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ABSTRACT

This is the first study to examine the effect of experiencing a widespread, deadly epidemic on voting behavior. 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 document the effects of the HIV/AIDS epidemic on votes received by Democratic and Republican candidates. Beginning with the 1994 elections, there is a strong, positive association between HIV/AIDS mortality and the vote share received by Democratic candidates. Congressional districts that bore the brunt of the HIV/AIDS epidemic also saw substantial increases in Democratic voter turnout and contributions made to Democratic candidates.

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> The issue is AIDS. Where do the candidates stand on treatment research, housing, health care, discrimination? Your vote is a weapon. Use it. We are at war.
>
> – *Silence=Death Project*

> If the Reagan administration bureaucracy manages to mishandle the issue and it [HIV/AIDS] becomes a much larger public health crisis, then at some point it becomes a question of 'Why did they fail?' Then it becomes a downside proposition for people who, in effect, have been defending the Reagan administration.
>
> – *Newt Gingrich*

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 5,500 (Francis 2012).

During the early years of the epidemic, local grass-roots organizations such as the Gay Men's Health Crisis launched prevention programs intended to curb the spread of new infections (Arno 1986; Chambré 2006; Brier 2009; Parker 2011) while AIDS activists demanded that government officials take action (Elbaz 1995; Chambré 2006, pp. 115-118). As media coverage of the epidemic intensified (McCoy and Khoury 1990; Burd 1993) and fear of contracting HIV/AIDS grew among heterosexuals, Congress came under increasing pressure to respond (Shaw 1987; Padamsee 2018). The Health Omnibus Programs Extension (HOPE) Act, which appropriated approximately $800 million per year for HIV/AIDS education, research and testing, was passed with bipartisan support in October of 1988 (Molotsky 1988).

Looking ahead to the November elections of that year, both Democratic and Republican strategists were convinced that HIV/AIDS would be a key issue (Luther 1987; Weinraub

1987). Election-day exit polls, however, suggest that voters cared more about national security, the economy and crime than they did about healthcare-related issues and the fight against HIV/AIDS (Blendon and Donelan 1989). Whether the HIV/AIDS epidemic—and the public health response to the epidemic—had an appreciable impact on the 1988 elections, or subsequent elections, is an open question.

In this study, we use data at the congressional district level to estimate the effects of the HIV/AIDS epidemic on votes and campaign contributions received by Democratic and Republican candidates to the U.S House of Representatives during the period 1988-2000. It is, to our knowledge, the first study to estimate the effects of experiencing a widespread, deadly epidemic on these types of political outcomes. 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. 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. From the outset, 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 whether the outcomes under study were impacted by the local intensity of the HIV/AIDS epidemic.

A large number of previous studies have examined the effects of economic conditions on U.S. elections.[1] Their results suggest that, as a general rule, Democratic candidates benefit from higher unemployment, while Republican candidates are punished, perhaps because American voters view Democrats more capable of handling economic crises (Rees et al. 1962; Wright 2012; Burden and Wichowsky 2014). There is also evidence, albeit based entirely on events taking place outside of the United States, that international terrorist attacks increase

[1]Lewis-Beck and Stegmaier (2000) review early studies on economic conditions and election outcomes. More recent studies include Anderson (2000); Wright (2012); Burden and Wichowsky (2014); Lindvall (2014); De la Poza, Jódar, and Pricop (2017) and Helgason and Mérola (2017). See also Autor et al. (Forthcoming), who examined the effects of trade shocks on political opinions and voting patterns. They found that congressional districts disproportionately exposed to import competition were more likely to elect a Republican to the U.S. House of Representatives.

the vote share received by right-wing, nationalistic candidates (Berrebi and Klor 2008; Gould and Klor 2010; Kibris 2011; Getmansky and Zeitzoff 2014; Peri, Rees, and Smith 2020).[2]

The closest study to ours is by Campante, Depetris-Chauvin, and Durante (2020). In September of 2014, a Liberian national visiting Dallas, Texas was diagnosed with Ebola. Two nurses who treated him in the hospital also contracted the disease as did a doctor who had just returned to New York City from Guinea, where he had treated Ebola patients (Bell et al. 2016). Campante, Depetris-Chauvin, and Durante (2020) showed that these 4 cases received extensive coverage in the U.S. press and caused concern, even panic, among the general public. They found that concern about Ebola was negatively related to voter turnout and Democratic vote share in the November 2014 elections; Ebola concern was, however, essentially unrelated to presidential approval ratings.

The public health response to the Ebola outbreak in the United States was clearly effective (Bell et al. 2016). The outbreak was limited in scope and there is no evidence that its impact on politics extended beyond the 2014 elections. By contrast, the public health response to HIV/AIDS has been consistently characterized as underfunded and lacking in urgency (Shilts 1987; Brier 2009; Francis 2012). Today, it is estimated that 1.1 million Americans live with HIV and that 38,000 new infections occur every year.[3] Although the HIV/AIDS epidemic, now a pandemic (Merson et al. 2008), is acknowledged 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), only a handful of empirical studies have attempted to document the existence of these effects and gauge their magnitude.[4]

[2]Gasper and Reeves (2011); Ben-Ezra et al. (2013), and Nakajo, Kobayashi, and Arai (2019) provide evidence that natural disasters can impact voting behavior. 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.

[3]These statistics can be retrieved from the U.S. Department of Health and Human Services and the Minority HIV/AIDS Fund. (`https://www.hiv.gov/hiv-basics/overview/data-and-trends/statistics`).

[4]A large number of studies provide estimates of 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;

Our results, detailed below, suggest that the HIV/AIDS epidemic benefited Democratic House candidates at the expense of their Republican counterparts, although these effects took several election cycles to manifest. During the pre-treatment period, there is no evidence that the outcomes under consideration were systematically related to HIV/AIDS mortality rates. Likewise, the epidemic does not appear to have affected voting behavior in the 1988 and 1990 elections. By the mid-1990s, however, HIV/AIDS mortality during the treatment period is clearly and positively related to the 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 substantial increases in their probability of winning.

The remainder of the paper is organized as follows. In the next section, we provide historical context and then briefly describe previous studies that have examined the socioeconomic effects of HIV/AIDS. Our data sources, outcomes and identification strategy are described in Sections 3 and 4. In Section 5, we report our principal results; in Section 6, we report results from a series of robustness checks and extensions; and in Section 7, we examine the association between HIV/AIDS mortality and campaign contributions. Section 8 concludes.

2. Background

2.1. The progression and politics of HIV/AIDS

Before it was recognized as a new disease, HIV/AIDS had made the jump from New York City to San Francisco and Los Angeles (Centers for Disease Control and Prevention 1981; Worobey et al. 2016). Through the early 1980s, these three cities accounted for approximately two-thirds of all reported cases in the United States (Selik, Haverkos, and Curran

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. Studies using U.S. data have generally focused on sexual behavior and attitudes towards homosexuals and same-sex relations. These studies are discussed below.

1984; Dutt et al. 1987).

As HIV/AIDS spread to other U.S. cities and their suburbs, 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, intravenous drug users, and the partners of intravenous drug users (Selik, Haverkos, and Curran 1984; Shaw 1987). 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).

The links between HIV/AIDS, homosexuality and drug use, along with the Reagan administration's focus on shrinking the size of the federal government, complicated and delayed the public health response. 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, filled the void, providing a range of health, counseling, and legal services for people with HIV/AIDS.[5] Beginning in 1987, the AIDS Coalition to Unleash Power (ACT UP) organized rallies and protests across the country, raising HIV/AIDS awareness and putting pressure on the CDC and National Institutes of Health (NIH) to increase funding for research.[6]

After President Reagan described AIDS research as a "top priority" for his administration, Congress began to play a more active role (Boffey 1985; Padamsee 2018).[7] For instance, Congress tasked the CDC with developing and distributing an educational brochure about HIV/AIDS in December of 1987 (Boodman 1988). Approximately 126 million copies of the brochure were eventually printed and mailed to American households (Davis 1991).[8] In Oc-

[5]In addition, ASOs actively promoted "safe sex" practices and pushed local officials to support AIDS awareness, research, and treatment (Altman 1985; Panem 1987; Kirp and Bayer 1993; Brier 2009).

[6]It might be noted, however, that ACT UP's tactics did not always receive sympathetic coverage in the press (Lupton 1994, p. 99; Petro 2015, pp. 158-161).

[7]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).

[8]The brochure, titled Understanding AIDS, explicitly discussed the risks of anal sex and encouraged the use of condoms (Boodman 1988). Sixty percent of Americans reported having received the brochure

tober of 1988, Congress passed the HOPE Act, described as the "first comprehensive effort to combat the AIDS epidemic" (Molotsky 1988). The HOPE Act established the Office of AIDS Research at NIH and authorized the use of approximately $800 million per year for AIDS education, home health care, research, and testing (Molotsky 1988; Banks 1989).

Polls conducted before the 1988 elections show that public opinion on HIV/AIDS, and how best to combat it, was sharply divided (Singer, Rogers, and Glassman 1991; Rogers, Singer, and Imperio 1993). For instance, one poll 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).[9] According to this same poll, 30 percent of Americans thought that Democrats were more likely to have effective proposals for combatting AIDS, 19 percent thought that Republicans were more likely, and 18 percent thought that both parties were equally likely.[10]

Although the two major political parties disagreed on how best to combat HIV/AIDS, exit-polls suggest that the 1988 election did not turn on healthcare-related issues (Blendon and Donelan 1989). Instead, issues relating to national security, economic prosperity, taxes, and crime appear to have been foremost on the minds of voters (Blendon and Donelan 1989). One out of 5 voters did, however, report that healthcare was among the issues they considered when casting their ballot (Blendon and Donelan 1989) and, according to a Gallup poll conducted in 1987, 68 percent of Americans identified AIDS as the most urgent health

(Davis 1991). Conservative advisers to the president such as Gary Bauer and William Bennett, along with many Republican members of the House and Senate, argued that that the government should be encouraging abstinence and heterosexual marriage instead of "safe sex" practices (Brier 2009).

[9]The poll, conducted in July of 1987 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). William F. Buckley Jr., the editor of the *National Review*, had argued the year before that "[e]veryone detected with AIDS should be tatooed in the upper forearm, to protect common-needle users, and on the buttocks, to prevent the victimization of other homosexuals" (Buckley Jr. 1986).

[10]As a general rule, Democrats supported voluntary testing, anti-discrimination protections for HIV-positive individuals, and expanded funding for research, services, and treatment; conservative Republicans supported mandatory testing of high-risk populations, abstinence-oriented education, and reporting the names of HIV-positive individuals to local health departments (Green 2011; Self 2012; Padamsee 2018). See Self (2012) for a detailed description of the American political landscape in the 1980s.

problem facing the country (Moore 1997).[11]

Congress passed The Ryan White Comprehensive AIDS Resources Emergency (CARE) Act on August 4, 1990. It was signed into law by President Bush two weeks later. The Act provided emergency assistance to communities most affected by the epidemic and funded outpatient care (e.g., antiretroviral medications, counseling, and transportation) for uninsured and underinsured HIV/AIDS patients (Buchanan 2002; Siplon 2002, p. 97). Its passage reflected a fundamental shift in the politics of HIV/AIDS (Rasky 1990; Bayer 1991): across the ideological spectrum, there was now broad agreement that the federal government should take the leading role in the fight against the disease.

During the 1992 campaign, "gay issues" came to the fore (Walters 2013, p. 34).[12] Democrats argued that the Ryan White CARE Act should be fully funded and that HIV-positive individuals should be protected from discrimination.[13] Although Republicans attacked the Democratic presidential candidate, 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.[14] When the Act came up for reauthorization in 1995, its passage was delayed by conservatives, led by Senator Helms and Representative Gin-

[11]In October of 1987, 53 percent of Americans agreed with the statement, "The government is not doing enough about the problem of AIDS" (Moore 1997). Ten years later, 51 percent of Americans agreed with the same statement (Moore 1997). According to a poll conducted in November of 1991, only 29 percent of Americans rated President Bush's response to the epidemic as "excellent" or "good"; fully 67 percent rated it as either "fair" or "poor" (Blendon, Donelan, and Knox 1992).

[12]See also Schmalz (1992) and German and Courtright (1999).

[13]The Ryan White CARE Act authorized $875 million in spending for the FY 1991 (Siplon 2002, p. 97) but Congress, which was struggling to trim the budget deficit (Conley 2017), appropriated less than one fourth of this amount, or $221 million. In addition to pledging to fully fund the Ryan White CARE Act, 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."

[14]The 1992 Republican platform pledged support for the fight against HIV/AIDS, stating 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." President Bush argued that current HIV/AIDS funding was sufficient (Schmalz 1992). Mike Huckabee, a conservative Republican running for the U.S. Senate in 1992, argued that, "[i]n light of the extraordinary funds already being given for AIDS research, it does not seem that additional federal spending can be justified" (Allen 2007).

grich, who insisted on mandatory testing of newborns (Seelye 1995).[15] Eventually, however, a compromise was reached and the reauthorization Act passed both houses of Congress with overwhelming bipartisan support (Siplon 2002, p. 90, Padamsee 2018).

2.2. Previous empirical studies

Most empirical studies on the socioeconomic effects of HIV/AIDS in the United States have focused on sexual behavior. One of the earliest of these, Catania et al. (1991), examined condom use among homosexual men living in San Francisco. These authors documented a nearly four-fold increase in condom use from 1984 to 1988, presumably in response to the HIV/AIDS epidemic. McKusick, Horstman, and Coates (1985), Martin (1987), Stall, Coates, and Hoff (1988), and Auld (2006) provide additional evidence that gay men responded to the epidemic by increasing their use of condoms and decreasing the number of sexual partners.

Ahituv, Holtz, and Philipson (1996) drew upon data from the National Longitudinal Survey of Youth (NLSY-1979) for the period 1984-1990 to study condom use among young American adults. These authors found a strong, positive association between AIDS cases in the respondent's state of residence and the likelihood of using a condom. Francis (2008) explored whether being exposed to AIDS can affect sexual orientation. Using nationally representative data from the National Health and Social Life Survey, which was conducted in 1992, Francis (2008) found a negative association between having a relative who was diagnosed with AIDS and the likelihood of engaging in homosexual behavior among men; among women, there was a positive association between having a relative who was diagnosed with AIDS homosexual behavior.

Finally, Fernández, Parsa, and Viarengo (2019) were interested in estimating the effect of the HIV/AIDS epidemic on attitudes towards homosexuals in the United States. Using data from the General Social Survey (GSS) from the period 1973-2002, these authors documented a substantial shift in public opinion in 1992, the year in which "gay issues" became more

[15]Senator Helms argued that federal funding for people living with HIV/AIDS should be cut because of their "deliberate, disgusting, revolting conduct" (Seelye 1995).

visible in politics (Walters 2013, p. 34). Specifically, they found that the percentage of respondents who approved of same-sex relations went from approximately 20 percent to well over 30 percent. Regression analysis showed that states hardest-hit by the epidemic (as measured by the cumulative HIV/AIDS mortality rate through 1992) experienced the largest increases in approval. The results of Ahituv, Holtz, and Philipson (1996), Francis (2008) and Fernández, Parsa, and Viarengo (2019) provide evidence that the impact of the HIV/AIDS epidemic in the United States extended well beyond homosexual men and intravenous drug users.[16]

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 (NCHS). The NVSS contains vital registration data for the United States, including 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

[16]See also Chesson, Dee, and Arral (2003) and Lakdawalla and Goldman (2006). Using panel data at the state-year level, Chesson, Dee, and Arral (2003) found a negative association between AIDS mortality rates and syphilis incidence rates among men. Using data from a nationally representative study of HIV-positive patients (the HIV Costs and Services Utilization Study), Lakdawalla and Goldman (2006) found that providing treatment to HIV-positive individuals was associated with a more than two-fold increase in the number of their sex partners.

[17]Specifically, we constructed crosswalk weights based on the overlap between counties and congressional districts. 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 redistricting. See Markoff and Shapiro (1973) and Goodchild and Lam (1980) for early examples of researchers using this procedure.

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). Accordingly, we measure the intensity of the HIV/AIDS epidemic as:

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

where population of congressional district i comes from the 1980 Census. In 1987, unique ICD-9 codes (042-044) and new assignment procedures were adopted for HIV/AIDS deaths (Chu et al. 1993). 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 as our measure of intensity.

Appendix Figure A1 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. For example, the HIV/AIDS mortality rate in New York's 15$^{\text{th}}$ Congressional District, which includes the East Side of Manhattan, was 182 per 100,000 population. California's 5$^{\text{th}}$ Congressional District, which includes much of San Francisco, experienced 167 deaths from HIV/AIDS per 100,000 population.

[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.

3.2. The Outcomes

Data on elections to the U.S. House of Representatives come from records maintained by Congressional Quarterly. These records contain information on votes received by Democratic and Republican candidates as well as votes received by third-party and fringe candidates.[19] Based on this information, we constructed the following outcomes:

- The vote share received by the Democratic/Republican House candidate, computed as a percentage of the total votes cast in district i and election year t; and
- Democratic/Republican voter turnout, equal to votes received by the candidate per 100,000 voting-age population in district i and election year t.[20]

In addition to voting behavior, we are interested in whether the epidemic affected campaign contributions made to House candidates. Data on contributions made by individuals (as opposed to corporations or political action committees) comes from the Database in Ideology, Money in Politics, and Elections (Bonica 2016) and cover the period 1979-2000. For each contribution, we observe the specific date (i.e., day, month and year) upon which it was transacted, the amount of the transaction, the donor type, and the party of the receiving candidate. Aggregating to the district-year level, we created two additional types of outcomes:

- The dollar value of contributions received by the Democratic/Republican candidate in district i and election year t per 100,000 population (measured in 1980 dollars); and
- the number of contributions (regardless of value) received by the Democratic/Republican candidate per 100,000 voting-age population in district i and election year t.

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

[20] Population estimates are at the county-decade level and are based on 1960-1990 Decennial Census data from NHGIS (Manson et al. 2019). We aggregated to the congressional district level following the crosswalk procedure described in footnote 17.

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:

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

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 regressions of the following form:

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

[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, δ_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.

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

DiD estimates of the association between the HIV/AIDS mortality rate and the election outcomes (i.e., estimates of α_1 from equation (2)) are reported in Panel A of Table 1. A one-unit increase in the HIV/AIDS mortality rate is associated with a .081 percentage point increase in the vote share received by Democratic candidates. It is also associated with 45 more Democratic votes per 100,000 voting-age population. Although not statistically significant at conventional levels, a one-unit increase in the HIV/AIDS mortality rate is associated with a .058 percentage point decrease in the vote share received by Republican candidates and 5 fewer Republican votes per 100,000 voting-age population.

At first blush, these estimates may seem trivially small. The typical (i.e., 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

[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.

point ($4.8 \times .081 = .389$), which would have changed the outcome of very few elections.[23] 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 5$^{\text{th}}$ Congressional District, which encompasses much of Atlanta, experienced an HIV/AIDS mortality rate of 34.4. We estimate that the epidemic caused 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 (i.e., estimates of π and β from equation (3)) are reported in Figure 1 and Panel B of Table 1.[25] The estimates of π are, with only a few exceptions, small and statistically indistinguishable from zero; consistent with the parallel trends assumption, there is little 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, in 1988 (the first election year in the post-treatment period), the estimates of β are small and statistically insignificant at conventional levels. In fact, the HIV/AIDS epidemic does not appear to have consistently impacted voting behavior until the 1994 elections.[26]

The estimated impact of HIV/AIDS mortality on voting behavior becomes notably stronger after the 1996 election. 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 is associated with a .202 percentage point increase in the vote share received by the Democratic candidate, a .168 percentage point decrease in the vote share received by the Republican candidate, 112

[23]During the period under study, the typical margin of victory in House races was approximately 30 percentage points. Under two percent of elections were decided by less than one percentage point.

[24]To take another example, California's 5$^{\text{th}}$ Congressional District, which encompassed much of San Francisco, experienced an HIV/AIDS mortality rate of 167.5, which suggests that the Democratic vote share increased by 13.6 percentage points between the pre- and post-treatment periods ($167.5 \times .081 = 13.57$).

[25]For the sake of completeness, we report estimates of the effects of the HIV/AIDS epidemic on third-party vote share turnout in Appendix Figure A2.

[26]In the 1994 elections, a one-unit increase in the HIV/AIDS mortality rate is associated with 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.

more votes for the Democratic candidate (per 100,000 voting-age population) and 104 fewer votes for the Republican candidate (per 100,000 voting-age population).

These estimates suggest that, although it took several election cycles to manifest, 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 ($4.8 \times 112 = 537.6$).

The effects of the epidemic documented in Table 1 can be summarized by examining the association between HIV/AIDS mortality and the probability of the Democratic candidate winning in election year t and district i. DiD estimates of this association, reported in Panel A of Table 2, are small and statistically insignificant. Likewise, the estimates of β are statistically insignificant for the 1988-1994 elections (Figure 2 and Panel B of Table 2). Beginning with the 1996 election, however, the estimates of β become positive and are clearly distinguishable from zero in a statistical sense. By the 2000 election, a one-unit increase in the HIV/AIDS mortality rate is associated with a .003 increase in the probability of the Democratic candidate winning. For a Democratic candidate running in the median congressional district (i.e., a district that experienced 4.8 HIV/AIDS deaths per 100,000 population), 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.[27]

[27] A Democrat running in a district at the 75th percentile (i.e., a district that experienced 10.4 HIV/AIDS deaths per 100,000 population) saw a .031 increase in their probability of winning ($10.4 \times .003 = .031$); a Democrat running in a district at the 90th percentile (i.e., a district that experienced 23.7 HIV/AIDS deaths per 100,000 population) saw a .071 increase in their probability of winning ($23.7 \times .003 = .071$).

6. Robustness Checks and Extensions

6.1. Robustness Checks

Table 3 reports the results of various robustness checks. In the first column, we reproduce the DiD estimates from Table 1. 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.[28] Again, our results are qualitatively unchanged.

In columns (5) and (6) of Table 3, we experiment with using different treatment periods. Specifically, in column (5) we measure the intensity of the epidemic as the total number of HIV/AID 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). The DiD estimates continue to show that Democratic candidates benefited from the epidemic at the expense of their Republican counterparts.

Finally, in column (7) of Table 3, we show DiD estimates winsorizing the HIV/AIDS mortality rate at the 99^{th} percentile to address the possibility that a subset of districts with disproportionately high mortality rates are driving our results. The estimates are qualitatively unchanged with this restriction in place.[29]

6.2. Effects by Outcomes of Previous Elections

Next, we explore whether the effects of the HIV/AIDS epidemic differed by whether Reagan carried the district in 1980. The results are reported in Figure 3 and Tables 4A

[28] In the baseline regression, the 1983-1987 HIV/AIDS mortality rate reflects decadal shifts in congressional district boundaries due to redistricting.

[29] In Appendix Figure A3, we replace the replace the HIV/AIDS mortality rate with mortality due to cardiovascular diseases. We find little evidence that cardiovascular mortality is systematically related to Democratic or Republican vote shares or voter turnout.

and 4B. The DiD estimates provide little evidence that the effect of the epidemic on vote share differed across these two types of congressional districts. A one-unit increase in the HIV/AIDS death rate is associated with a .084 percentage point increase in Democratic vote share in districts that Reagan lost as compared to a .12 percentage point increase in districts that Reagan won (Table 4A), but these estimates are not sufficiently precise to reject the hypothesis that they are equal.[30]

The event-study estimates tell a similar story. In general, we cannot reject the hypothesis that the effects of the epidemic were the same across these two types of districts. Beginning in 1994, however, there is evidence that the effects of the epidemic were actually more pronounced in districts that Reagan won. For instance, a one-unit increase in the HIV/AIDS death rate is, by the 2000 elections, associated with a .447 percentage point increase in Democratic vote share and 180 more Democratic votes in districts that Reagan won.[31] By contrast, a one-unit increase in the HIV/AIDS death rate is associated with a .141 percentage point increase in Democratic vote share and 91 more Democratic votes (per 100,000 voting-age population) in districts that Reagan lost.

In Figure 4 and Table 5, 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. With one exception (Democratic voter turnout), the DiD estimates for competitive districts are not statistically significant at conventional levels, while the event-study estimates provide evidence that the effects of the epidemic manifested earlier, and were more pronounced, in competitive districts.

[30]Similarly, we cannot reject the hypothesis that the DiD estimates are equal across these two types of districts when Republican vote share or Democratic voter turnout are on the left-hand side of the regression. There is, however, evidence that the negative effect on Republican voter turnout is greater in districts that Reagan won.

[31]The 91 additional Democratic votes correspond to 0.25 percent of the mean in districts that Reagan lost. The 180 additional Democratic votes correspond to 0.53 percent of the mean in districts that Reagan won. These estimates, however, are not sufficiently precise to reject the hypothesis that they are equal. In Appendix Figure A4 and Appendix Table A1, we explore whether the effects of the HIV/AIDS epidemic on the probability of the Democratic candidate winning were different depending on whether Reagan carried the district in 1980. Again, we cannot reject the hypothesis that the DiD estimates are equal across these two types of districts.

Specifically, the estimates of β for competitive districts are statistically distinguishable from zero as early as 1992 and are, without exception, lager (in absolute magnitude) than the corresponding full-sample estimates.[32]

6.3. 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).[33] 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).

African American AIDS patients often faced different challenges than those facing their white counterparts.[34] 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).[35]

[32]In the 1992 elections, a one-unit increase in the HIV/AIDS mortality rate is associated with a .004 increase in the probability of the Democratic candidate winning in what we are characterizing as competitive districts (Figure 2 and 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 ($4.8 \times .004 = .0192$) as compared to 1982. In the 1996-2000 elections, a one-unit increase in the HIV/AIDS mortality rate is associated with a .005 increase in the probability of the Democratic candidate winning competitive districts (Figure 2 and Table 2).

[33]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.

[34]While most AIDS cases among black men and women were related to intravenous drug use, the main transmission mechanism for white men was through homosexual sex (Selik, Castro, and Pappaioanou 1988). Environmental and historical factors, such as high poverty rates, lack of adequate housing, and low trust in the government among blacks contributed to differences in the grass-root organization and political response to AIDS (Quimby and Friedson 1989; Cohen 1999).

[35]Misinformation about the origin of the disease and mistrust about the efficacy and goal of different mitigation policies (such as needle exchange programs and condom distribution) impacted the attitudes of African Americans towards the disease and delayed the response of black church leaders and black politicians (Thomas and Quinn 1993; Quinn 1997; Gaston and Alleyne-Green 2013). For an excellent history on HIV/AIDS black mobilization see Cohen (1999).

As a first step in examining 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 these two measures on the right-hand side.[36] Race-specific DiD estimates are reported in Panel A of Tables 6A and 6B. In general, they provide little evidence that voters responded to the race of the victim. For instance, a one-unit increase in the white HIV/AIDS mortality rate is associated with a .124 increase in Democratic vote share. 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.[37]

6.4. HIV/AIDS and Presidential Elections

In Appendix Table A2, we explore the effect of the HIV/AIDS epidemic on votes received by Presidential candidates. DiD estimates, reported in Panel A of Appendix Table A2, show that a one-unit increase in the HIV/AIDS mortality rate in district i and election year t is associated with a .096 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. The DiD estimates also provide evidence that the epidemic eventually increased Democratic, but not Republican, voter turnout.

The effect of the HIV/AIDS epidemic on presidential voting is discernible as early as 1988 (Appendix Table A2 and Appendix Figure A5). From 1988 to 2000, the estimated effect of HIV/AIDS mortality on Democratic vote share doubles, while the estimated effect on Democratic turnout increases by approximately 40 percent. By the 2000 presidential election, a one-unit increase in the HIV/AIDS mortality rate is associated with a .189 percentage point

[36] 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.

[37] Event-study estimates do provide evidence that white HIV/AIDS mortality affected voting behavior as early as the 1994 elections (Figure 5 and Panel B of Table 6A). By contrast, the estimated effects of black HIV/AID mortality are smaller and less precise until the 1998 elections. This pattern of results is consistent with historical accounts describing the lengthy process of mobilizing black politicians and voters around the issue of HIV/AIDS (Shipp and Navarro 1991; Thomas and Quinn 1993; Cohen 1999).

increase in the Democratic vote share. For Al Gore, the Democratic nominee in 2000, this translated into a .91 percentage point increase in vote share (4.8 × .189 = .907) in the median congressional district (i.e., a district that experienced 4.8 HIV/AIDS deaths per 100,000 population).

7. Campaign Contributions

In this section, we shift our focus from voting behavior to campaign contributions. As noted in Section 3, contributions to candidates for House seats are measured in 1980 dollars per 100,000 voting-age population; contributions made by corporations and political action committees are not included in these totals.[38]

DiD estimates provide further evidence that the HIV/AIDS epidemic spurred political participation to the benefit of Democratic candidates (Panel A of Table 7). A one-unit increase in the HIV/AIDS mortality rate is associated with a $671 increase in contributions to Democratic candidates per 100,000 voting-age population. For a Democrat running in a district that experienced 4.8 HIV/AIDS deaths per 100,000 population during the treatment period (the median), this translates to an increase of $3,221 as compared to 1982 (4.8 × 671 = 3,221), or about 8 percent of the sample mean. A one-unit increase in the HIV/AIDS mortality rate is also associated with 0.52 more contributions to Democratic candidates per 100,000 voting-age population.[39] DiD estimates of the impact of HIV/AIDS deaths on contributions to Republican candidates, although positive, are smaller and statistically insignificant.[40]

Event-study estimates (i.e., estimates of π and β) provide evidence that the effect of the

[38]It might be noted that campaign contributions in the 70s and 80s were only a fraction of what they are today. The results reported in Table 7 and Figure 6 suggest that contributions to Democratic candidates in districts that were disproportionately impacted by the HIV/AIDS epidemic increased at the same time that campaign contributions were, in general, dramatically increasing across the board.

[39]For a Democrat running in a district that experienced 4.8 HIV/AIDS deaths per 100,000 population during the treatment period (the median), this translates to two and a half additional donations per 100,000 voting age population as compared to 1982 (4.8 × 0.52 = 2.50), or about a 6 percent of the sample mean.

[40]For the sake of completeness, we report estimates of the effects of the HIV/AIDS epidemic on campaign contributions to third-party candidates in Appendix Figure A6.

epidemic on contributions to Democratic House candidates grew stronger over time (Figure 6 and Panel B of Table 7). 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 $286 increase in contributions to Democratic candidates per 100,000 voting-age population; 4 years later, it is associated with a (statistically insignificant) $672 increase in in contributions to Democratic candidates; by the 2000 election, it is associated with a $1,218 increase in contributions to Democratic candidates. The number of contributions to Democratic candidates (as opposed to the dollar value of contributions) exhibit a similar trend, although the estimates of π and β are not as precise. Finally, there is little evidence that the epidemic affected campaign contributions made to Republican candidates.[41]

8. Conclusion

To date, HIV/AIDS has claimed over 700,000 lives in the United States and more than a million Americans are currently living with HIV (Kaiser Family Foundation 2019). The initial public health response to the epidemic has consistently been characterized as underfunded and lacking in urgency (Shilts 1987; Brier 2009; Francis 2012) but, as HIV/AIDS spread across the country and affected a broader demographic mix, Congress came under increasing pressure to respond (Shaw 1987; Padamsee 2018). In the late 1980s and early 1990s, there was progress on the legislative front in the form of the HOPE and Ryan White CARE Acts, which greatly expanded the role of the federal government in the fight against HIV/AIDS (Padamsee 2018).

In this paper, we explore the effects of the HIV/AIDS epidemic on voting in elections to the U.S. House of Representatives. To our knowledge, it is the first attempt to explore the effects of a deadly, widespread epidemic on voting behavior. Leveraging cross-district variation in HIV/AIDS mortality during the period of 1983-1987, we find consistent evidence

[41] In the 2000 election, there is evidence of a positive association between HIV/AIDS deaths and donations to Republican candidates, but neither of the β estimates is significant.

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. By the 2000 election, as additional HIV/AIDS death per 100,000 population is associated with a 1.4 percentage point increase in the chances of winning for a Democrat running in the median district (i.e., a district that experienced 4.8 HIV/AIDS deaths per 100,000 population during the period 1983-1987). Democrats running in congressional districts that bore the brunt of the epidemic (such as California's 5th Congressional District 5, which experienced 167 HIV/AIDS deaths per 100,000 population) saw even greater increases in their chances of winning.

Our results are consistent with polling from the late 1980s: Americans thought that Democrats were more likely than Republicans to have effective proposals for combatting HIV/AIDS (Steinbrook 1987). They might also be interpreted as evidence that voters are on track to punishing Republican candidates running in districts that have been hardest-hit by Covid-19, another deadly disease for which there is, at least as of yet, no effective vaccine or cure. If Covid-19 continues to claim lives, and if the public-health response at the federal level is perceived by voters to be inadequate, then substantial shifts in voting behavior are possible.

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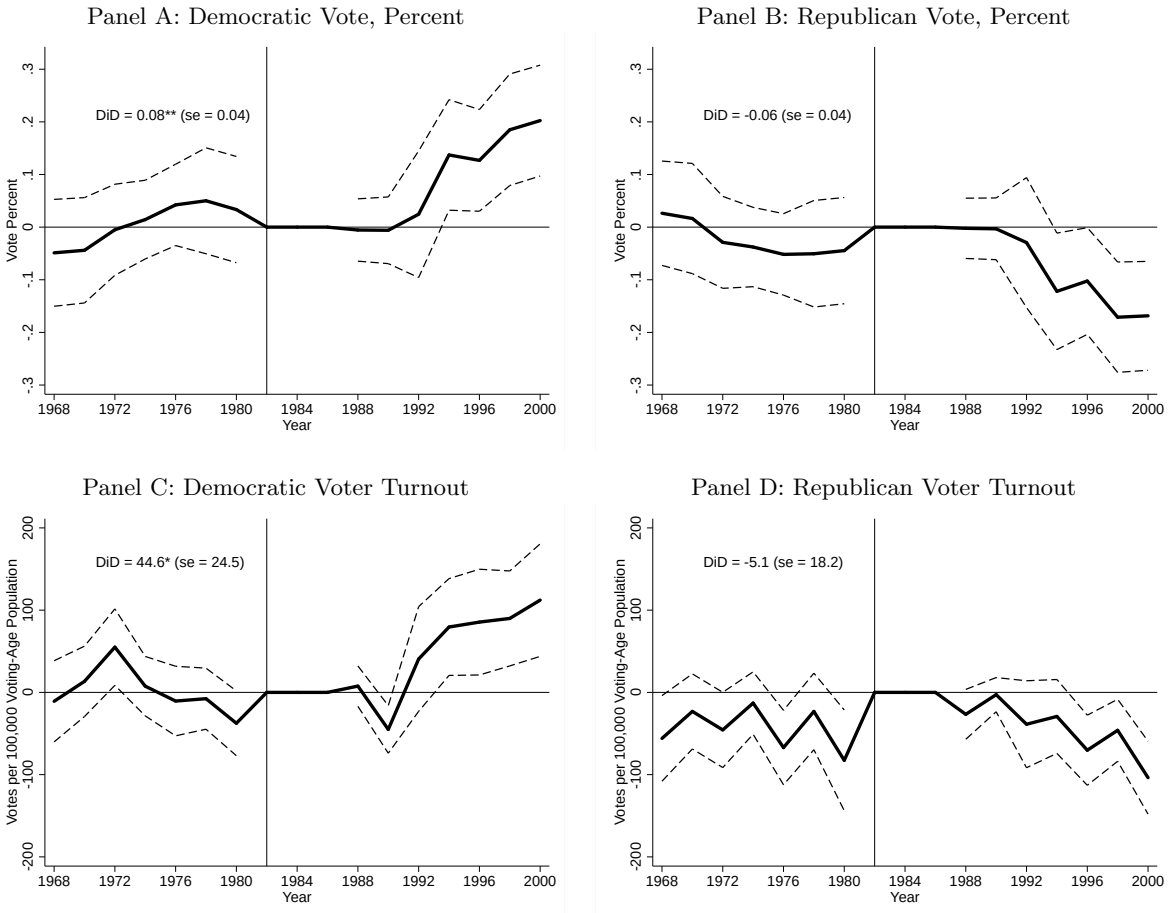
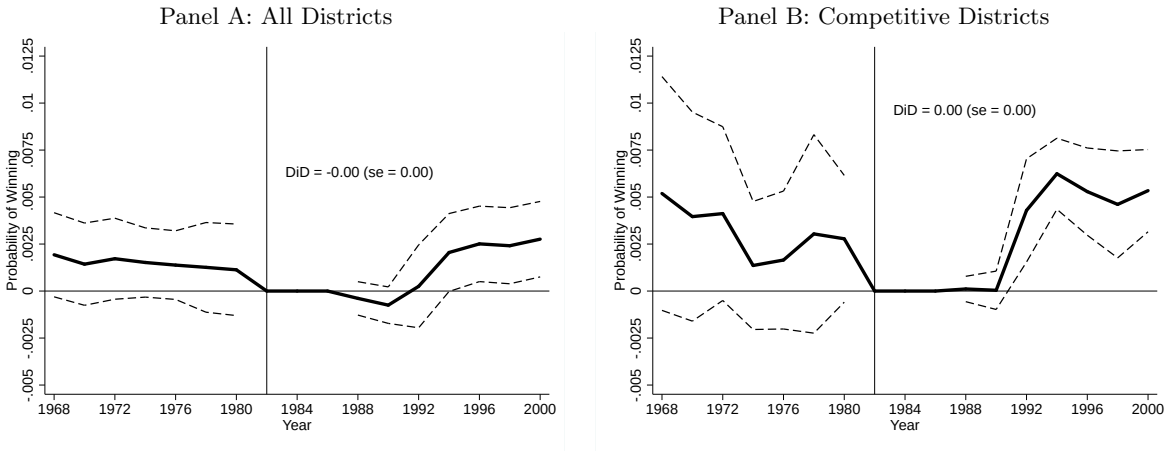
Figure 1. HIV/AIDS Mortality and Voting Behavior



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. The vertical line indicates the year 1982 and we exclude data from the 1984 and 1986 elections. 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.

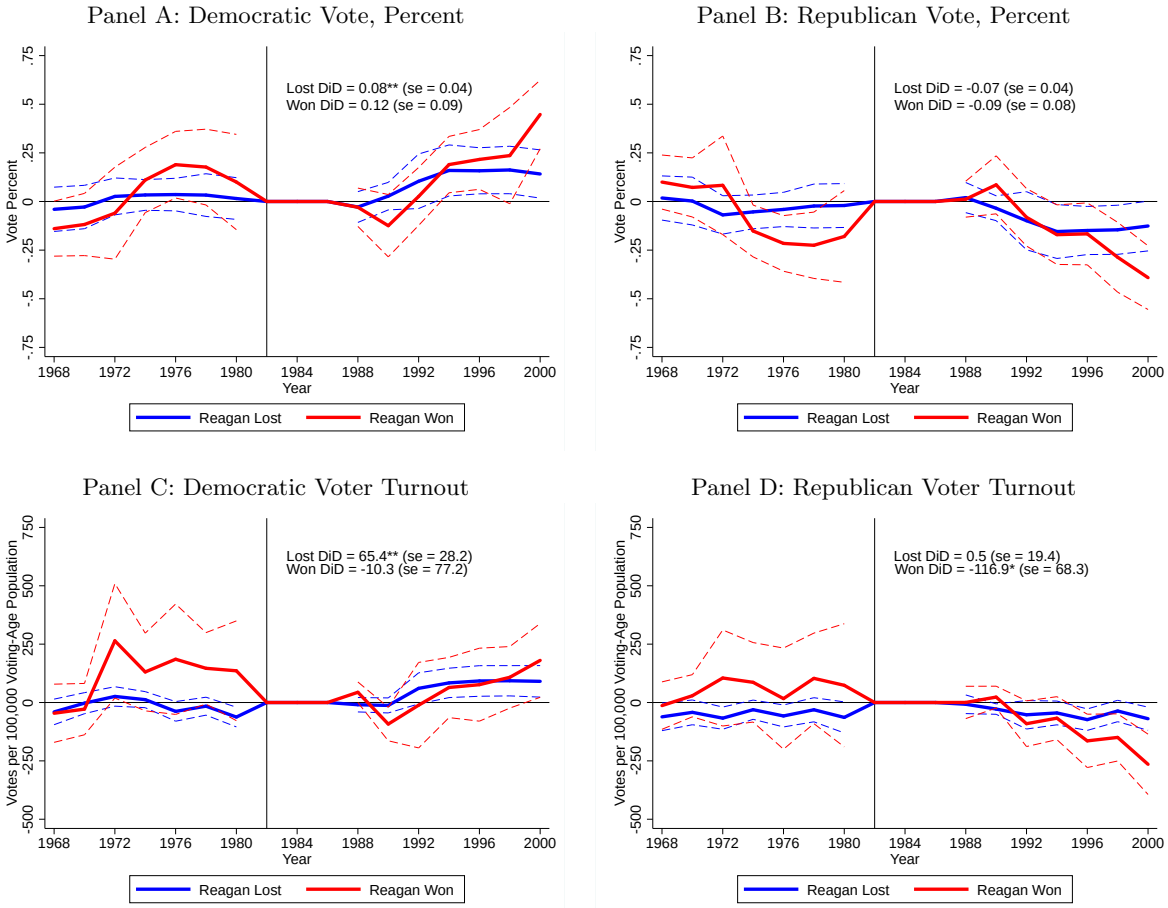
Figure 2. HIV/AIDS Mortality and the Probability of a Democratic Win



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 sample in Panel B 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 the 1984 and 1986 elections. 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.

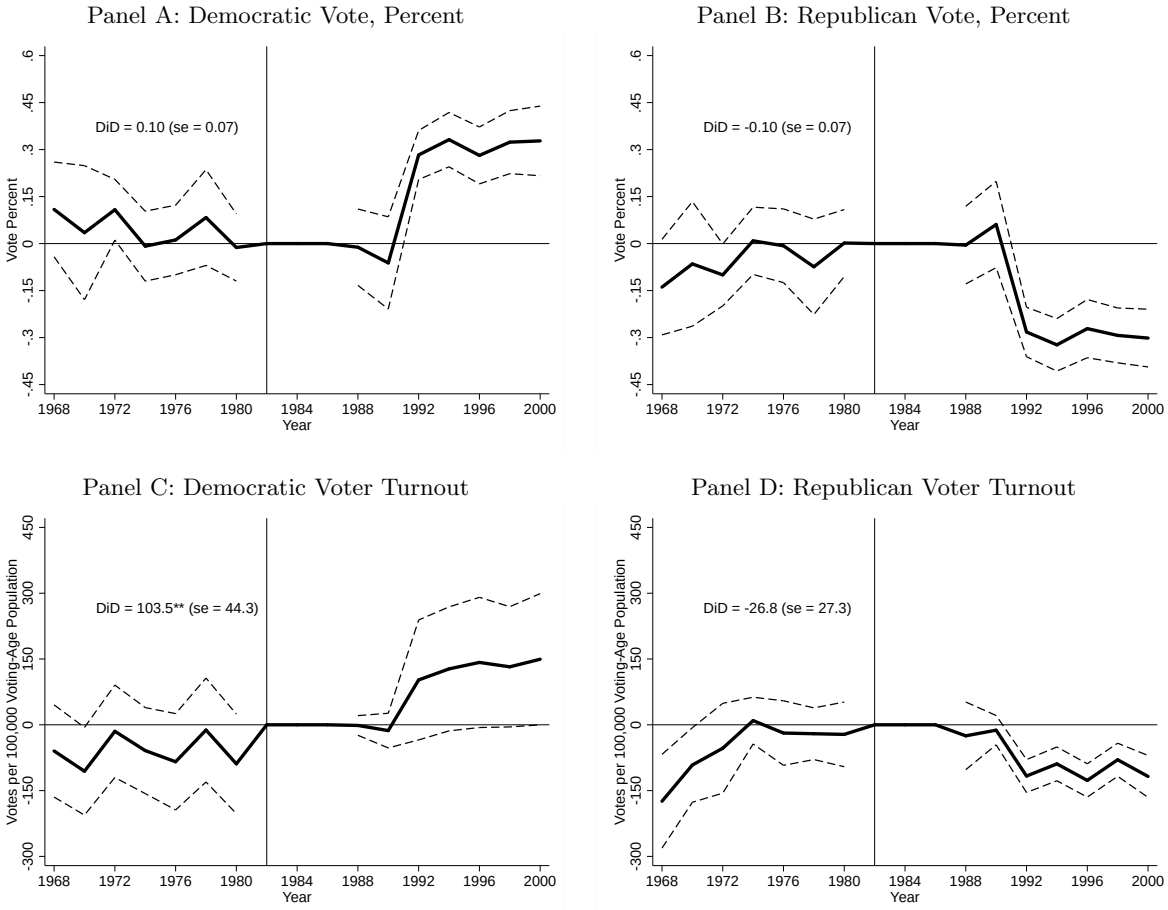
Figure 3. HIV/AIDS Mortality and Voting Behavior: Districts Reagan Won in 1980 vs. Districts Reagan Lost



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. The vertical line indicates the year 1982 and we exclude data from the 1984 and 1986 elections. 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.

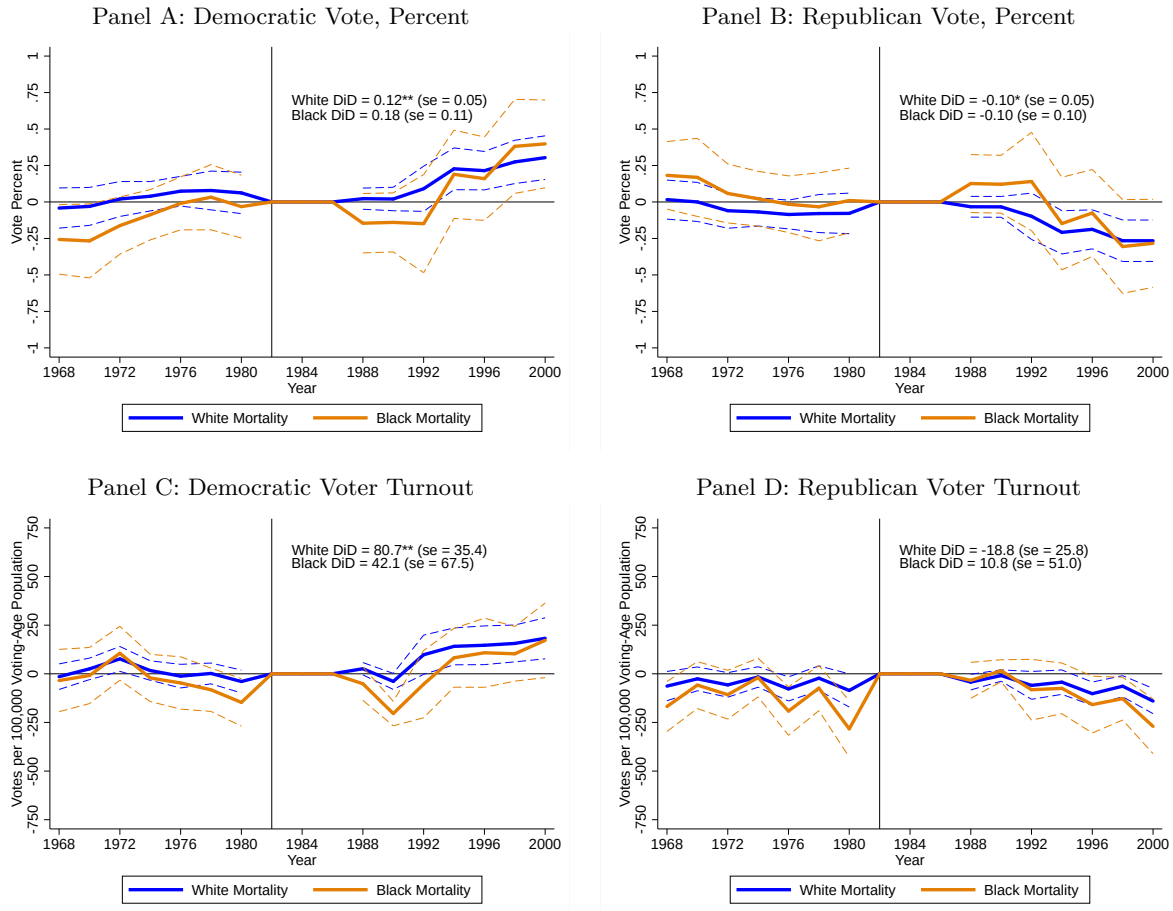
Figure 4. HIV/AIDS Mortality and Voting Behavior: Sample Restricted to Competitive Districts



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. The vertical line indicates the year 1982 and we exclude data from the 1984 and 1986 elections. 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 by Race and Voting Behavior

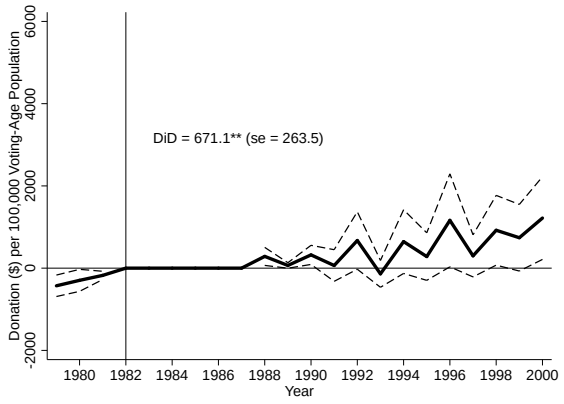


Notes: OLS estimates of π and β from equation (3) weighted by voting-age population are shown. The blue line reports estimates of π and β, replacing aggregate HIV/AIDS mortality with white HIV/AIDS mortality; and the orange line reports estimates of π and β, replacing aggregate HIV/AIDS mortality with 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. The vertical line indicates the year 1982 and we exclude data from the 1984 and 1986 elections. 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.

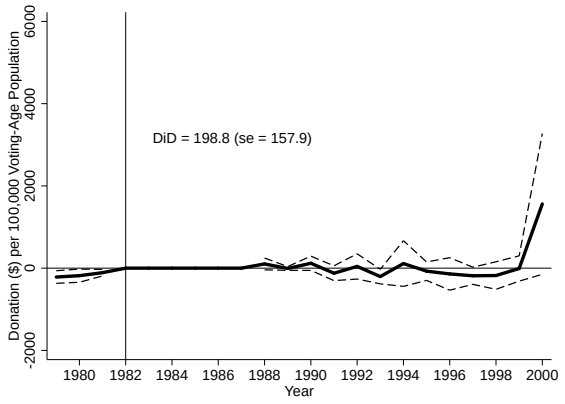
* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

Figure 6. HIV/AIDS Mortality and Campaign Contributions

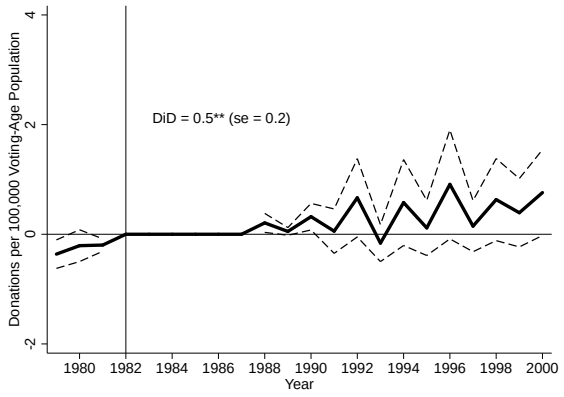
Panel A: Contributions to Democratic House Candidates in 1980 Dollars



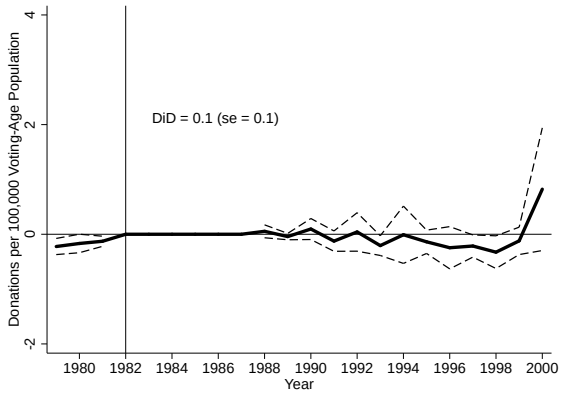
Panel B: Contributions to Republican House Candidates in 1980 Dollars



Panel C: Number of Contributions to Democratic House Candidates



Panel D: Number of Contributions to Republican House Candidates



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 to 1987. 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. 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.

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.

Table 3. Robustness Checks

	Baseline Estimate	Weight By Total Pop.	Cluster at State-Level	Time-Invariant AIDS Mapping	1983-1986 Death Rate	1987 Death Rate	Winsorize AIDS 99th Percentile
Panel A: House Vote Share	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Democratic Vote Share	0.081**	0.080**	0.081***	0.083*	0.164**	0.153**	0.083*
	(0.037)	(0.038)	(0.027)	(0.048)	(0.073)	(0.077)	(0.043)
Republican Vote Share	−0.058	−0.056	−0.058*	−0.063	−0.115	−0.111	−0.056
	(0.037)	(0.038)	(0.031)	(0.046)	(0.075)	(0.077)	(0.044)
Panel B: Voter Turnout							
Democratic Voter Turnout	44.6*	42.7*	44.6	40.6	84.5*	91.0*	46.8
	(24.5)	(25.0)	(28.3)	(29.9)	(44.8)	(52.8)	(29.3)
Republican Voter Turnout	−5.1	−5.8	−5.1	−10.8	−3.9	−14.5	−4.0
	(18.2)	(18.9)	(24.4)	(19.7)	(35.8)	(37.8)	(20.8)
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) presents 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) winsorizes the HIV/AIDS mortality rate at the 99th 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.

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)	(0.150)	(0.077)	(0.109)
HIV/AIDS Rate × **1**[Year = 2000]	0.141*	0.447***	−0.126	−0.392***
	(0.075)	(0.107)	(0.078)	(0.099)
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.

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
	(18.7)	(26.8)	(24.3)	(42.1)
HIV/AIDS Rate × **1**[Year = 1990]	−12.5	−92.3**	−28.1**	23.1
	(19.6)	(43.5)	(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**
	(39.8)	(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***
	(41.0)	(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.

Table 5. HIV/AIDS Mortality and Voting Behavior: Sample Restricted to 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)	(0.069)	(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)	(83.1)	(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)	(0.056)	(90.2)	(23.1)
HIV/AIDS Rate × **1**[Year = 1998]	0.324***	−0.293***	132.2	−79.7***
	(0.061)	(0.053)	(83.3)	(22.9)
HIV/AIDS Rate × **1**[Year = 2000]	0.328***	−0.302***	149.5	−117.7***
	(0.068)	(0.056)	(90.9)	(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.

Table 6A. 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)	(0.195)
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.

Table 6B. 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)	(94.9)
HIV/AIDS Rate × **1**[Year = 1994]	141.1**	82.3	−43.0	−74.9
	(57.6)	(91.8)	(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.

Table 7. HIV/AIDS Mortality and Campaign Contributions

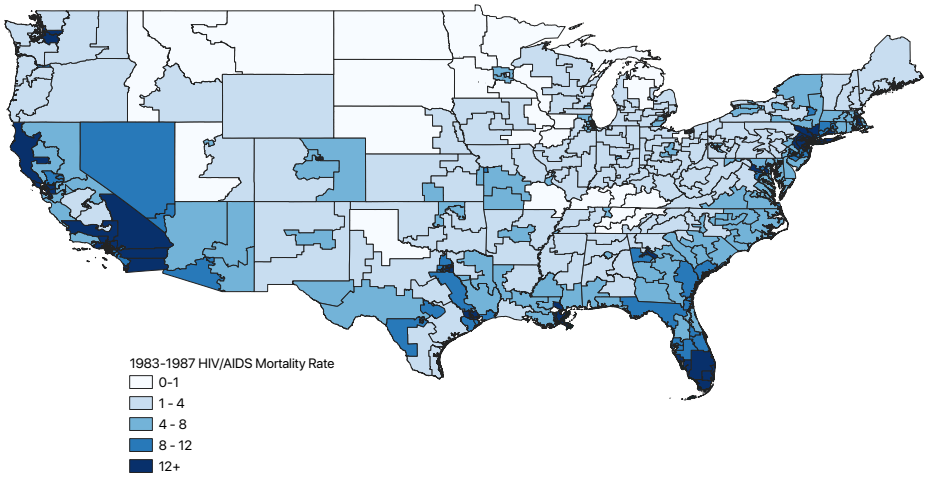
	Amount of Contributions		Number of Contributions	
	Democrat	Republican	Democrat	Republican
Panel A: DiD Estimates	(1)	(2)	(3)	(4)
HIV/AIDS Rate × **1**[Year ≥ 1988]	671.1**	198.8	0.516**	0.104
	(263.5)	(157.9)	(0.217)	(0.124)
Panel B: Event-Study Estimates				
HIV/AIDS Rate × **1**[Year = 1988]	286.0**	102.6	0.207**	0.054
	(133.2)	(87.4)	(0.105)	(0.072)
HIV/AIDS Rate × **1**[Year = 1989]	65.5	−7.3	0.052	−0.043
	(40.6)	(27.5)	(0.043)	(0.035)
HIV/AIDS Rate × **1**[Year = 1990]	322.6**	118.4	0.321**	0.096
	(141.4)	(105.5)	(0.147)	(0.116)
HIV/AIDS Rate × **1**[Year = 1991]	64.2	−123.5	0.056	−0.125
	(234.0)	(109.6)	(0.246)	(0.113)
HIV/AIDS Rate × **1**[Year = 1992]	672.4	42.1	0.665	0.042
	(424.6)	(186.7)	(0.434)	(0.213)
HIV/AIDS Rate × **1**[Year = 1993]	−138.9	−204.5*	−0.162	−0.207*
	(198.4)	(107.8)	(0.205)	(0.109)
HIV/AIDS Rate × **1**[Year = 1994]	645.7	111.7	0.578	−0.009
	(470.9)	(337.8)	(0.476)	(0.318)
HIV/AIDS Rate × **1**[Year = 1995]	281.3	−73.4	0.115	−0.138
	(351.5)	(136.2)	(0.306)	(0.129)
HIV/AIDS Rate × **1**[Year = 1996]	1,162.8*	−140.6	0.910	−0.246
	(687.4)	(240.3)	(0.604)	(0.234)
HIV/AIDS Rate × **1**[Year = 1997]	298.9	−185.2	0.148	−0.214*
	(311.1)	(126.4)	(0.283)	(0.123)
HIV/AIDS Rate × **1**[Year = 1998]	921.3*	−179.7	0.632	−0.327*
	(515.7)	(203.8)	(0.455)	(0.181)
HIV/AIDS Rate × **1**[Year = 1999]	739.5	−8.5	0.393	−0.121
	(492.3)	(186.6)	(0.379)	(0.152)
HIV/AIDS Rate × **1**[Year = 2000]	1,218.1**	1,561.5	0.760	0.822
	(611.4)	(1,040.8)	(0.476)	(0.680)
Mean of Dep. Var.	40,858.1	45,881.0	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 contribution 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.

Appendix A. Additional Results

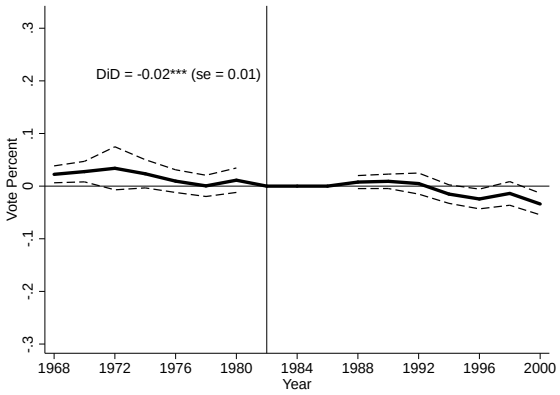
Appendix Figure A1. HIV/AIDS Mortality Rate in Congressional Districts



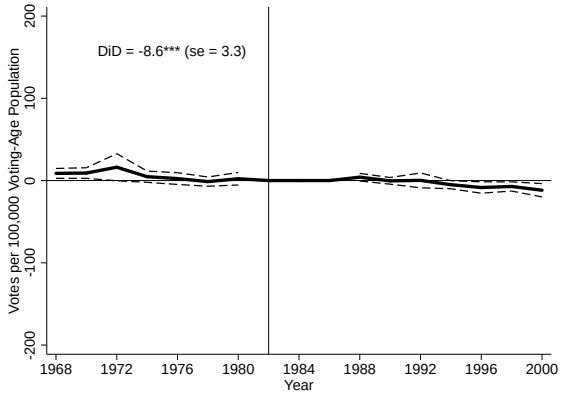
Notes: This figure reports 1983-1987 HIV/AIDS mortality rates per 100,000 population in congressional districts from 1982.

Appendix Figure A2. HIV/AIDS Mortality and Third-Party Voting Behavior

Panel A: Third-Party Vote, Percent



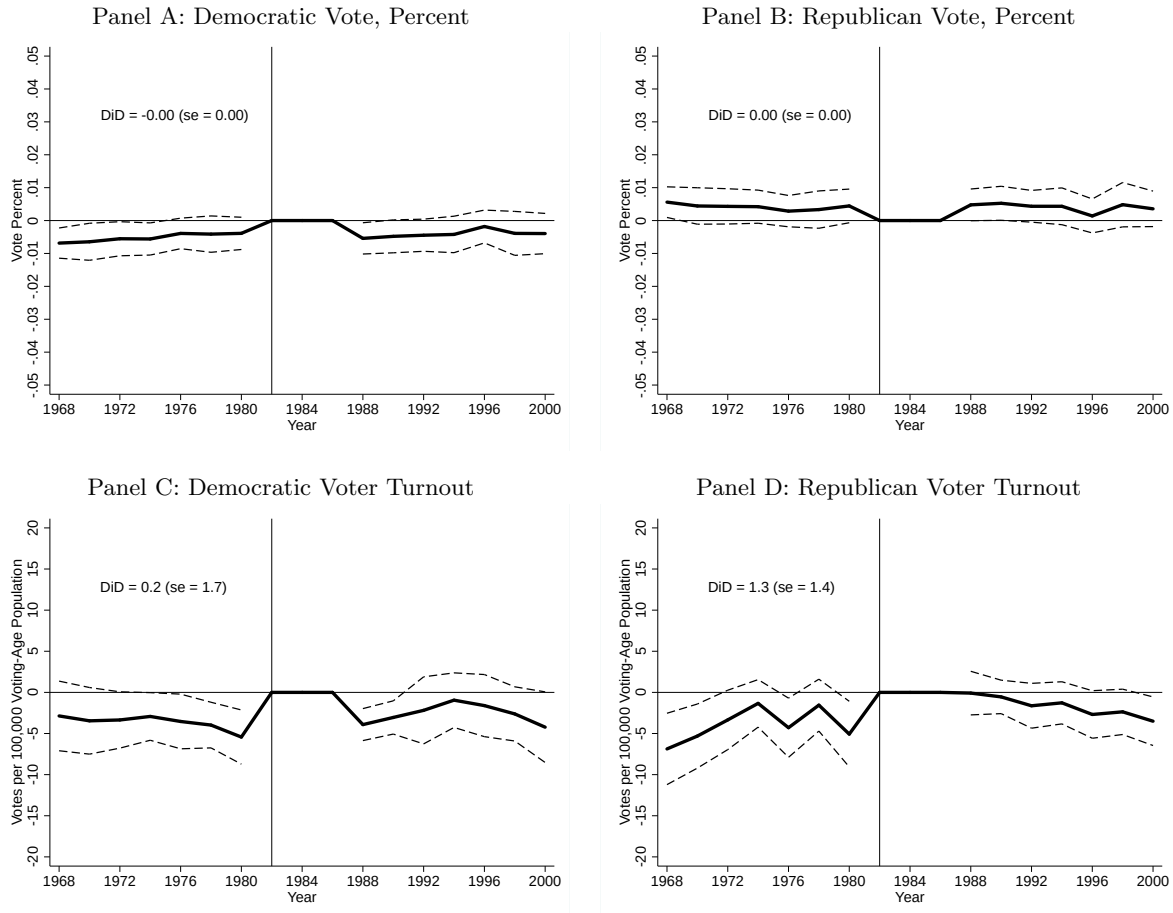
Panel B: Third-Party Voter Turnout



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 third-party vote in district i and year t; and in Panel B, the dependent variable is third-party votes per 100,000 voting-age population. The vertical line indicates the year 1982 and we exclude data from the 1984 and 1986 elections. 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.

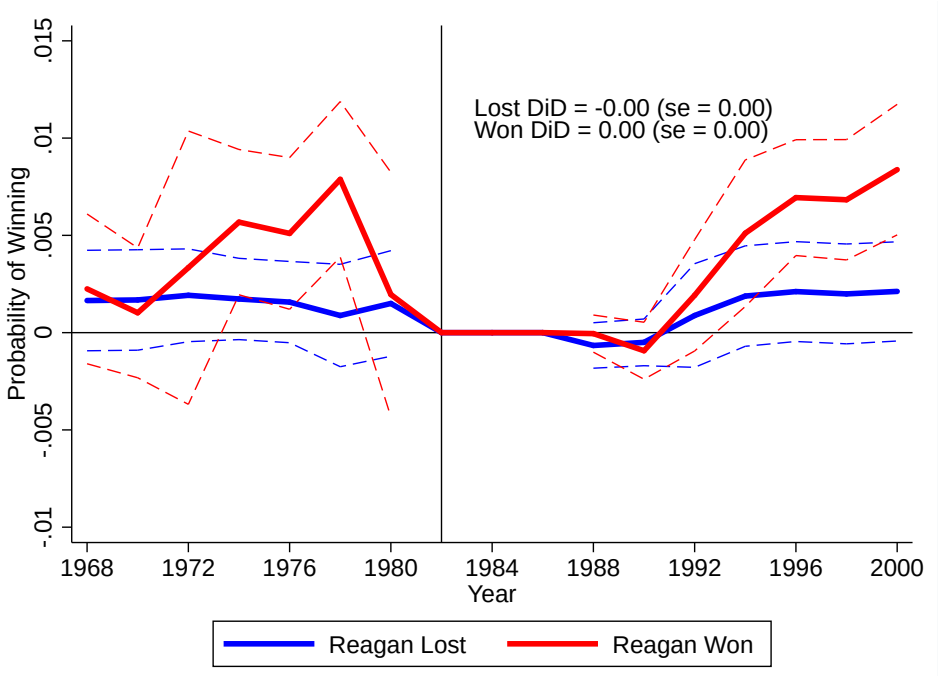
Appendix Figure A3. Cardiovascular Disease Mortality and Voting Behavior



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. The vertical line indicates the year 1982 and we exclude data from the 1984 and 1986 elections. 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.

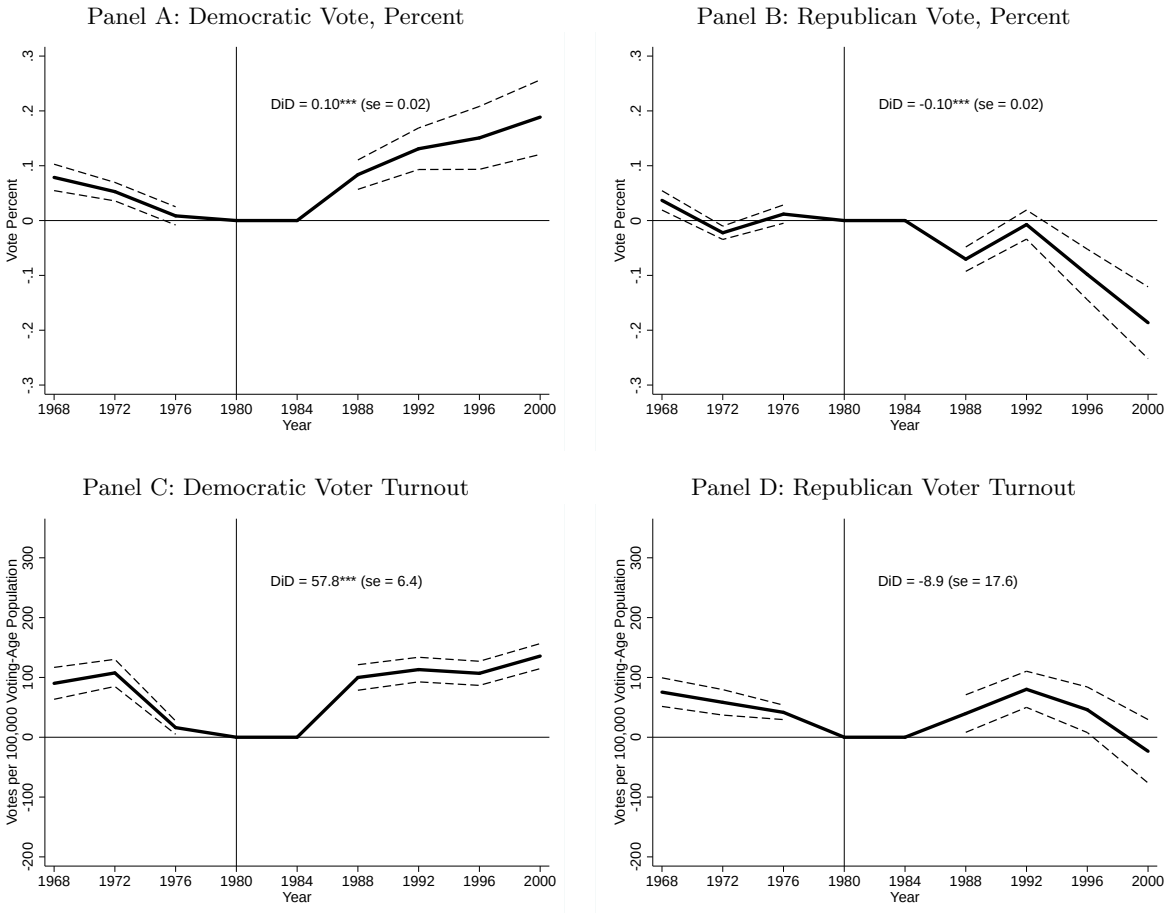
Appendix Figure A4. HIV/AIDS Mortality Rate and the Probability of a Democratic Win: Districts Reagan Won in 1980 vs. Districts Reagan Lost



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 is the probability of a Democratic win. The vertical line indicates the year 1982 and we exclude data from the 1984 and 1986 elections. 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 A5. HIV/AIDS Mortality and Presidential Election Outcomes

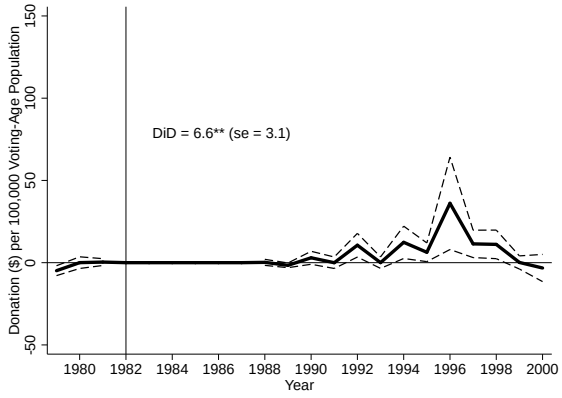


Notes: OLS estimates of π and β from equation (3) weighted by voting-age population are shown. The dependent variable in Panel A is the percent Democratic vote in district i and year t; in Panel B, the dependent variable is the percent Republican vote; in Panel C, the dependent variable is Democratic 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 the 1984 election. 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.

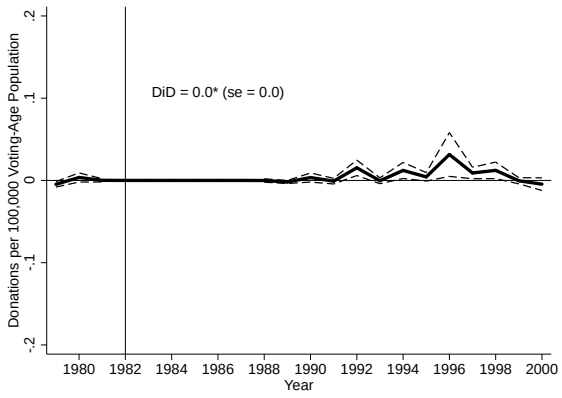
* Statistically significant at 10 percent level; ** at 5 percent level; *** at 1 percent level.

Appendix Figure A6. HIV/AIDS Mortality and Campaign Contributions to Third-Party Candidates

Panel A: Contributions to Third-Party House Candidates in 1980 Dollars



Panel B: Number of Contributions to Third-Party Candidates



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 to third-party House candidates (in 1980 dollars) per 100,000 voting-age population in district i and year t; and in Panel B, the dependent variable is the number of contributions to third-party House candidates per 100,000 voting-age population. The vertical line indicates the year 1982 and we exclude data from 1983-1987. 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 A1. HIV/AIDS Mortality and the Probability of Democratic Win Event-Study Coefficients: Districts Reagan Won in 1980 vs. Districts Reagan Lost

	Reagan Lost	Reagan Won
Panel A: DiD Estimates	(1)	(2)
HIV/AIDS Rate × **1**[Year ≥ 1988]	−0.0004	0.0007
	(0.0009)	(0.0014)
Panel B: Event-Study Estimates		
HIV/AIDS Rate × **1**[Year = 1988]	−0.0007	−0.0001
	(0.0007)	(0.0006)
HIV/AIDS Rate × **1**[Year = 1990]	−0.0005	−0.0009
	(0.0007)	(0.0009)
HIV/AIDS Rate × **1**[Year = 1992]	0.0009	0.0019
	(0.0016)	(0.0017)
HIV/AIDS Rate × **1**[Year = 1994]	0.0019	0.0051**
	(0.0016)	(0.0023)
HIV/AIDS Rate × **1**[Year = 1996]	0.0021	0.0069***
	(0.0016)	(0.0018)
HIV/AIDS Rate × **1**[Year = 1998]	0.0020	0.0068***
	(0.0016)	(0.0019)
HIV/AIDS Rate × **1**[Year = 2000]	0.0021	0.0084***
	(0.0016)	(0.0020)
Mean of Dep. Var.	0.823	0.464
Observations	1,934	4,315
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. Column (1) restricts the sample to districts that Reagan won in 1980 and Column (2) restricts the sample to districts that Reagan lost 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 A2. HIV/AIDS Mortality and Presidential Elections Outcomes

	Vote Percent		Voter Turnout	
	Democrat	Republican	Democrat	Republican
Panel A: DiD Estimates	(1)	(2)	(3)	(4)
HIV/AIDS Rate × **1**[Year ≥ 1988]	0.096***	−0.096***	57.8***	−8.9
	(0.021)	(0.020)	(6.4)	(17.6)
Panel B: Event-Study Estimates				
HIV/AIDS Rate × **1**[Year = 1988]	0.084***	−0.070***	99.9***	39.6**
	(0.016)	(0.014)	(13.0)	(19.1)
HIV/AIDS Rate × **1**[Year = 1992]	0.131***	−0.007	113.1***	80.1***
	(0.023)	(0.016)	(12.5)	(18.4)
HIV/AIDS Rate × **1**[Year = 1996]	0.151***	−0.098***	106.9***	46.0**
	(0.035)	(0.028)	(12.3)	(23.1)
HIV/AIDS Rate × **1**[Year = 2000]	0.189***	−0.186***	135.7***	−23.4
	(0.041)	(0.040)	(12.7)	(32.2)
Mean of Dep. Var.	45.129	47.343	26,135.8	28,119.6
Observations	3,479	3,479	3,479	3,479
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. 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.