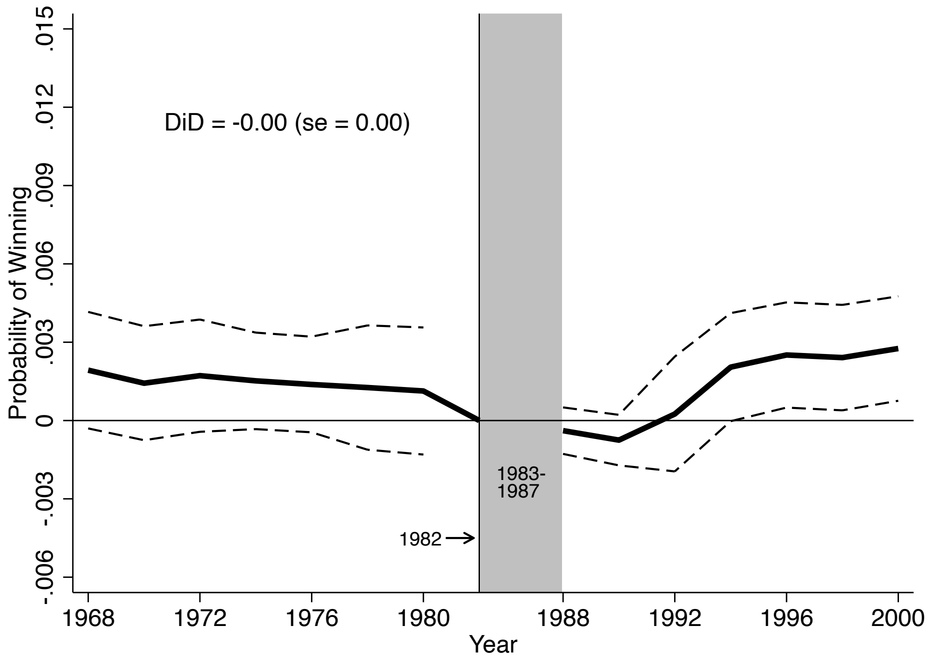
Figure 3: HIV/AIDS Mortality and Voting Behavior



Notes: OLS estimates of π and β from equation (3) weighted by voting-age population are shown. The dependent variable in Panel A is the percent Democratic vote in district i and year t; in Panel B, the dependent variable is the percent Republican vote; in Panel C, the dependent variable is Democratic votes per 100,000 voting-age population; and in Panel D, the dependent variable is Republican votes per 100,000 voting-age population. Panels C and D drop unopposed elections. The vertical line indicates the year 1982 and we exclude data from 1983-1987, indicated by the shaded region. All regressions include congressional district and election year fixed effects. Dashed lines indicate 90 percent confidence intervals based on standard errors corrected for clustering at the congressional district level.

* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

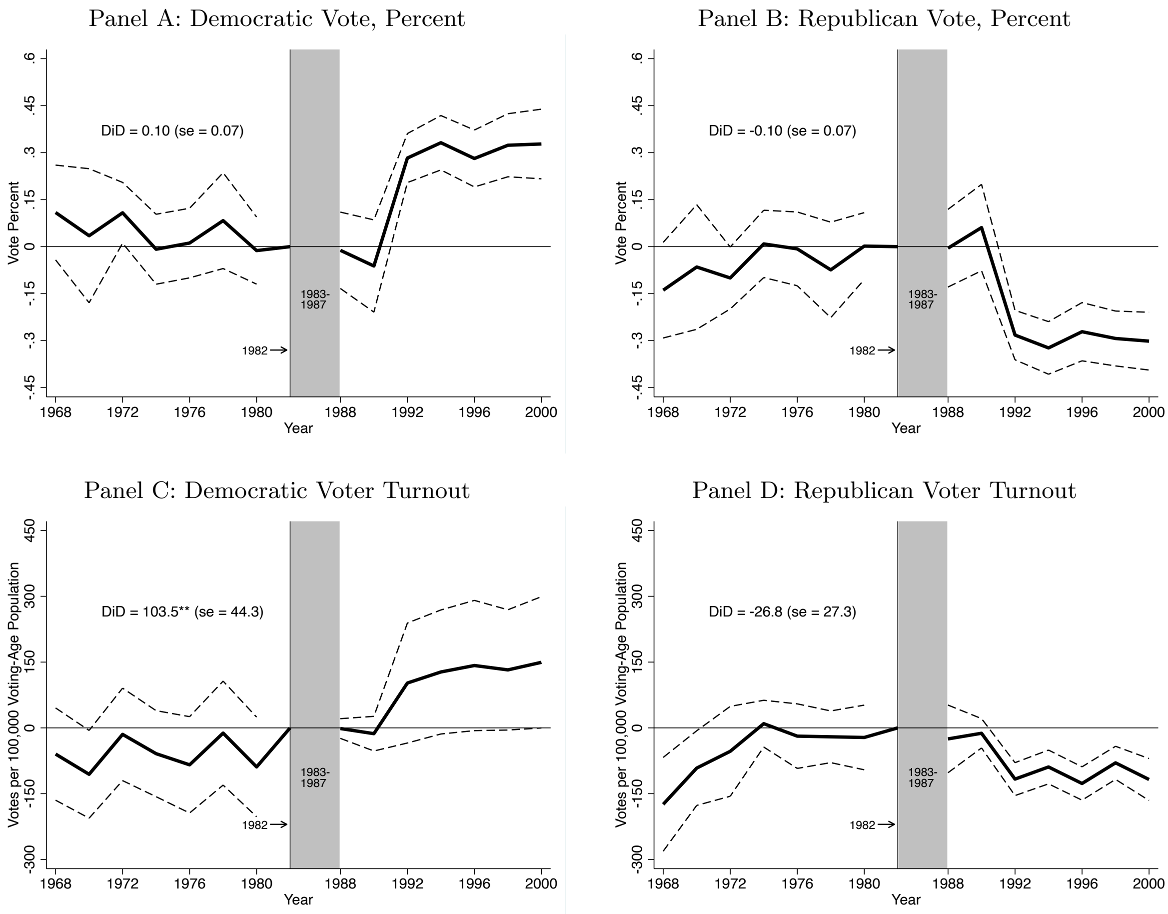
Figure 4: HIV/AIDS Mortality and the Probability of a Democratic Win



Notes: OLS estimates of π and β from equation (3) weighted by voting-age population are shown. The dependent variable is the probability of a Democratic win. The vertical line indicates the year 1982 and we exclude data from 1983-1987, indicated by the shaded region. All regressions include congressional district and election year fixed effects. Dashed lines indicate 90 percent confidence intervals based on standard errors corrected for clustering at the congressional district level.

* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

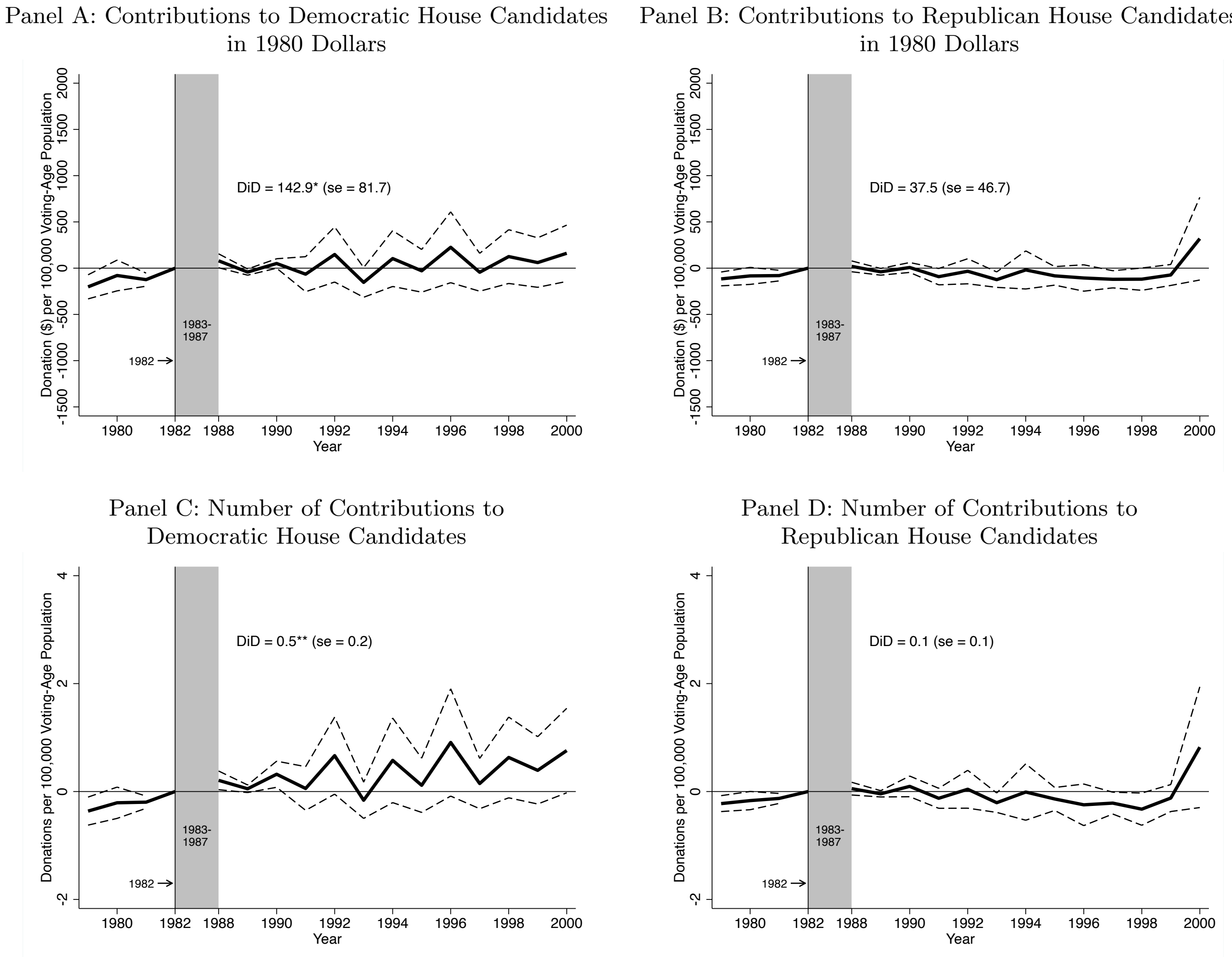
Figure 5: HIV/AIDS Mortality and Voting Behavior in Competitive Districts



Notes: OLS estimates of π and β from equation (3) weighted by voting-age population are shown. The sample is restricted to congressional districts in which the difference between the Democratic and Republican vote share was less than 10 percentage points in 1980. The dependent variable in Panel A is the percent Democratic vote in district i and year t; in Panel B, the dependent variable is the percent Republican vote; in Panel C, the dependent variable is Democratic votes per 100,000 voting-age population; and in Panel D, the dependent variable is Republican votes per 100,000 voting-age population. Panels C and D drop unopposed elections. The vertical line indicates the year 1982 and we exclude data from 1983-1987, indicated by the shaded region. All regressions include congressional district and election year fixed effects. Dashed lines indicate 90 percent confidence intervals based on standard errors corrected for clustering at the congressional district level.

* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

Figure 6: HIV/AIDS Mortality and Campaign Contributions



Notes: OLS estimates of π and β from equation (3) weighted by voting-age population are shown. The dependent variable in Panel A is contributions (in 1980 dollars) to Democratic House candidates per 100,000 voting-age population in district i and year t; in Panel B, the dependent variable is contributions (in 1980 dollars) to Republican House candidates per 100,000 voting-age population; in Panel C, the dependent variable is the number of contributions to Democratic House candidates per 100,000 voting-age population; and in Panel D, the dependent variable is the number of contributions to Republican House candidates per 100,000 voting-age population. The vertical line indicates the year 1982 and we exclude data from 1983-1987, indicated by the shaded region. All regressions include congressional district and year fixed effects. Dashed lines indicate 90 percent confidence intervals based on standard errors corrected for clustering at the congressional district level.

* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

Table 1: Robustness Checks

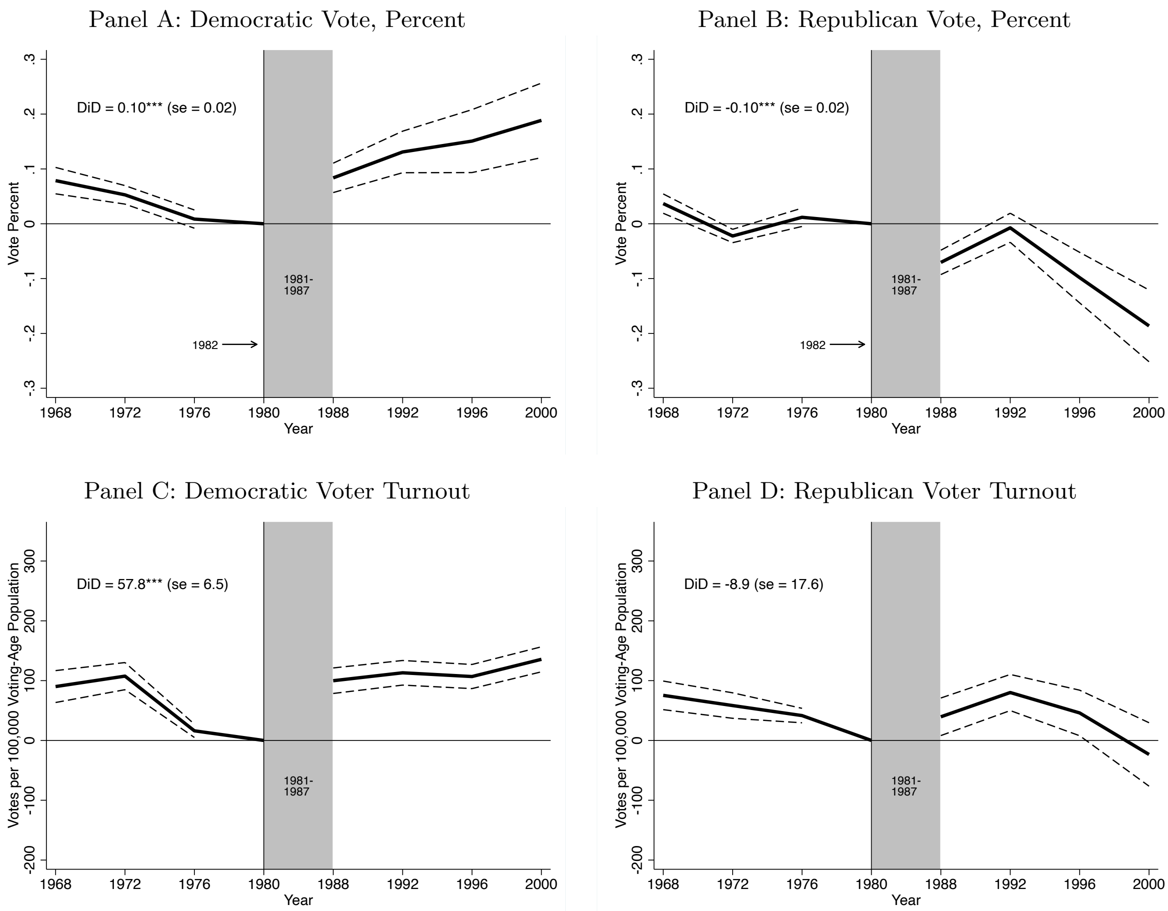
	Baseline Estimate	Weight By Total Pop.	Cluster at State-Level	Time-Invariant AIDS Mapping	1983-1986 Death Rate	1987 Death Rate	Top-code Mortality 95^{th} Percentile
Panel A: House Vote Share	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Democratic Vote Percent	0.081**	0.080**	0.081***	0.083*	0.164**	0.153**	0.178*
	(0.037)	(0.038)	(0.027)	(0.048)	(0.073)	(0.077)	(0.093)
Repubican Vote Percent	−0.058	−0.056	−0.058*	−0.063	−0.115	−0.111	−0.136
	(0.037)	(0.038)	(0.031)	(0.046)	(0.075)	(0.077)	(0.089)
Panel B: Voter Turnout							
Democratic Voter Turnout	44.6*	42.7*	44.6	40.6	84.5*	91.0*	28.3
	(24.5)	(25.0)	(28.3)	(29.9)	(44.8)	(52.8)	(67.5)
Republican Voter Turnout	−5.1	−5.8	−5.1	−10.8	−3.9	−14.5	−86.2*
	(18.2)	(18.9)	(24.4)	(19.7)	(35.8)	(37.8)	(52.1)
District Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: OLS estimates of α from equation (2) weighted by voting-age population are shown. The dependent variable in Panel A is percent vote received by party listed in the row in district i and year t; and in Panel B, the dependent variable is votes per 100,000 voting-age population received by the party listed in the row. Panel B drops unopposed elections. Column (1) reproduces the baseline estimate; Column (2) weights by total population; Column (3) corrects standard errors for clustering at the state-level; Column (4) constructs the HIV/AIDS mortality rate using a time-invariant mapping that is fixed using 1982 geographic definitions; Column (5) replaces the 1983-1987 HIV/AIDS mortality rate with the 1983-1986 HIV/AIDS mortality rate; Column (6) replaces the 1983-1987 HIV/AIDS mortality rate with the 1987 HIV/AIDS mortality rate; and Column (7) top-codes the HIV/AIDS mortality rate at the 95^{th} percentile, calculated using observations at the district x decade level. All regressions include congressional district and election year fixed effects. Standard errors in parentheses are corrected for clustering at the congressional district level.

* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

Online Appendix: Additional Tables and Figures

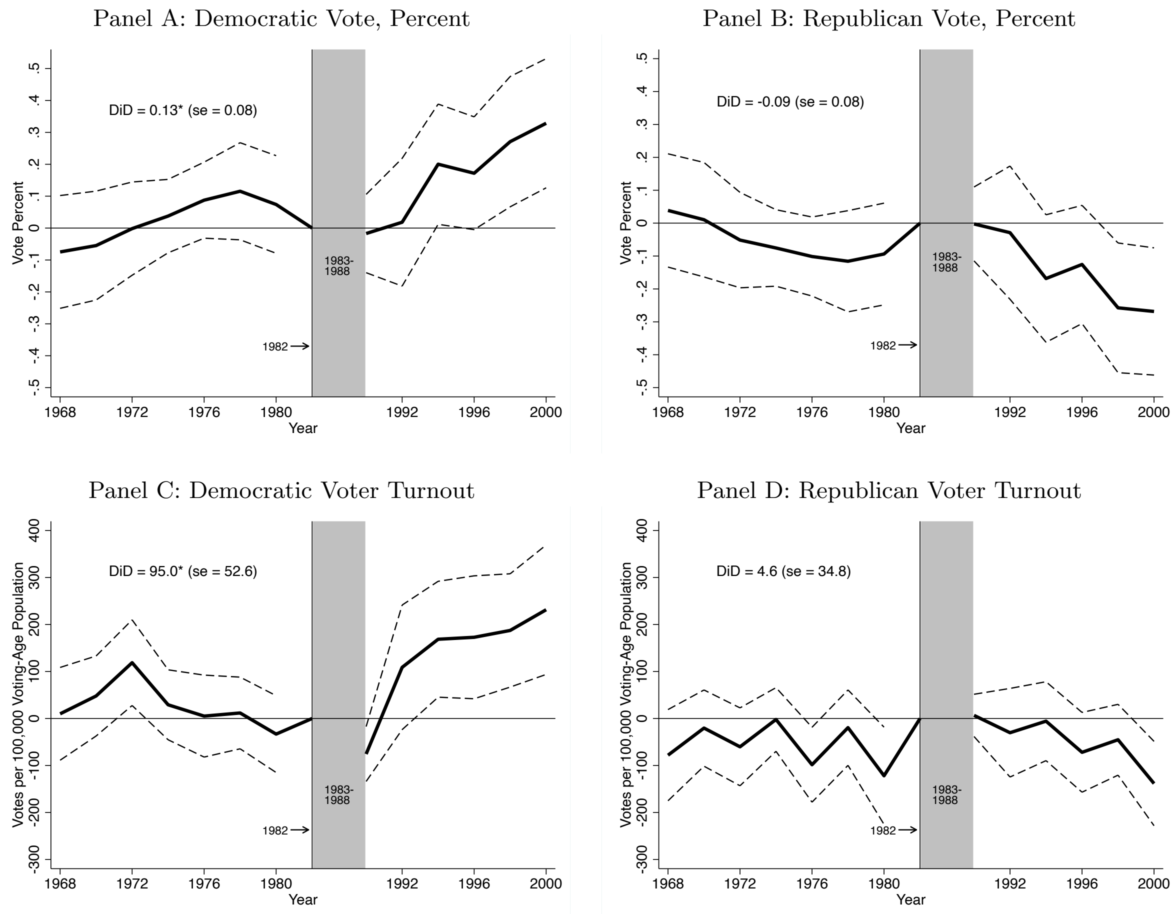
Appendix Figure 1: HIV/AIDS Mortality and Presidential Election Outcomes



Notes: OLS estimates of π and β from equation (3) weighted by voting-age population are shown. The dependent variable in Panel A is the percent Democratic vote in district i and year t; in Panel B, the dependent variable is the percent Republican vote; in Panel C, the dependent variable is Democratic votes per 100,000 voting-age population; and in Panel D, the dependent variable is Republican votes per 100,000 voting-age population. The vertical line indicates the year 1980 and we exclude data from 1981-1987, indicated by the shaded region. All regressions include congressional district and election year fixed effects. Dashed lines indicate 90 percent confidence intervals based on standard errors corrected for clustering at the congressional district level.

* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

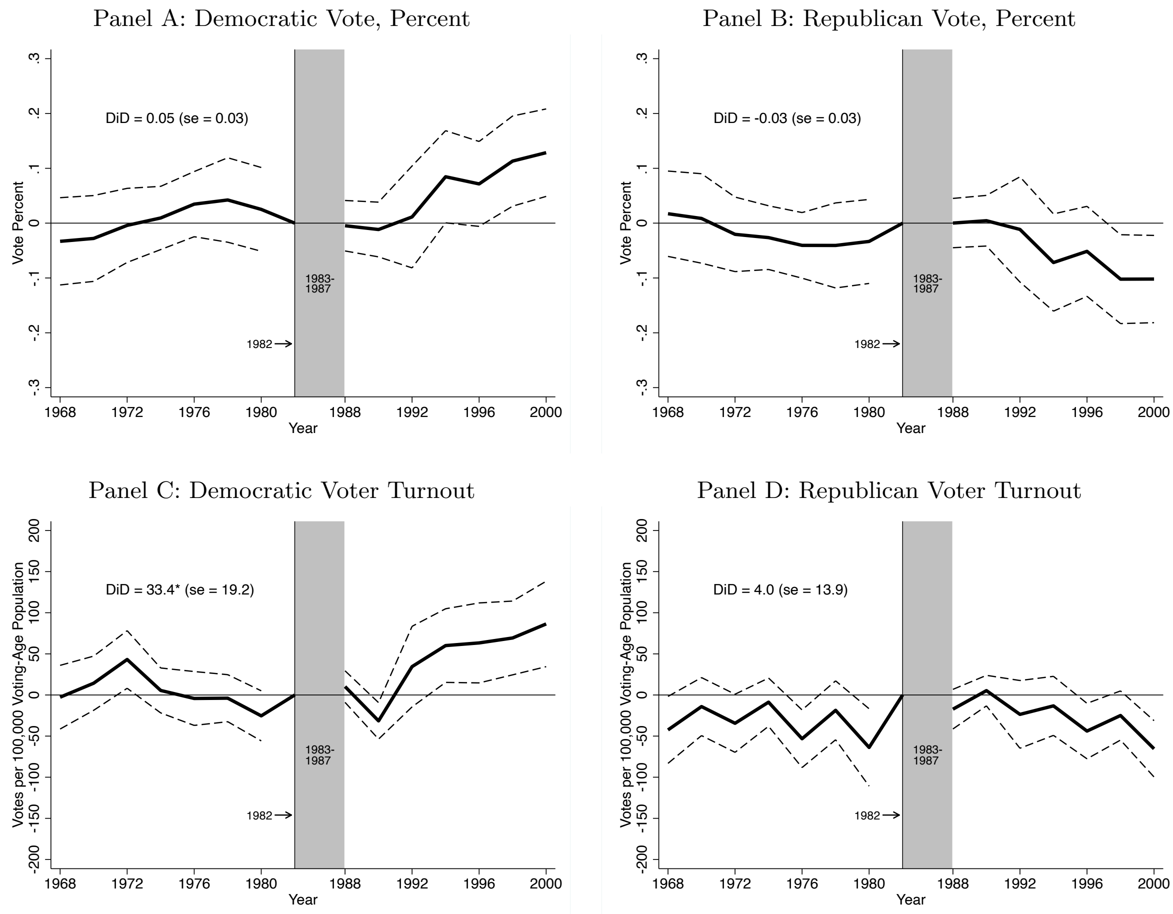
Appendix Figure 2: HIV/AIDS Mortality in 1988 and Voting Behavior



Notes: OLS estimates of π and β from equation (3) weighted by voting-age population are shown. The dependent variable in Panel A is the percent Democratic vote in district i and year t; in Panel B, the dependent variable is the percent Republican vote; in Panel C, the dependent variable is Democratic votes per 100,000 voting-age population; and in Panel D, the dependent variable is Republican votes per 100,000 voting-age population. Panels C and D drop unopposed elections. The vertical line indicates the year 1982 and we exclude data from 1983-1988, indicated by the shaded region. HIV/AIDS mortality is constructed using deaths that occurred in 1988 only. The sample excludes Georgia, since counties with few HIV/AIDS deaths are not identified in the data. All regressions include congressional district and election year fixed effects. Dashed lines indicate 90 percent confidence intervals based on standard errors corrected for clustering at the congressional district level.

* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

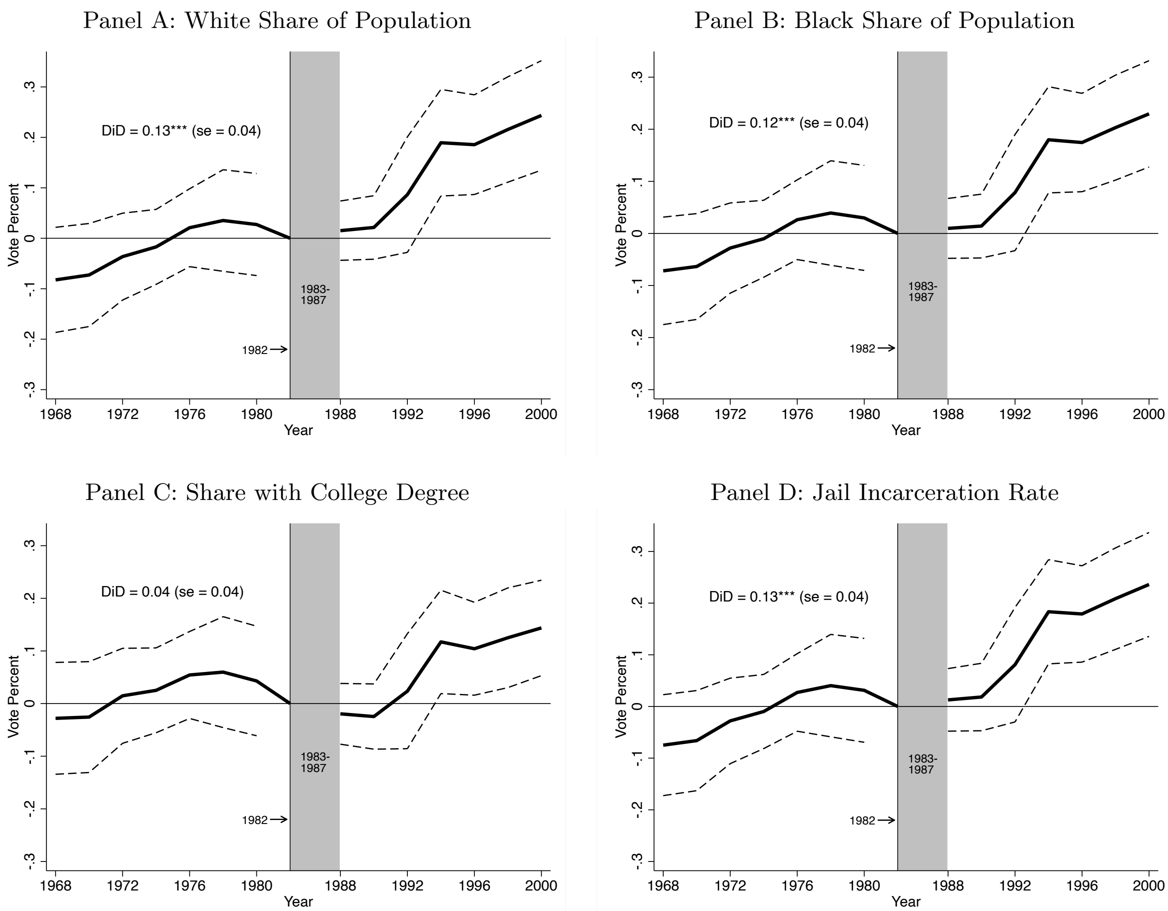
Appendix Figure 3: HIV/AIDS, Cancer, and Pneumonia Mortality and Voting Behavior



Notes: OLS estimates of π and β from equation (3) weighted by voting-age population are shown, adding together cancer and pneumonia mortality for 20-45 year olds and HIV/AIDS mortality to check for death certificate misclassification. The dependent variable in Panel A is the percent Democratic vote in district i and year t; in Panel B, the dependent variable is the percent Republican vote; in Panel C, the dependent variable is Democratic votes per 100,000 voting-age population; and in Panel D, the dependent variable is Republican votes per 100,000 voting-age population. Panels C and D drop unopposed elections. The vertical line indicates the year 1982 and we exclude data from 1983-1987, indicated by the shaded region. All regressions include congressional district and election year fixed effects. Dashed lines indicate 90 percent confidence intervals based on standard errors corrected for clustering at the congressional district level.

* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

Appendix Figure 4: HIV/AIDS Mortality and Democratic Vote Percent: Including Trends Interacted with Population Characteristics from 1980

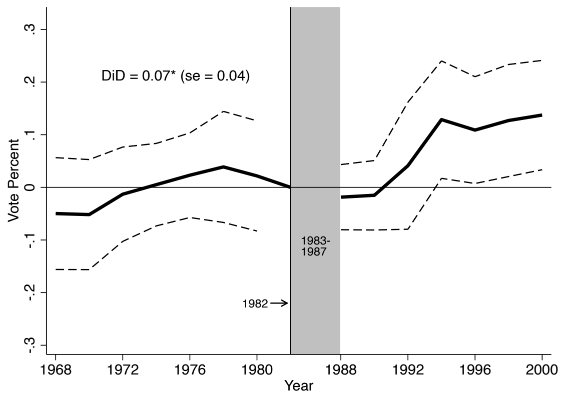


Notes: OLS estimates of π and β from equation (3) weighted by voting-age population are shown. The dependent variable in all panels is the percent Democratic vote in district i and year t. Each panel augments equation (3) with a linear trend interacted with the variable listed in the panel title. All listed variables are measured using data from 1980. Race and educational attainment are constructed using the 1980 Census and jail incarceration rates use data from the Vera Institute of Justice. Educational attainment is calculated using the population aged 25 and older and incarceration rates are calculated per 100,000 population aged 15 to 64. The vertical line indicates the year 1982 and we exclude data from 1983-1987, indicated by the shaded region. All regressions include congressional district and election year fixed effects. Dashed lines indicate 90 percent confidence intervals based on standard errors corrected for clustering at the congressional district level.

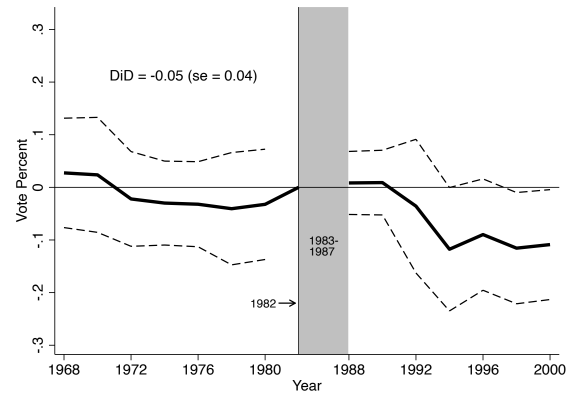
* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

Appendix Figure 5: HIV/AIDS Mortality and Voting Behavior: Adding Urbanicity x Year Fixed Effects

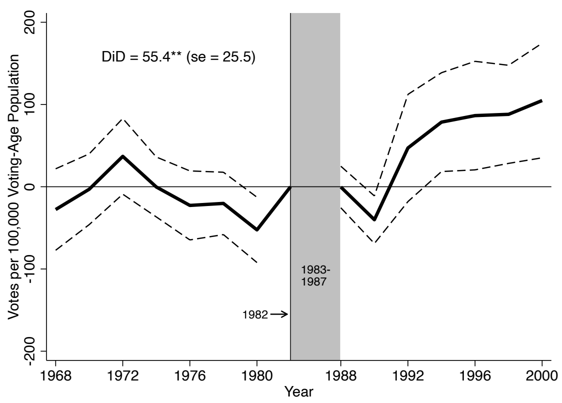
Panel A: Democratic Vote, Percent



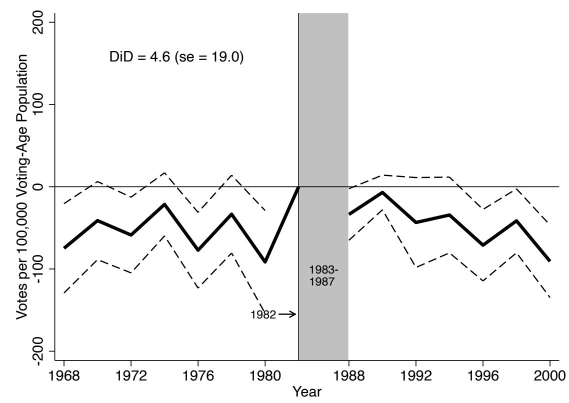
Panel B: Republican Vote, Percent



Panel C: Democratic Voter Turnout



Panel D: Republican Voter Turnout

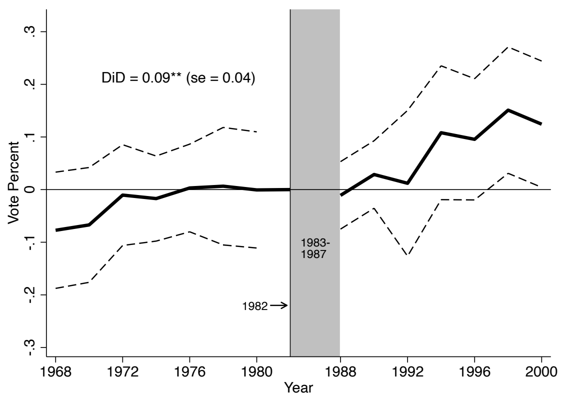


Notes: OLS estimates of π and β from equation (3) augmented with a set of urbanicity-by-year fixed effects weighted by voting-age population are shown. Urbanicity can take three values and is calculated using data from the 1980 Census. The dependent variable in Panel A is the percent Democratic vote in district i and year t; in Panel B, the dependent variable is the percent Republican vote; in Panel C, the dependent variable is Democratic votes per 100,000 voting-age population; and in Panel D, the dependent variable is Republican votes per 100,000 voting-age population. Panels C and D drop unopposed elections. The vertical line indicates the year 1982 and we exclude data from 1983-1988, indicated by the shaded region. All regressions include congressional district and election year fixed effects. Dashed lines indicate 90 percent confidence intervals based on standard errors corrected for clustering at the congressional district level.

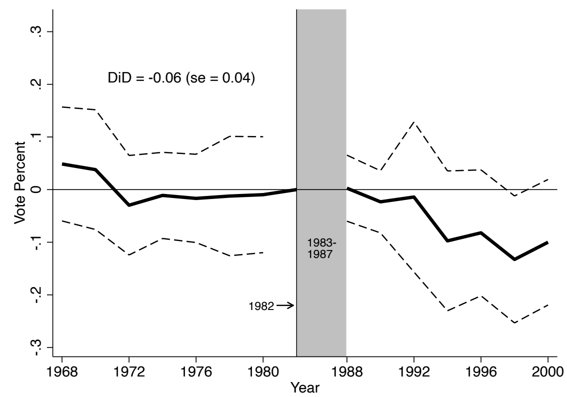
* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

Appendix Figure 6: HIV/AIDS Mortality and Voting Outcomes in Highly Treated Subsamples

Panel A: Dem. Vote, Percent, 50^{th} Pct.

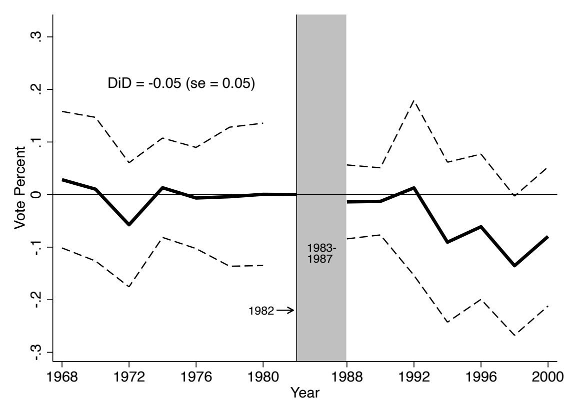


Panel B: Rep. Vote, Percent, 50^{th} Pct.



Panel C: Dem. Vote, Percent, 75^{th} Pct.

Panel D: Rep. Vote, Percent, 75^{th} Pct.

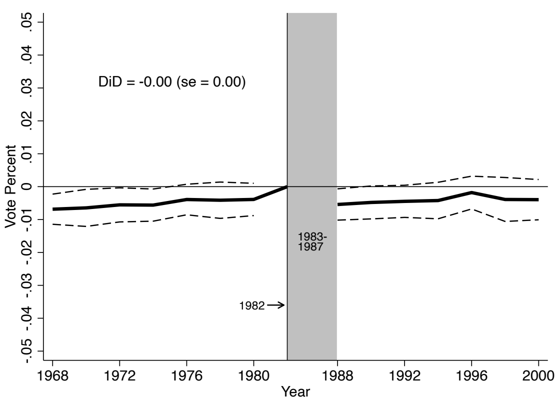


Notes: OLS estimates of π and β from equation (3) weighted by voting-age population are shown. The dependent variable in Panels A and C is the percent Democratic vote in district i and year t; in Panels B and D, the dependent variable is the percent Republican vote. The sample contains districts whose mean HIV/AIDS mortality was above the 50^{th} percentile in Panels A and B, and above the 75^{th} percentile in Panels C and D. The vertical line indicates the year 1982 and we exclude data from 1983-1987, indicated by the shaded region. All regressions include congressional district and election year fixed effects. Dashed lines indicate 90 percent confidence intervals based on standard errors corrected for clustering at the congressional district level.

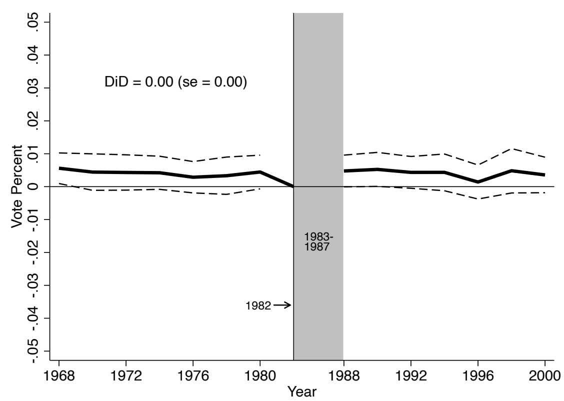
* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

Appendix Figure 7: Cardiovascular Disease Mortality and Voting Behavior

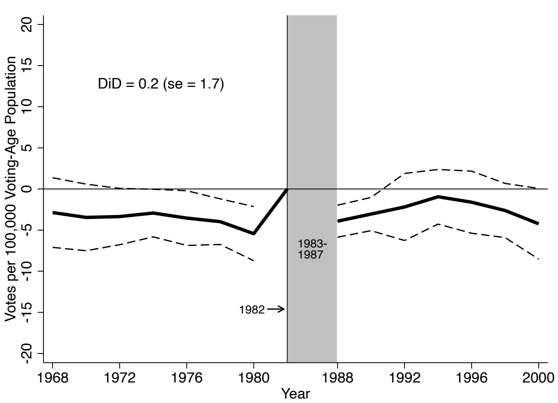
Panel A: Democratic Vote, Percent



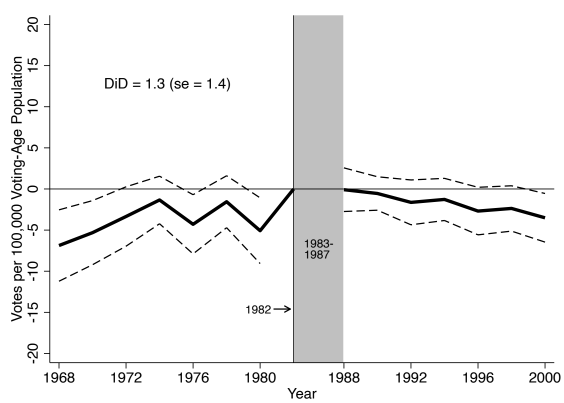
Panel B: Republican Vote, Percent



Panel C: Democratic Voter Turnout



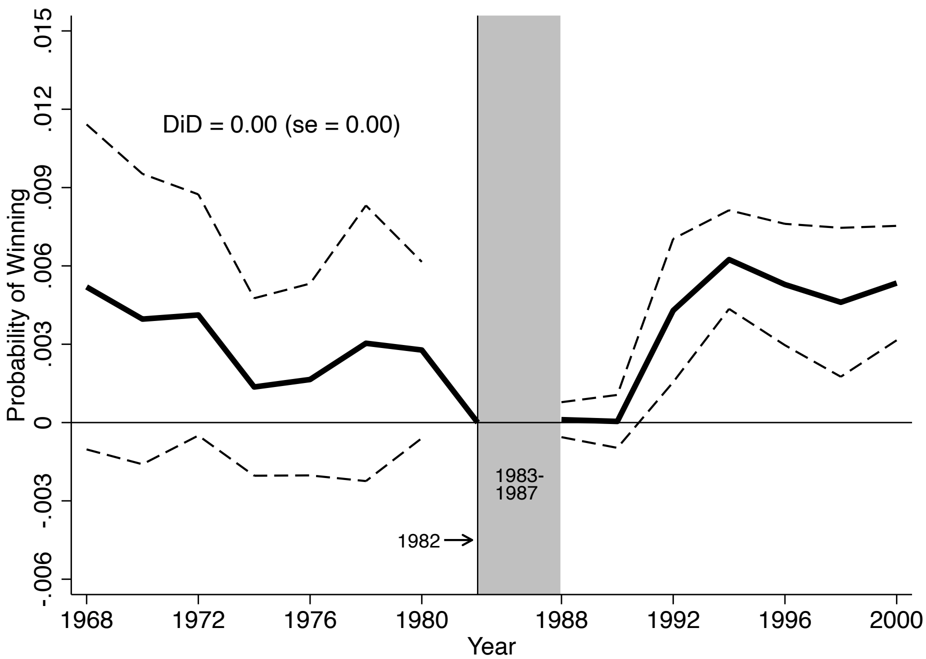
Panel D: Republican Voter Turnout



Notes: OLS estimates of π and β from equation (3) weighted by voting-age population are shown, replacing HIV/AIDS mortality with mortality due to cardiovascular diseases. The dependent variable in Panel A is the percent Democratic vote in district i and year t; in Panel B, the dependent variable is the percent Republican vote; in Panel C, the dependent variable is Democratic votes per 100,000 voting-age population; and in Panel D, the dependent variable is Republican votes per 100,000 voting-age population. Panels C and D drop unopposed elections. The vertical line indicates the year 1982 and we exclude data from 1983-1987, indicated by the shaded region. All regressions include congressional district and election year fixed effects. Dashed lines indicate 90 percent confidence intervals based on standard errors corrected for clustering at the congressional district level.

* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

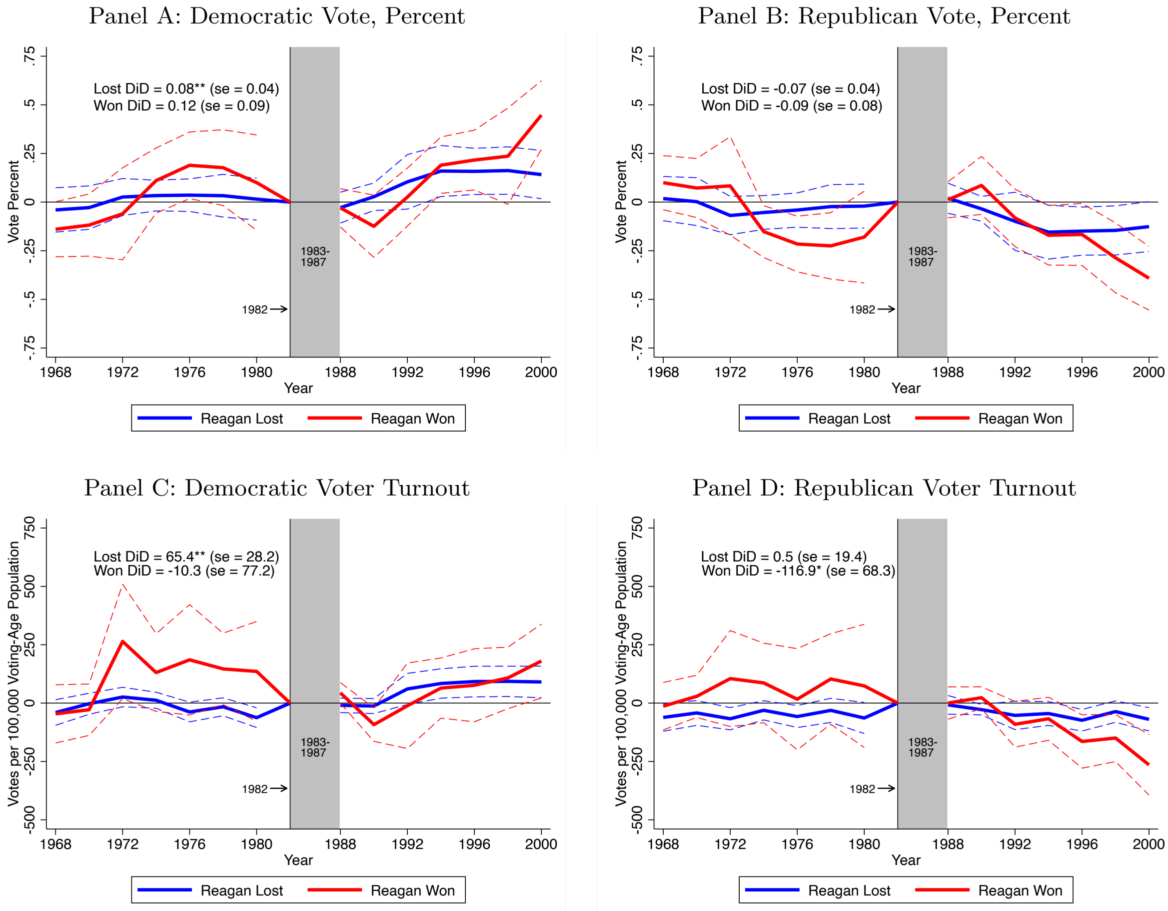
Appendix Figure 8: HIV/AIDS Mortality and the Probability of a Democratic Win in Competitive Districts



Notes: OLS estimates of π and β from equation (3) weighted by voting-age population are shown. The dependent variable is the probability of a Democratic win. The sample is restricted to congressional districts in which the difference between the Democratic and Republican vote share was less than 10 percentage points in 1980. The vertical line indicates the year 1982 and we exclude data from 1983-1987, indicated by the shaded region. All regressions include congressional district and election year fixed effects. Dashed lines indicate 90 percent confidence intervals based on standard errors corrected for clustering at the congressional district level.

* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

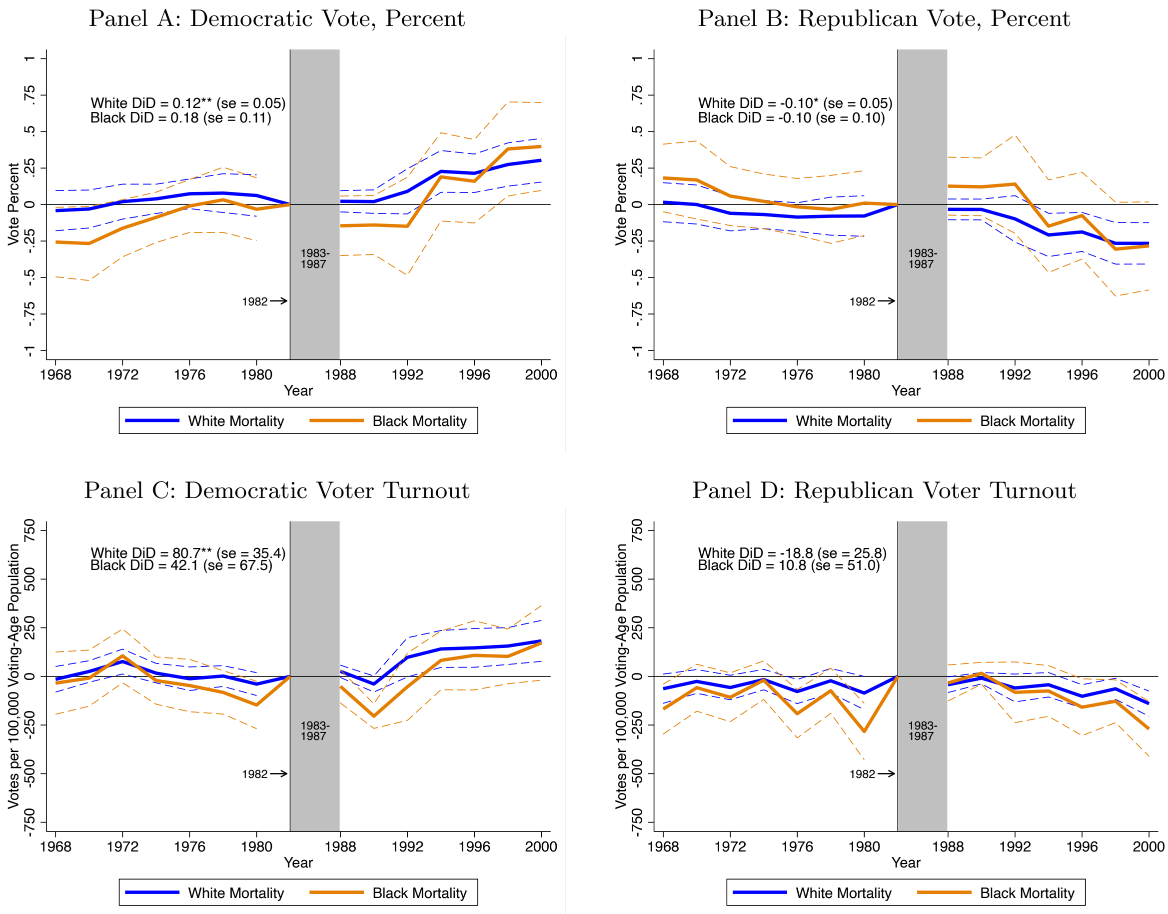
Appendix Figure 9: HIV/AIDS Mortality and Voting Behavior: Districts Reagan Won in 1980 vs. Districts Reagan Lost



Notes: OLS estimates of π and β from equation (3) weighted by voting-age population are shown. The blue line reports estimates of π and β in districts that Reagan lost in 1980 and the red line reports estimates of π and β in districts that Reagan won in 1980. The dependent variable in Panel A is the percent Democratic vote in district i and year t; in Panel B, the dependent variable is the percent Republican vote; in Panel C, the dependent variable is Democratic votes per 100,000 voting-age population; and in Panel D, the dependent variable is Republican votes per 100,000 voting-age population. Panels C and D drop unopposed elections. The vertical line indicates the year 1982 and we exclude data from 1983-1987, indicated by the shaded region. All regressions include congressional district and election year fixed effects. Dashed lines indicate 90 percent confidence intervals based on standard errors corrected for clustering at the congressional district level.

* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

Appendix Figure 10: HIV/AIDS Mortality by Race and Voting Behavior



Notes: OLS estimates of π and β from equation (3) weighted by voting-age population are shown. The blue line reports estimates of π and β, replacing aggregate HIV/AIDS mortality with white HIV/AIDS mortality; and the orange line reports estimates of π and β, replacing aggregate HIV/AIDS mortality with black HIV/AIDS mortality. The dependent variable in Panel A is the percent Democratic vote in district i and year t; in Panel B, the dependent variable is the percent Republican vote; in Panel C, the dependent variable is Democratic votes per 100,000 voting-age population; and in Panel D, the dependent variable is Republican votes per 100,000 voting-age population. Panels C and D drop unopposed elections. The vertical line indicates the year 1982 and we exclude data from 1983-1987, indicated by the shaded region. All regressions include congressional district and election year fixed effects. Dashed lines indicate 90 percent confidence intervals based on standard errors corrected for clustering at the congressional district level.

* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

Appendix Table 1: HIV/AIDS Mortality and Voting Behavior

	Vote Percent		Voter Turnout	
	Democrat	Republican	Democrat	Republican
Panel A: DiD Estimates	(1)	(2)	(3)	(4)
HIV/AIDS Rate × **1**[Year ≥ 1988]	0.081**	−0.058	44.6*	−5.1
	(0.037)	(0.037)	(24.5)	(18.2)
Panel B: Event-Study Estimates				
HIV/AIDS Rate × **1**[Year = 1988]	−0.005	−0.002	7.6	−26.7
	(0.036)	(0.035)	(14.9)	(18.4)
HIV/AIDS Rate × **1**[Year = 1990]	−0.006	−0.003	−45.0**	−2.8
	(0.039)	(0.036)	(17.6)	(12.6)
HIV/AIDS Rate × **1**[Year = 1992]	0.025	−0.029	40.6	−38.7
	(0.073)	(0.075)	(38.7)	(32.1)
HIV/AIDS Rate × **1**[Year = 1994]	0.137**	−0.122*	79.5**	−29.2
	(0.064)	(0.067)	(35.8)	(27.3)
HIV/AIDS Rate × **1**[Year = 1996]	0.127**	−0.102*	85.5**	−70.3***
	(0.059)	(0.062)	(39.1)	(25.9)
HIV/AIDS Rate × **1**[Year = 1998]	0.185***	−0.171***	89.9**	−46.1**
	(0.064)	(0.064)	(35.1)	(22.9)
HIV/AIDS Rate × **1**[Year = 2000]	0.202***	−0.168***	112.2***	−103.7***
	(0.064)	(0.063)	(41.6)	(26.9)
Mean of Dep. Var.	53.993	43.849	35,485.5	29,297.2
Observations	6,525	6,525	6,212	6,212
District Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes

Notes: OLS estimates of α from equation (2) weighted by voting-age population are shown in Panel A and OLS estimates of β from equation (3) weighted by voting-age population are shown in Panel B. The dependent variable in Columns (1) and (2) is the percent Democratic or Republican vote in district i and year t; and in Columns (3) and (4) the dependent variable is Democratic or Republican votes per 100,000 voting-age population. Columns (3) and (4) drop unopposed elections. All regressions include congressional district and election year fixed effects. Standard errors in parentheses are corrected for clustering at the congressional district level.

* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

Appendix Table 2: HIV/AIDS Mortality and the Probability of a Democratic Win

	All Districts	Competitive Districts
Panel A: DiD Estimates	(1)	(2)
HIV/AIDS Rate × **1**[Year ≥ 1988]	−0.0002	0.0004
	(0.0008)	(0.0012)
Panel B: Event-Study Estimates		
HIV/AIDS Rate × **1**[Year = 1988]	−0.0004	0.0001
	(0.0005)	(0.0004)
HIV/AIDS Rate × **1**[Year = 1990]	−0.0008	0.0000
	(0.0006)	(0.0006)
HIV/AIDS Rate × **1**[Year = 1992]	0.0003	0.0043**
	(0.0013)	(0.0017)
HIV/AIDS Rate × **1**[Year = 1994]	0.0020	0.0062***
	(0.0013)	(0.0011)
HIV/AIDS Rate × **1**[Year = 1996]	0.0025**	0.0053***
	(0.0012)	(0.0014)
HIV/AIDS Rate × **1**[Year = 1998]	0.0024*	0.0046***
	(0.0012)	(0.0017)
HIV/AIDS Rate × **1**[Year = 2000]	0.0028**	0.0053***
	(0.0012)	(0.0013)
Mean of Dep. Var.	0.572	0.560
Observations	6,525	1,052
District Fixed Effects	Yes	Yes
Year Fixed Effects	Yes	Yes

Notes: OLS estimates of α from equation (2) weighted by voting-age population are shown in Panel A and OLS estimates of β from equation (3) weighted by voting-age population are shown in Panel B. The dependent variable in both columns is the probability of a Democratic win. The sample in Column (2) is restricted to congressional districts in which the difference between the Democratic and Republican vote share was less than 10 percentage points in 1980. All regressions include congressional district and election year fixed effects. Standard errors in parentheses are corrected for clustering at the congressional district level.

* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

Appendix Table 3: HIV/AIDS Mortality and Voting Behavior in Competitive Districts

	Vote Percent		Voter Turnout	
	Democrat	Republican	Democrat	Republican
Panel A: DiD Estimates	(1)	(2)	(3)	(4)
HIV/AIDS Rate × **1**[Year ≥ 1988]	0.104	−0.096	103.5**	−26.8
	(0.071)	(0.070)	(44.3)	(27.3)
Panel B: Event-Study Estimates				
HIV/AIDS Rate × **1**[Year = 1988]	−0.012	−0.005	−1.5	−25.1
	(0.074)	(0.075)	(13.6)	(46.9)
HIV/AIDS Rate × **1**[Year = 1990]	−0.062	0.061	−13.2	−12.3
	(0.089)	(0.084)	(24.0)	(20.3)
HIV/AIDS Rate × **1**[Year = 1992]	0.283***	−0.282***	102.3	−116.8***
	(0.048)	(0.048)	(83.2)	(22.8)
HIV/AIDS Rate × **1**[Year = 1994]	0.332***	−0.323***	127.5	−89.1***
	(0.053)	(0.051)	(85.9)	(23.4)
HIV/AIDS Rate × **1**[Year = 1996]	0.281***	−0.271***	142.2	−126.8***
	(0.055)	(0.057)	(90.3)	(23.1)
HIV/AIDS Rate × **1**[Year = 1998]	0.324***	−0.293***	132.2	−79.7***
	(0.061)	(0.053)	(83.4)	(23.0)
HIV/AIDS Rate × **1**[Year = 2000]	0.328***	−0.302***	149.5	−117.7***
	(0.068)	(0.056)	(91.0)	(29.0)
Mean of Dep. Var.	51.823	46.444	36,298.5	31,923.0
Observations	1,052	1,052	1,026	1,026
District Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes

Notes: OLS estimates of α from equation (2) weighted by voting-age population are shown in Panel A and OLS estimates of β from equation (3) weighted by voting-age population are shown in Panel B. The sample is restricted to congressional districts in which the difference between the Democratic and Republican vote share was less than 10 percentage points in 1980. The dependent variable in Columns (1) and (2) is the percent Democratic or Republican vote in district i and year t; and in Columns (3) and (4) the dependent variable is Democratic or Republican votes per 100,000 voting-age population. Columns (3) and (4) drop unopposed elections. All regressions include congressional district and election year fixed effects. Standard errors in parentheses are corrected for clustering at the congressional district level.

* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

Appendix Table 4A: HIV/AIDS Mortality and Vote Share: Districts Reagan Won in 1980 vs. Districts Reagan Lost

	Democrat Vote, Percent		Republican Vote, Percent	
	Reagan Lost	Reagan Won	Reagan Lost	Reagan Won
Panel A: DiD Estimates	(1)	(2)	(3)	(4)
HIV/AIDS Rate × **1**[Year ≥ 1988]	0.084**	0.117	−0.067	−0.094
	(0.042)	(0.089)	(0.043)	(0.080)
Panel B: Event-Study Estimates				
HIV/AIDS Rate × **1**[Year = 1988]	−0.028	−0.030	0.020	0.012
	(0.048)	(0.060)	(0.047)	(0.056)
HIV/AIDS Rate × **1**[Year = 1990]	0.028	−0.124	−0.035	0.086
	(0.043)	(0.097)	(0.039)	(0.091)
HIV/AIDS Rate × **1**[Year = 1992]	0.104	0.026	−0.099	−0.081
	(0.085)	(0.090)	(0.091)	(0.090)
HIV/AIDS Rate × **1**[Year = 1994]	0.160**	0.190**	−0.154*	−0.170*
	(0.080)	(0.088)	(0.084)	(0.093)
HIV/AIDS Rate × **1**[Year = 1996]	0.158**	0.216**	−0.149**	−0.166*
	(0.072)	(0.093)	(0.075)	(0.097)
HIV/AIDS Rate × **1**[Year = 1998]	0.162**	0.236	−0.145*	−0.287***
	(0.074)	(0.151)	(0.077)	(0.109)
HIV/AIDS Rate × **1**[Year = 2000]	0.141*	0.447***	−0.126	−0.392***
	(0.075)	(0.107)	(0.078)	(0.100)
Mean of Dep. Var.	67.067	48.386	30.843	49.487
Observations	1,934	4,315	1,934	4,315
District Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes

Notes: OLS estimates of α from equation (2) weighted by voting-age population are shown in Panel A and OLS estimates of β from equation (3) weighted by voting-age population are shown in Panel B. The dependent variable in Columns (1) and (2) is the percent Democratic vote in district i and year t; and in Columns (3) and (4) the dependent variable is Republican vote share. Odd-numbered columns report estimates in districts that Reagan lost in 1980 and even-numbered columns report estimates in districts that Reagan won in 1980. Observations will not add to total since districts that did not exist in 1980 are dropped. All regressions include congressional district and election year fixed effects. Standard errors in parentheses are corrected for clustering at the congressional district level.

* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

Appendix Table 4B: HIV/AIDS Mortality and Voter Turnout: Districts Reagan Won in 1980 vs. Districts Reagan Lost

	Democrat Voter Turnout		Republican Voter Turnout	
	Reagan Lost	Reagan Won	Reagan Lost	Reagan Won
Panel A: DiD Estimates	(1)	(2)	(3)	(4)
HIV/AIDS Rate × **1**[Year ≥ 1988]	65.4**	−10.3	0.5	−116.9*
	(28.2)	(77.2)	(19.4)	(68.3)
Panel B: Event-Study Estimates				
HIV/AIDS Rate × **1**[Year = 1988]	−9.5	43.8	−7.5	0.3
	(18.8)	(26.8)	(24.3)	(42.1)
HIV/AIDS Rate × **1**[Year = 1990]	−12.5	−92.3**	−28.1**	23.1
	(19.6)	(43.6)	(13.6)	(28.4)
HIV/AIDS Rate × **1**[Year = 1992]	60.6	−11.4	−52.6	−90.8
	(40.5)	(111.3)	(37.1)	(59.5)
HIV/AIDS Rate × **1**[Year = 1994]	84.0**	64.3	−44.7	−67.0
	(38.3)	(78.4)	(30.9)	(56.0)
HIV/AIDS Rate × **1**[Year = 1996]	92.3**	76.4	−73.5***	−164.3**
	(39.9)	(95.0)	(28.0)	(69.5)
HIV/AIDS Rate × **1**[Year = 1998]	93.2**	107.9	−36.3	−149.5**
	(39.4)	(80.1)	(27.8)	(61.4)
HIV/AIDS Rate × **1**[Year = 2000]	90.6**	180.4*	−69.5**	−264.8***
	(41.1)	(96.2)	(30.2)	(78.6)
Mean of Dep. Var.	36,862.0	33,753.5	17,626.7	33,302.7
Observations	1,841	4,116	1,841	4,116
District Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes

Notes: OLS estimates of α from equation (2) weighted by voting-age population are shown in Panel A and OLS estimates of β from equation (3) weighted by voting-age population are shown in Panel B. The dependent variable in Columns (1) and (2) is Democratic votes per 100,000 voting-age population in district i and year t; and in Columns (3) and (4) the dependent variable is Republican votes per 100,000 voting-age population. Odd-numbered columns report estimates in districts that Reagan lost in 1980 and even-numbered columns report estimates in districts that Reagan won in 1980. All columns drop elections that are unopposed. Observations will not add to total since districts that did not exist in 1980 are dropped. All regressions include congressional district and election year fixed effects. Standard errors in parentheses are corrected for clustering at the congressional district level.

* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

Appendix Table 5A: HIV/AIDS Mortality by Race and Vote Share

	Democrat Vote, Percent		Republican Vote, Percent	
	White Mortality	Black Mortality	White Mortality	Black Mortality
Panel A: DiD Estimates	(1)	(2)	(3)	(4)
HIV/AIDS Rate × **1**[Year ≥ 1988]	0.124**	0.178	−0.099*	−0.096
	(0.052)	(0.110)	(0.051)	(0.105)
Panel B: Event-Study Estimates				
HIV/AIDS Rate × **1**[Year = 1988]	0.023	−0.146	−0.033	0.126
	(0.044)	(0.124)	(0.043)	(0.121)
HIV/AIDS Rate × **1**[Year = 1990]	0.020	−0.140	−0.034	0.121
	(0.049)	(0.123)	(0.043)	(0.120)
HIV/AIDS Rate × **1**[Year = 1992]	0.091	−0.149	−0.098	0.140
	(0.094)	(0.204)	(0.097)	(0.205)
HIV/AIDS Rate × **1**[Year = 1994]	0.227***	0.190	−0.208**	−0.148
	(0.087)	(0.184)	(0.090)	(0.193)
HIV/AIDS Rate × **1**[Year = 1996]	0.215***	0.160	−0.188**	−0.076
	(0.080)	(0.174)	(0.081)	(0.181)
HIV/AIDS Rate × **1**[Year = 1998]	0.275***	0.381*	−0.266***	−0.306
	(0.090)	(0.196)	(0.087)	(0.196)
HIV/AIDS Rate × **1**[Year = 2000]	0.304***	0.398**	−0.266***	−0.283
	(0.091)	(0.183)	(0.086)	(0.183)
Mean of Dep. Var.	53.993	53.993	43.849	43.849
Observations	6,525	6,525	6,525	6,525
District Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes

Notes: OLS estimates of α from equation (2) weighted by voting-age population are shown in Panel A and OLS estimates of β from equation (3) weighted by voting-age population are shown in Panel B. The dependent variable in Columns (1) and (2) is the percent Democratic vote in district i and year t; and in Columns (3) and (4) the dependent variable is the percent Republican vote. Odd-numbered columns replace aggregate HIV/AIDS mortality with white HIV/AIDS mortality and even-numbered columns replace aggregate HIV/AIDS mortality with black HIV/AIDS mortality. All regressions include congressional district and election year fixed effects. Standard errors in parentheses are corrected for clustering at the congressional district level.

* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

Appendix Table 5B: HIV/AIDS Mortality by Race and Voter Turnout

	Democrat Voter Turnout		Republican Voter Turnout	
	White Mortality	Black Mortality	White Mortality	Black Mortality
Panel A: DiD Estimates	(1)	(2)	(3)	(4)
HIV/AIDS Rate × **1**[Year ≥ 1988]	80.7**	42.1	−18.8	10.8
	(35.4)	(67.5)	(25.8)	(51.0)
Panel B: Event-Study Estimates				
HIV/AIDS Rate × **1**[Year = 1988]	26.0	−51.1	−42.7*	−33.6
	(19.2)	(52.0)	(24.5)	(56.2)
HIV/AIDS Rate × **1**[Year = 1990]	−39.2	−204.3***	−9.0	15.9
	(25.0)	(38.3)	(17.8)	(34.2)
HIV/AIDS Rate × **1**[Year = 1992]	98.0	−53.2	−59.5	−81.8
	(61.3)	(105.0)	(43.5)	(95.0)
HIV/AIDS Rate × **1**[Year = 1994]	141.1**	82.3	−43.0	−74.9
	(57.6)	(91.9)	(38.1)	(79.1)
HIV/AIDS Rate × **1**[Year = 1996]	146.7**	108.2	−102.2***	−158.3*
	(60.5)	(108.0)	(36.2)	(88.7)
HIV/AIDS Rate × **1**[Year = 1998]	156.1***	102.8	−63.7*	−127.7*
	(57.6)	(85.4)	(33.0)	(66.8)
HIV/AIDS Rate × **1**[Year = 2000]	182.5***	172.1	−140.0***	−270.3***
	(64.0)	(116.5)	(39.4)	(85.4)
Mean of Dep. Var.	35,485.5	35,485.5	29,297.2	29,297.2
Observations	6,212	6,212	6,212	6,212
District Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes

Notes: OLS estimates of α from equation (2) weighted by voting-age population are shown in Panel A and OLS estimates of β from equation (3) weighted by voting-age population are shown in Panel B. The dependent variable in Columns (1) and (2) is Democratic votes per 100,000 voting-age population in district i and year t; and in Columns (3) and (4) the dependent variable is Republican votes per 100,000 voting-age population. Odd-numbered columns replace aggregate HIV/AIDS mortality with white HIV/AIDS mortality and even-numbered columns replace aggregate HIV/AIDS mortality with black HIV/AIDS mortality. All columns drop elections that are unopposed. All regressions include congressional district and election year fixed effects. Standard errors in parentheses are corrected for clustering at the congressional district level.

* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

Appendix Table 6: HIV/AIDS Mortality and Campaign Contributions

	Amount of Contributions		Number of Contributions	
	Democrat	Republican	Democrat	Republican
Panel A: DiD Estimates	(1)	(2)	(3)	(4)
HIV/AIDS Rate × **1**[Year ≥ 1988]	142.9*	37.5	0.516**	0.104
	(81.7)	(46.7)	(0.217)	(0.124)
Panel B: Event-Study Estimates				
HIV/AIDS Rate × **1**[Year = 1988]	79.6*	19.7	0.207**	0.054
	(45.7)	(35.6)	(0.105)	(0.072)
HIV/AIDS Rate × **1**[Year = 1989]	−42.2**	−39.5*	0.052	−0.043
	(20.4)	(21.9)	(0.043)	(0.035)
HIV/AIDS Rate × **1**[Year = 1990]	50.6	7.4	0.321**	0.096
	(31.0)	(32.6)	(0.147)	(0.116)
HIV/AIDS Rate × **1**[Year = 1991]	−65.3	−92.1*	0.056	−0.125
	(115.2)	(53.7)	(0.246)	(0.113)
HIV/AIDS Rate × **1**[Year = 1992]	147.9	−33.5	0.665	0.042
	(181.1)	(82.4)	(0.434)	(0.213)
HIV/AIDS Rate × **1**[Year = 1993]	−153.9	−124.2**	−0.162	−0.207*
	(97.7)	(50.7)	(0.205)	(0.109)
HIV/AIDS Rate × **1**[Year = 1994]	103.8	−19.1	0.578	−0.009
	(183.5)	(125.2)	(0.476)	(0.318)
HIV/AIDS Rate × **1**[Year = 1995]	−28.9	−83.3	0.115	−0.138
	(140.2)	(60.9)	(0.306)	(0.129)
HIV/AIDS Rate × **1**[Year = 1996]	225.7	−106.3	0.910	−0.246
	(232.8)	(86.8)	(0.604)	(0.234)
HIV/AIDS Rate × **1**[Year = 1997]	−44.4	−120.3**	0.148	−0.214*
	(124.5)	(56.4)	(0.283)	(0.123)
HIV/AIDS Rate × **1**[Year = 1998]	125.2	−119.2	0.632	−0.327*
	(176.5)	(73.2)	(0.455)	(0.181)
HIV/AIDS Rate × **1**[Year = 1999]	60.4	−73.5	0.393	−0.121
	(162.7)	(68.9)	(0.379)	(0.152)
HIV/AIDS Rate × **1**[Year = 2000]	160.9	319.1	0.760	0.822
	(185.0)	(271.8)	(0.476)	(0.680)
Mean of Dep. Var.	14,163.3	15,373.3	43.200	47.806
Observations	7,395	7,395	7,395	7,395
District Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes

Notes: OLS estimates of α from equation (2) weighted by voting-age population are shown in Panel A and OLS estimates of β from equation (3) weighted by voting-age population are shown in Panel B. The dependent variable in Columns (1) and (2) is contributions to Democratic or Republican to House candidates (in 1980 dollars) per 100,000 voting-age population in district i and year t; and in Columns (3) and (4) the dependent variable is the number of contributions to Democratic or Republican House candidates per 100,000 voting-age population. All regressions include congressional district and year fixed effects. Standard errors in parentheses are corrected for clustering at the congressional district level.

* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.