Voting on a Promise: Did the Proposed Student Loan Forgiveness Impact Electoral Outcomes?*

Diego A. Briones[†] Arnav Dharmagadda[‡] Jaden Shawyer[§]

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Abstract

Student loan forgiveness has featured prominently in the political debate around policy responses to address rising debt burdens, yet there is strikingly little evidence of its electoral implications. We study the consequences of the 2022 broad-based debt relief program implemented by the Biden administration less than a month before the November midterm elections. Using geographic information on over 25 million applications for cancellation benefits, we document the program's influence on congressional races. Counties where a higher share of the voting-age population submitted applications had higher vote shares for Democratic party candidates. Program exposure does not significantly predict Democratic voting in prior elections, and individual-level survey data provide corroborating evidence for our county-level estimates. Our results provide evidence for the role of wealth-targeting policies in shaping voter behavior even when the benefits are not realized.

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[†]University of Virginia. dab5xq@virginia.edu
[‡]University of Virginia. qbd8dd@virginia.edu
[§]University of Virginia. mgx2um@virginia.edu

1 Introduction

The $1.6 trillion U.S. student loan market has garnered significant public attention in recent years. Rising debt burdens, high delinquency rates, and administrative mishandling of loan programs have led to increased calls for policy reform, often in the form of student loan forgiveness. While the issue of broad-based student debt relief has been a prominent feature of political debates and some presidential campaigns since the 2011 Occupy Wall Street movement, researchers know little about the role these policies might play in shaping voter behavior.

Student loan forgiveness, and household debt relief more generally, might be used as a tool of distributive politics where extant research across global contexts explores how benefit receipt shapes voting decisions. Generally, evidence has pointed to a positive relationship between transfers and incumbent vote shares.[1] A related literature supports modeling voting as a function of economic conditions, with macroeconomic factors robustly predicting political incumbents' success over decades of work.[2] In the U.S., student borrowers are a large share of the eligible voting population and, generally, a more politically engaged group (Macdonald, 2025). Debtors may then reward politicians for loan forgiveness on the basis of economic self-interest. This behavioral response might be induced, in theory, by aiming transfers at core supporters to mobilize turnout (Cox and McCubbins, 1986; Dixit and Londregan, 1996) or at individuals without strong partisan loyalty to swing votes (Lindbeck and Weibull, 1987). Given the size of the borrower population and potentially broad targeting of student loan forgiveness, likely both types of voters would be impacted. Still, if borrowers are already more likely to turnout and be part of the core supporter group, then we might expect forgiveness to provide little electoral impact, on average.

In this paper, we study the 2022 broad-based loan forgiveness program under the Biden administration: an initiative that was to be the most extensive debt relief effort for student borrowers in U.S. history with a projected 43 million individuals slated to receive up to $10,000 (and $20,000 for lower-income students) in loan forgiveness (The White House, 2022; U.S. Department of Education Press Office, 2022). Data limitations and timing of policy announcements often pose a challenge to estimating the relationship between student loan issues and voting. Our setting is unique as it allows us to document the geographic distribution of potential beneficiaries by leveraging data on millions of applications for debt relief. Furthermore, the program was implemented less than a month before the 2022 midterm elections were held on November 8, meaning the policy was likely highly salient at the time

[1] See Golden and Min (2013) for a review.

[2] Examples of earlier work in this literature include Kramer (1971), Stigler (1973), Fair (1978), and Fiorina (1978). See Lewis-Beck and Stegmaier (2000) and Lewis-Beck and Stegmaier (2018) for a review.

of voting in a general election.

To understand how voters may have responded to potential debt relief, we use data on loan forgiveness application counts by zip-code in October 2022 from the Department of Education. We aggregate the zip-code counts to the county level for the over 25 million applications, and combine data with detailed demographic and economic information from the U.S. Census Bureau, the Bureau of Economic Analysis, and the Bureau of Labor Statistics. We define our primary measure of policy exposure as the share of a county's voting-age population who applied for the program. Geographic variation in application shares broadly reflects the distribution of student debt. Areas with larger shares of Black Americans, women, and higher concentrations of those with at least some college attainment and between the ages of 20 and 64 have higher application shares. We relate the differential exposure to the debt relief program to political outcomes by combining vote counts for congressional and gubernatorial elections from David Leip's Electoral Atlas, and further supplement our county-level analysis with individual-level survey data from the Cooperative Election Study (CES).

Consistent with voters responding in their own economic self-interest, our estimates show a positive, significant association between debt relief applications and voting for the Democratic party in 2022. Conditional on county observables, trends in voting, and state fixed effects, a 1 percentage point increase in the share of a county's adult population who applied for the program translated to a 0.334 percentage point increase in House Democratic vote share. In terms of the distribution of application shares, a 1 standard deviation increase in the program's county penetration translated to increases in Democratic vote shares between 1.01 and 1.11 pp. These estimates may very well be meaningful for party influence – 11 districts were within a 1.01 percentage point margin of victory in the 2022 midterms and party majorities in Congress are small. The Republicans won control of the House of Representatives by only nine seats in 2022.

To test that we are not capturing a persistent characteristic about counties over time, we confirm in a county-by-year analysis that applications have a significant and unique, positive relationship with Democratic vote shares in 2022 relative to prior midterm elections in 2010, 2014, and 2018. When we conduct our analysis within state-year, thereby controlling for time-varying state unobservables, applications do not have a significant association with Democratic vote shares in pre-2022 midterms.

Our complementary analysis of individual-level CES data further supports our county-level findings. Student loan borrowers report voting for the Democratic House candidate in midterm elections at higher rates relative to non-borrowers, however, borrowing status has an even stronger association in 2022. Although we cannot observe whether individuals submitted a debt relief application or measure knowledge of the program in the CES, the

differential likelihood for borrowers to vote for the Democratic party in 2022 is consistent with these voters responding to the debt relief program.

Correlation between remaining unobserved heterogeneity across counties such as certain policy preferences could bias our results. Our primary concern is that we are attributing Democratic party gains from loan forgiveness that are in-part driven by the issue of abortion rights following the *Dobbs v. Jackson Women's Health Organization* Supreme Court decision. We find that our results are robust to dropping states with abortion ballot measures where the issue may have systematically driven reductions in the Republican vote margin (Gardner et al., 2025). In the CES, we can control for these individual policy preferences explicitly. Preferences on abortion policy that are consistent with pro-choice and/or at least some legal access strongly predict Democratic voting, but cannot explain the differential voting that we observe among borrowers in 2022.

In the aggregate, voter turnout does not appear to be a primary driver of our main results. Application share generally has a small, positive but statistically insignificant association with turnout. Still, our results do not rule out potential compositional changes in turnout and estimates from the CES are at least suggestive of behavioral changes on the extensive margin.

Overall, these findings are aligned with predictions from the distributive politics literature. Biden's program was far-reaching: Approximately one in six voters would have benefited. Twenty million borrowers were projected to have their total remaining balances forgiven and many at-risk borrowers who had demonstrated difficulties in managing their debt would have received relief (Conkling and Gibbs, 2022). The program's timing was also consistent with the theory of political business cycles (Nordhaus, 1975) - deliberately allocating benefits prior to the election. This likely increased salience of a credible promise of benefit receipt that could be directly tied to the Democratic party, and ultimately, appears to have motivated voters to reward the party.

Our work is related to several groups of literature. First, we build on recent research studying the behavioral responses and distributional consequences of student loan forgiveness in the U.S. (e.g., Briones et al., 2024; Catherine and Yannelis, 2023; Di Maggio et al., 2019; Dinerstein et al., 2025, 2024; Goss et al., 2024; Jacob et al., 2023; Looney, 2022; Nilaj et al., 2025). Within the more narrow context of Biden's broad-based forgiveness program, Goss et al. (2024) use credit bureau records to assess the potential progressivity of the program. They find that the program would have disproportionately benefited borrowers ages 29 or less, those with lower credit scores, as well as Black and Hispanic borrowers. Dinerstein et al. (2024) also use credit bureau data to draw comparisons among borrowers who were eligible and ineligible for Biden's program and study the evolution of credit outcomes around

the timing of the policy's announcement finding no impacts on borrowing behavior. We extend these analyses, demonstrating that the program potentially had political consequences. Further, we advance this work by integrating application data for the program. This allows us to construct a more direct measure of policy salience rather than rely on predicted eligibility alone.

Second, our paper is related to an extensive economic and political science literature studying economic conditions and voting. These analyses tend to find positive gains for politicians and parties associated with economic benefits that households receive albeit very few study the specific impacts of consumer debt relief.[3] Within this literature, our work is most closely related to Aidt et al. (2024) who study geographic variation in voter behavior following a privately-funded debt program that alleviated consumer loans smaller than $700 for struggling borrowers in the Republic of Georgia. Similar to our setting, the debt relief was "promised" at the point of voting (though did eventually materialize) and the researchers find that a 10% increase in debt relief totals led to a 7% increase in votes for the political party associated with the program. The intervention we study is at a much larger scale and less targeted with 43 million student loan borrowers estimated to receive relief at a cost of $379 billion relative to 600,000 beneficiaries and $578 million in the Georgia setting. With that said, in relative terms, both programs broadly impacted their respective electorates with approximately one in six voters potentially benefiting.

We are aware of only one analysis at the intersection of these two strands of literature studying student loans and voting. SoRelle and Laws (2023) use survey experiments and find increasing likelihoods of Democratic party support due to debt forgiveness policies. Our results complement this work by studying a realized policy setting and using data measuring geographic exposure to prospective debt relief.

Finally, our analysis adds to the understanding of the 2022 elections where results challenged the referendum model of midterm elections. The results are inconsistent with some

[3]In addition to previously cited literature, research would suggest that the financial benefit of loan cancellation could influence voters through their own economic interests (egotropic voting) and/or the well-being of their community (sociotropic voting) (see, for example, Singer and Carlin (2013)). Matsa and Miller (2019) use geographic variation in medicaid expansion eligibility across Maine localities and find that voting patterns are mostly consistent with economic self-interest. At the individual level, evaluations of randomized government transfer programs in several non-U.S. settings have largely shown increasing vote returns for incumbents (De La O, 2013; Manacorda et al., 2011; Zucco Jr, 2013). However, it remains unclear whether these findings, often from anti-poverty programs, would generalize to constituents outside the left tail of the income distribution, which U.S. student debtors, on average, are. Indeed, Blattman et al. (2018) find no evidence of incumbent support in the Ugandan anti-poverty program setting, which they posit, may in-part be driven by the program's strong labor market returns which reduce "transactional" voting. Still, recent evidence from Crane et al. (2024), who study the role of stock market returns in U.S. presidential elections, suggests that individual pecuniary benefits can shape voter behavior for groups with relatively higher incomes.

pre-election predictions that loan forgiveness would have little to no role in the elections (Paz, 2022), and enrich a midterm retrospective that has largely focused on the role of abortion rights and the *Dobbs* decision (Jacobson, 2023; Kann et al., 2024). In fact, estimates from our survey analysis provide suggestive evidence that both issues had roles to play for the Democratic party's performance in 2022.

The rest of the paper proceeds as follows. Section 2 summarizes the 2022 debt relief program and provides context around the midterm elections. In Section 3, we present our data sources and summary statistics of our main analytical sample. Section 4 discusses our empirical approach, results, and robustness checks. Section 5 concludes.

2 Institutional Background

2.1 The Federal Student Loan Debt Relief Program

On August 24, 2022, President Biden announced a one-time, student loan forgiveness program affecting up to 43 million borrowers at an estimated cost of $379 billion (The White House, 2022; U.S. Department of Education Press Office, 2022). The program would have been the broadest student loan relief effort since federal student loan forgiveness programs began in 1958 with the National Defense Student Loan program.[4] Compared to contemporary federal programs such as Public Service Loan Forgiveness and forgiveness following Income-Driven Repayment, it was also by far the least administratively burdensome for borrowers to receive benefits.[5]

Eligible borrowers would receive up to $10,000 in debt cancellation or up to $20,000 for Pell Grant recipients, which was said to apply to 27 million of the total 43 million borrowers. Most student loans qualified for cancellation if borrowers had individual incomes less than $125,000 or $250,000 for married couples who filed their taxes jointly. The White House estimated that 90% of forgiveness would go to individuals with annual incomes less than $75,000.[6]

[4]See Hegji et al. (2018) for a history of federal student loan forgiveness programs.

[5]Issues of burden in take-up of federal loan forgiveness programs are well documented. Complications in administration and servicing the programs, particularly in the case of Public Service Loan Forgiveness, have also contributed to historically low take-up. Relevant analyses and discussions include Briones (2024) and Briones et al. (2024) on PSLF, Jacob et al. (2023) on Teacher Loan Forgiveness, and Herbst (2023) on Income-Driven Repayment.

[6]Loans from the Federal Family Education Loan (FFEL) Program (discontinued in 2010) and Perkins Loans not held by the Department of Education were made ineligible for the program if borrowers did not consolidate these loans into the Direct Loan program before September 29, 2022. In practice, this would exclude roughly 800,000 federal borrowers from the program (Turner, 2022). Private student loans, approximately 7.34% of all student loan balances, were always ineligible for the program. Individuals could qualify under the income criteria using their 2020 or 2021 income. Additional details on income thresholds

In order to receive forgiveness, borrowers had to submit an application on Federal Student Aid's (FSA) website, StudentAid.gov, by December 31, 2023.[7] The application was relatively simple to complete asking users only for basic identifying information (name, date of birth, social security number) and the borrower's certification that they qualified under the program's income limits (see Figure A2).

The 8th U.S. Circuit Court of Appeals temporarily blocked the debt relief program ten days after FSA began accepting applications on October 14, 2022, though the Department of Education continued encouraging borrowers to apply. In fact, the Department of Education sent emails to reassure applicants that they were approved and their forgiveness would be processed "if and when we prevail in court" (Dress, 2022). Applications continued to be processed until November 11, three days after the midterm elections, when a ruling by U.S. District Judge Mark Pittman blocked the program. Figure 1 plots the daily count of applications submitted. FSA received over 25 million applications with the vast majority of interested borrowers (over 82 percent) submitting in the days leading up to the first significant legal challenge to the program. Applicants would not learn of the program's status until seven months later when the program was struck down by the Supreme Court on June 30, 2023.[8]

2.2 Expected Effects of Promised Debt Relief on Voting

The August 2022 federal student debt relief program emerged at an important juncture in U.S. politics, right before the midterm elections, and presents a unique opportunity to examine its influence on voter behavior. While student loan forgiveness has been a politically charged issue since the 2011 Occupy Wall Street movement first elevated calls for broad-based cancellation (Nelson, 2011), Biden's executive action represented an unprecedented step toward implementation.

Unlike previous elections where candidates merely campaigned on various forgiveness programs, the 2022 midterms followed concrete executive action.[9] The timing appears strategically calculated: Biden's announcement included both the forgiveness program and an extension of the pandemic-era payment moratorium through December 31, 2022—pushing

and tax filing status can be seen in Figure A1.

[7]When announced, the application deadline was December 31, 2023. The Deparment of Education stopped receiving applications on November 11, 2022 due to a court order.

[8]See Frederick (2023) for a summary of the court's decision.

[9]In 2016, Elizabeth Warren proposed forgiving up to $50,000 for 95% of borrowers, while Hillary Clinton also endorsed loan forgiveness. In 2020, Bernie Sanders advocated for free public college and full loan cancellation, while Joe Biden supported up to $10,000 in relief. Biden's 2022 executive action received mixed support from within his party, with Democratic Representative Tim Ryan and Senator Catherine Cortez Masto opposing the program, while Republican opposition was more unified, with the RNC framing it as "Biden's bailout for the wealthy."

the resumption of payments beyond the November elections. This timing, coupled with the launch of an application portal just weeks before Election Day, likely substantially increased the policy's visibility and credibility among voters.

Whether voters respond to the forgiveness policy likely, in part, depends on the economic magnitude of the benefits. With up to $20,000 in forgiveness available to Pell Grant recipients and $10,000 for other eligible borrowers, White House estimates projected complete loan elimination for approximately 20 million Americans. Census data indicated that a $10,000 cancellation would reduce total unsecured liabilities by an average of 33% among student debtors (U.S. Census Bureau, 2022). For many borrowers who had not made payments since March 2020 due to the pandemic moratorium, the prospect of returning to repayment represented a looming financial burden that the forgiveness program promised to alleviate (Conkling and Gibbs, 2022).

Data from the Survey of Consumer Expectation demonstrates that voters likely viewed the policy as credible despite legal challenges. As shown in Figure 2, expectations regarding the likelihood of expanded student loan forgiveness increased markedly following Biden's election in November 2020 and again after the August 2022 announcement.[10] Notably, these expectations remained elevated through the November elections and did not substantially decline until mid-2023, when the Supreme Court issued its injunction. These estimates are consistent with survey data cited by Dinerstein et al. (2025). A survey of 4,511 borrowers shows a sharp increase in the expected probability of forgiveness over the next year to about 48% following Biden's announcement. These expectations dropped to around 40% following the November 14 injunction (after the midterms), however, this was still about 10 percentage points higher than beliefs recorded prior to the program's announcement.[11] Secretary of Education, Miguel Cardona's repeated public expression of confidence in the policy's success, likely had a role to play in maintaining credibility of the program through the midterm elections (Dress, 2022).

Note we can largely rule out any impact on candidate selection from the program given that the vast majority of state primary races were decided by the time the program was announced, and all primaries had concluded when the application portal opened on October

[10]There is reason to believe the magnitude of the increase in August 2022 is attenuated. The survey was taken throughout the month of August while the policy announcement was not until the 22nd, meaning the majority of respondents may have answered the survey before the announcement if survey responses are distributed evenly throughout the month.

[11]See Appendix A of Dinerstein et al. (2025).

14.[12]

While the policy originated under Democratic leadership, its theoretical consequences defied simple partisan prediction. Public opinion polling revealed sharp divisions along party lines, with Paz (2022) suggesting the program may have even harmed some Democratic candidates by providing Republicans with a line of attack. Importantly, the program's announcement followed the Supreme Court's June 2022 decision to overturn *Roe v. Wade*, creating a complex electoral environment where multiple high-salience issues competed for voter attention.

A dominant narrative surrounding the 2022 midterms is that abortion rights played the decisive role in Democratic electoral performance. Kann et al. (2024) conducted a survey of a nationally representative sample of registered voters immediately following the elections, concluding that abortion rights were a major driver. Still, with many of the available polling and survey data, it is difficult to rule out impacts driven in-part by the debt relief program. Kann et al. (2024) did not survey on the specific issue of student loans, and we are unaware of any polling data that conditions on the population directly benefiting from the policy – student borrowers.

Google Trends data offer some insight into the salience of policy issues leading up to the elections. A direct comparison of search interest between topics "Abortion" and "Student Loan" suggests that public attention to these topics were relatively equal over the course of 2022 (and the week of November 8) with predictable spikes during key policy events (see Figure 3).

Empirical evidence linking student loan cancellation to voting behavior remains limited. The most direct assessment comes from SoRelle and Laws (2023), who conducted conjoint and survey experiments in May 2022 to evaluate whether executive action on loan forgiveness could improve Democratic electoral prospects. Their findings suggest that for Black voters, young voters, and borrowers, Biden's debt relief program had electorally meaningful effects, increasing intended support for Democratic candidates and shifting some respondents from ambivalence or opposition to expressed likelihood of voting for them. These findings highlight the potential for student loan forgiveness to shape electoral behavior, warranting further investigation into its role in the 2022 midterms.

[12]At the time of the program announcement, four states Massachusetts. Delaware, Rhode Island, and New Hampshire had yet to resolve their primary elections (The New York Times, 2022). Louisiana uses a majority-vote system, so all candidates appear on the same ballot regardless of partisan affiliations on election day.

3 Data and Summary Statistics

This section describes our main data sources, sample construction procedure, and the characteristics of our primary sample. Further details are in Appendix B.

3.1 Data

Student Borrower Data.— We obtained zip-code level counts for the 25,031,904 debt relief applications received by FSA through November 11, 2022 and approximately 43 million borrowers as of December 31, 2022 through Freedom of Information Act requests. The data were constructed by Federal Student Aid using borrowers' most recent mailing address reported by their federal loan servicers. Our main analysis aggregates zip-level counts to the county level using crosswalk files provided by the Department of Housing and Urban Development. Altogether, we are able to link approximately 94 percent of applications to the county level.[13]

David Leip's Electoral Atlas.— We use county-level data on turnout and political party vote shares from David Leip's Electoral Atlas (Leip, n.d.). Data are aggregated from official state election agency reports, and sourcing material can be found in the documentation of the election files. Our primary focus is on House of Representatives vote shares from the 2010 to 2022 midterms because all 435 seats are voted on during these elections. A county's Democratic party vote share (Democratic votes normalized by the total votes in the county) in 2022 serves as the main outcome of interest, and we use prior midterm results to control for trends and conduct robustness tests.

Our county-level unit of analysis follows related economics papers on US voting (e.g., Campante et al., 2024; Crane et al., 2024) and maximizes our sample size available in the David Leip data. A potential tradeoff is that counties do not perfectly correspond to congressional districts which are the direct electoral competition units in House elections. Voters within counties that are split across congressional districts will face different candidate choices. Thus, a county's aggregate change in vote share between midterms might be driven, in-part, by differences in candidate selection and changes in where congressional districts overlap with a county due to redistricting. Counties, however, are stable geographic units

[13]For zip codes that cross multiple counties, we allocate applications using the reported share of addresses in the zip code that are within that county and multiply that share by the number of zip code applications we observe. A relatively small share of applications are unable to be linked to county identifiers because they are privacy suppressed, were unable to be linked to an address by FSA, or the reported zip code by FSA did not match a zip code in the crosswalk file. We observe a zip code in the application data if it has at least 100 applications. About 5.5 percent (1,383,287) of all applications are observed only at the state level, "other" locations, or unable to be matched to an address by FSA. Less than one percent of all the applications (12,675) were unable to be linked because the reported zip code by FSA was not found in the crosswalk file.

over time, allowing us to run robustness checks across multiple election cycles within a consistent sample. Further, survey data show that individuals rarely vote for candidates from different political parties across U.S. electoral races ("split-ticket voting") suggesting that any candidate-specific characteristics that might influence voter behavior are likely second-order.[14] Finally, we can capture meaningful heterogeneity in local economic and demographic conditions from administrative data that might correlate with application rates and voting behavior at the county level. Voters within a county face the same candidate choices in Senate and Governor races. Our results when focusing on the subset of these races that were up for reelection are consistent with our House estimates.

Changes in party vote shares can simply be driven by a political party not fielding a candidate in one of the elections. In these cases, swings in votes are mechanical and we might misattribute changes to debt relief applications. To avoid this, we drop counties where we observe votes for only one party, Democratic or Republican.

County Characteristics.— We capture a broad range of demographic and labor market information to include as controls in our regressions. Where possible, we use data that are aggregated from administrative sources and native to the county level. County age, race, and sex data come from the Census' Population Estimates Program (U.S. Census Bureau, 2024b). Annual income and total population data are from the Bureau of Economic Analysis (U.S. Bureau of Economic Analysis, 2024). Wage and unemployment information come from the Bureau of Labor Statistics (U.S. Bureau of Labor Statistics, 2024). Educational attainment is from the Census Bureau's American Community Survey 5-year estimates (U.S. Census Bureau, 2024a).

Our primary definition of a county's exposure to the debt relief policy, $AppShare^{POP}$, is the number of forgiveness applications as a share of the voting-age population.

Cooperative Election Study.— We complement our county-level analysis with individual-level voter data from the Cooperative Election Study (CES) (Cooperative Election Study, 2024). The CES is a repeated cross-section of the American public and is the largest academic survey focused on U.S. elections capturing a broad range of individual demographic characteristics, political attitudes, and vote choices. Midterm surveys beginning in 2014 capture student loan borrowing status and so we are able to test for differences in voting behavior across years and by borrowing status. The survey did not ask about debt relief applications in 2022, however, we do observe policy preferences regarding abortion rights. This allows us to assess the extent that these unobserved preferences in our main county

[14]For example, Pew Research Center (2020) find that only 4% of registered voters supported presidential and congressional candidates from opposing parties in the 2020 elections. This is consistent with other reports and data from recent elections (DeSilver, 2016).

sample might introduce bias into our results. Our CES sample is restricted to respondents who answer the post-election part of the survey because student loan borrowing status is only observed for these individuals (about 86% of the overall sample). We also drop respondents who are not citizens, and thus, ineligible to vote in the midterm general elections.

3.2 Summary Statistics

Our analysis focuses on the variation in application shares (percent of the voting-age population) across counties. In Table 1 we show that, on average, 6.3% of a county's adult population submitted a student loan forgiveness application, with modest variation across counties. Figure 4 illustrates this unconditional variation. Predictably, application shares are positively correlated with the share of college-educated and broadly reflect the demographics of student loan borrowers. Counties with larger shares of Black Americans and women have higher application rates corresponding with these populations' greater reliance on debt to finance postsecondary investment (Addo and Zhang, 2024). Application shares are lower in areas where shares of the population age 65 and older or under age 20 are higher, reflecting the concentration of federal loan borrowers in ages 25 to 49 (Federal Student Aid, 2025).[15] In our proceeding analysis, we account for these demographic indicators as they might also correlate with voting behavior.

Engagement in the program among borrowers was relatively high. The median county share of borrowers who applied was 49% despite the portal being open for less than a month. Originally, the Biden administration intended to accept applications through December 31, 2023. Individuals that did not submit applications might have been ineligible or were unaware of the program at the time. In practice, high engagement was likely driven by low take-up costs and the program having relatively few rules governing the distribution of benefits. Estimates from the Congressional Budget Office suggested that 95% of federal borrowers would be eligible for forgiveness, suggesting the policy's income thresholds provided only light targeting (Congressional Budget Office, 2022).

We focus on applications as a share of the adult population because we are interested in capturing the penetration of the program among a county's electorate. For any particular county, application rates can be high among borrowers but ultimately have little influence in aggregate voting outcomes if they represent only a very small proportion of voters.

[15] In Table A1 we present all estimates on the conditional relationship between application shares and these characteristics.

4 Exploring the Relationship between Debt Relief Applications and Voting

4.1 Do Applications Predict Voting in 2022?

To assess whether student loan forgiveness by executive action influenced voter behavior, we ask whether a county's (c) share of voting age population that submitted debt relief applications ($AppShare^{POP}$) predicts voting outcomes in 2022 (Y^{22}), conditional on the level of the voting outcome in the previous midterm election and its change between 2014 and 2018 ($Y_c^{2014-2018}$), county observable characteristics (X), and state fixed characteristics (δ). Specifically, we estimate specifications of the following form:

$$Y_c^{2022} = \alpha + \beta AppShare_c^{POP} + \gamma Y_c^{2014-2018} + X_c'\lambda + \delta_s + \epsilon_c. \tag{1}$$

This setup follows Campante et al. (2024) who study the role of Ebola concerns in the 2014 midterms. The key assumption to capturing unbiased estimates of this relationship is that there remains no other unobserved factors that systematically influence changes in voting outcomes, $\mathbb{E}(\epsilon_c|X_c, \delta_s, AppShare_c^{POP}) = 0$.[16] In the proceeding sections, we thoroughly assess the plausibility of our results, discuss potential sources of bias, and perform robustness and validity tests where possible.

We begin by estimating versions of equation (1) where the dependent variable is the Democratic candidate vote share in the 2022 House elections (Table 2). As student loan forgiveness policies have been primarily promoted by Democratic party politicians and that the broad-based program that we focus on was established by a Democratic president, the basic prediction is that counties where a higher share of the voting-age population submitted debt relief applications will also have higher shares of Democratic party votes. This is the association that we observe in the data. In column (1) of Table 2, the unconditional relationship between the variables of interest imply that a 1 percentage point (pp) increase in $AppShare^{POP}$ is associated with a 2.91 pp increase in Democratic vote share. Unsurprisingly, this correlation is capturing trends in voting; counties with higher application shares were already more likely to be voting for Democratic candidates, and so we see an appreciable drop in the estimated relationship to 0.53 pp when we control for these characteristics (column 2).

[16] Data limitations and the non-random assignment of debt relief exposure make it unlikely that researchers can strictly satisfy this condition. Income thresholds governing eligibility for the program suggest a regression discontinuity design. In practice, individual-level data linking application for the program, income, and voting are unavailable and perhaps impossible to construct. Even if the data were available, the local average treatment effect around the income thresholds of $125,000 for single tax filers and $250,000 for married filers is arguably uninformative about behavior across the distribution of debt holders because very few borrowers would have been ineligible.

Still, this positive relationship remains true even after controlling for county demographic and economic characteristics (column 3) as well as fixed state-level characteristics, column (4). When we weigh counties by their total number of votes in 2022, the estimated coefficient on $AppShare^{POP}$ is 0.33, implying that the correlation is not driven by smaller counties that are less likely to affect election outcomes. Connecting these estimates to the distribution of application shares, our preferred estimates in columns (4) and (5) imply that a 1 standard deviation increase in $AppShare^{POP}$, (3.05 pp), translated to increases in Democratic vote shares between 1.01 and 1.11 pp. To contextualize this result, 11 congressional districts were within a 1.01 percentage point margin of victory in the 2022 midterm elections. As party majorities in Congress are small, this potentially represents meaningful influence: the Republicans won control of the House of Representatives by only nine seats in 2022.

We also find strong, positive associations between applications and Democratic voting in congressional "battleground" races as defined by Ballotpedia (2022). Ballotpedia identify battleground races, in part, by how competitive the elections were in 2020 and whether the race included the incumbent. We outline further details on this subsample in Appendix B. In 2022, 33 House races were identified as particularly competitive. Column (6) of Table 2 presents our regression estimates when we limit our analytical sample to counties that were part of these battleground races. We find a 1 pp increase in application share is associated with a 1.30 pp increase in Democratic vote share suggesting that the forgiveness policy might have been particularly important in these competitive races.

4.2 Temporal Analysis: Distinguishing 2022's Unique Application-Voting Relationship

Our estimates of β in equation (1) could be capturing persistent, unobserved characteristics about counties with higher policy exposure such that $AppShare^{POP}$ is predictive about voter behavior across midterm elections. To assess this, we move to a county-year analysis and test whether there is a differential association between democratic vote share and applications in 2022,

$$\begin{aligned} Y_{ct} = \alpha &+ \beta_1 AppShare_c^{POP} + \beta_2 \mathbb{1}\{t = 2022\} \\ &+ \beta_3 (AppShare_c^{POP} \times \mathbb{1}\{t = 2022\}) + \\ &+ X_{ct}'\lambda + \delta_s + \epsilon_{ct}. \end{aligned} \tag{2}$$

In equation (2) Democratic vote share and county characteristics are now at the county (c) , year (t) level where $t = 2022, 2018, 2014, 2010$.[17] $\mathbb{1}\{t = 2022\}$ is an indicator equal to one when $t = 2022$. All other variables variable definitions follow equation (1), and we cluster standard errors at the state level. Here, β_1 captures voting differences between higher and lower application share counties that are consistent across midterm elections while β_3 measures any differential association observed in 2022. As in our cross-sectional analysis, we limit observations to the set of county-year elections with contested races.

Table 3 reports estimates for β_1, β_2, and β_3 across a range of model specifications and sample restrictions. Across all models, we consistently find a positive differential relation between application shares and democratic vote shares in 2022. While counties with higher application shares also tended to vote more Democratic prior to 2022, the coefficient on $AppShare^{POP}$ becomes substantially smaller and less precisely estimated once controlling for time-invariant state-level characteristics (column 2). These patterns persist when restricting to a balanced panel of counties (column 3) and when weighting observations by total votes cast (column 4).

A potential concern is that application shares may be correlated with unobserved county-level characteristics that also influence voting behavior. To address this, column (5) includes state-by-year fixed effects, allowing identification to rely on variation across counties within the same state and election year. Column (6) further accounts for the possibility that the relationship between county characteristics and Democratic voting changed in 2022 by interacting covariates with an indicator for the 2022 election. This controls for any systematic shifts in how demographic or economic factors correlate with Democratic support in 2022, which might otherwise confound our estimates.

Our preferred specification in column (6) suggests that a one percentage point increase in application share yields a 0.382 percentage point larger Democratic vote share in 2022 relative to previous midterms. The estimated coefficient on the baseline relationship between application shares and vote share is 0.403 but not statistically significant at conventional levels.

Voting behavior varies between midterm and presidential election years. In particular, midterms have been highly consistent with a referendum model of voter behavior with the sitting President's party losing House seats (Charles and Stephens Jr, 2013; Jacobson, 2023; Tufte, 1975). As the midterm elections in 2018 were during President Trump's first term, 2018 vote shares are likely capturing differing voting responses relative to 2010, 2014, and 2022 which were under Democratic party Presidents. Results in column (7) of Table 3 suggest

[17] ACS 5-year estimates on county-level college attainment prior to 2010 are unavailable and so we exclude those midterms because we cannot control for this important characteristic.

some support for this; when we drop 2018 county observations, the estimate on the interaction between $AppShare^{POP}$ and 2022 increases to 0.434 while the coefficient on $AppShare^{POP}$ decreases to 0.351 and remains statistically insignificant.

A potential factor that could be captured in the coefficient on β_1 is that student loan borrowers have incentives to vote for the Democratic Party even before the debt relief program was introduced. Using the CES where we can observe voters' student loan borrowing status, we run complementary analyses using specifications of the following form:

$$\begin{aligned} Y_{it} = \alpha &+ \eta_1 Borrower_{it} + \eta_2 \mathbb{1}\{t = 2022\} \\ &+ \eta_3 (Borrower_{it} \times \mathbb{1}\{t = 2022\}) \\ &+ X'_{it}\lambda + \delta_s + \epsilon_{it}. \end{aligned} \tag{3}$$

In the CES, our primary dependent variable of interest is a binary indicator equal to one if individual, i, voted for the House democratic party candidate in midterm election year, t. *Borrower* is an indicator equal to one if the respondent reports being responsible for paying off a student loan and has at least some college education. This information is available in midterm survey years 2014, 2018, and 2022. In X, we control for race (indicators for Black and White), gender, education (at least some college vs high school or less), quadratic in age, family income (above $70,000 vs less), employment (unemployed vs not), and marriage (married vs not). Our vector of geographic fixed effects, δ_s, are either state or congressional district by county indicators.[18] Following recommendations from the CES, we use survey weights available for multi-year analysis. Robust standard errors are clustered at the state level.

Results presented in columns (1)-(3) of Table 4 suggest student loan borrowers are more likely to vote for Democratic party candidates, but we also find that holding students loans has a differential, positive relationship in 2022. Focusing on the estimates in column (3) where we include congressional district-county-year fixed effects, borrowers are approximately 3.91 pp more likely to vote for the Democratic party candidate relative to non-borrowers and that the Democratic vote probability among borrowers was an additional 3.53 pp higher in 2022 compared to 2014 and 2018. Similar to the county-level regressions, estimates on the interaction term are larger when we focus only on the midterm elections where the sitting President is from the Democratic party (Table A2). Although we cannot observe debt relief applications directly in the CES, this differential voting pattern among borrowers in 2022 is

[18] Observation counts slightly differ between models that use state or congressional district by county fixed effects because some areas only have one respondent.

consistent with incentives due to the promise of loan forgiveness.

4.3 Student Loan Forgiveness and *Dobbs*

As we have discussed, much of the discourse surrounding the 2022 midterms centered on the influence of abortion rights following the *Dobbs* decision. If abortion policy preferences are positively correlated with debt relief applications even after conditioning on observable county characteristics, a concern is that our estimates might be overstating the implied impact of the student loan forgiveness program on democratic vote shares.

We test for this potential bias in two ways. First, we drop counties from the five states (California, Kentucky, Michigan, Montana, and Vermont) that had abortion-related ballot measures in 2022. This approach uses insights from Gardner et al. (2025) who find evidence for these measures decreasing the Republican party vote margins in 2022, while states with abortion rights classified as "Safe", "Banned" or "At risk" show no discernible differences from earlier midterm elections. Results in column (8) of Table 3 demonstrate that our results are robust to dropping these on-ballot states.

Second, the CES surveys individuals on their abortion policy stances and so we can control for these preferences directly. Specifically, we construct an indicator variable, "Pro-Access," equal to one if respondents express positions that are consistent with beliefs that abortion should be legal in at least some situations and allow its relationship with voting behavior to vary in 2022.[19] In these regressions, we drop respondents who have missing answers to the abortion policy questions to avoid mischaracterizing their policy positions. Columns (1)-(3) of Table 5 show our main estimates when controlling for pro-access policy stances. The inclusion of this metric of policy preferences has little effect on the magnitudes and precision of the student borrower coefficients suggesting that abortion rights concerns, alone, cannot explain our main estimates of interest. Importantly, we still document a strong relationship between pro-access preferences and Democratic party voting, between 21.6 and 22.9 pp, and that this relationship is even stronger in 2022, between 6.88 and 7.57 pp higher than in 2014 and 2018. These results are consistent with other research and exit polling data exploring the importance of the *Dobbs* decision in the 2022 midterms (Jacobson, 2023). We further demonstrate that our results are robust to alternative measures of pro-access in Table 6. When we redefine the abortion policy position indicator as pro-choice (respondent states they are in favor of "Always allow a woman to obtain an abortion as a matter of choice," regardless of their position on the other abortion policy questions), the estimates on the

[19]We classify individuals as "Pro-Access" if they state they are in favor of "Always allow a woman to obtain an abortion as a matter of choice," or in favor of "Permit abortion only in case of rape, incest, or when the woman's life is at risk," or not in favor of "Prohibit all abortions after the 20th week of pregnancy."

borrower interaction drop to 2.50 pp from 3.54 pp but still precisely estimated. In another test, we use a survey question available in 2022 whether the respondent is in support of the following, "Prohibit government restrictions on the provision of, and access to, abortion." We run regressions using cross-sectional variation in 2022 and present these results in Table A4. Again, we find that holding student loans is positively associated with the probability of voting for the Democratic House candidate after controlling for positions on government-imposed abortion restrictions.

4.4 Voter Turnout

The association with Democratic vote share we document could be explained by changes in voter turnout – debt relief applicants are induced into voting when they would not have in absence of the program. We construct a measure of a county's turnout as its total number of votes cast in the House elections normalized by the county's voting-age population and run regressions using the pooled county by midterm-year election data. We present these results in Table 7. We do not find any strong evidence in the county-level data suggesting differences in 2022 turnout between counties with higher or lower application shares. Estimates on the interaction between $AppShare^{POP}$ and 2022 are generally positive but imprecisely estimated. In column (7) where we drop 2018 observations, the interaction coefficient is 0.165 pp and significant at the 10% level. This could be capturing the relative increases in turnout among the electorate in the 2018 and 2022 elections which had some of the highest midterm turnout rates in decades (Pew Research Center, 2023), and so changes between these elections at the county level are relatively small. Still, these estimates do not rule out compositional changes in turnout.

Estimates using the CES suggest that changes in turnout could partially explain the Democratic voting estimates we observe. When we use the self-reported measure of turnout (binary indicator equal to one if respondent voted), we find that borrowers were 2.30 pp more likely to vote in 2022 after controlling for pro-access policy stances as well as individual and fixed congressional district-county-year fixed characteristics (column 6, Table 5). Estimates are similar when we use our pro-choice measure of abortion policy preferences (Table 6).

We are cautious about these estimates relying on self-reported turnout. The average 2014-2022 turnout in our sample is about 78% which is high relative to our county estimate of 46% in 2022. The CES does conduct voter validation on respondents. As a robustness check, we redefine our binary outcomes where they can only equal one if the CES was able to validate that the respondent voted in the midterm election. The average validated turnout is 58%, and we estimate a 1.93 pp increase in turnout among borrowers (column 6, Table A5). Our estimates for the Democratic party voting outcome are very similar in magnitude and

precisely estimated when requiring the respondent to have a valid voting record and report voting for the Democratic party in order for the outcome to equal one (columns 1-3 of Table A5).

4.5 Additional Robustness Checks

Senate and Governor Races.— Congressional districts are the direct electoral competition unit in House elections and counties may cross district boundaries. To test whether this feature is influencing our results, we run our cross-sectional analysis using counties that do not cross district borders in 2022. Results are presented in columns (3) and (4) of Table A6. We also present results using Democratic vote shares in Senate (columns 5-6) and Governor (columns 7-8) races. Counties within a state face the same candidate choices in those elections. We find our main House election results are robust to these alternative outcomes and samples. One caveat is that we estimate a positive, but statistically insignificant relationship between applications and Senate Democratic vote share in the specification where we weight observations by total votes cast in 2022.[20]

Applications and Borrowers.— Results from the CES sample suggest that borrowers have a higher likelihood of voting for the Democratic party prior to 2022. Since debt relief applications are correlated with a county's student loan borrower population, our estimates on application shares might also be capturing a baseline borrower voting effect. We run specifications of equation (2) where we control for the county population borrower share in 2022 and test for its differential association with Democratic vote share in 2022. Results from these regressions are presented in Table A7. Holding the share of the voting-age population that are borrowers fixed, increasing application shares is positively correlated with Democratic voting. These results are consistent with the idea that counties where there was higher program engagement were more likely to vote for the Democratic party, separate from borrower density.

5 Conclusion

We evaluate whether the broad-based student loan forgiveness program by the Biden Administration generated voter support for the Democratic party in the 2022 midterm elections. We find evidence consistent with voters rewarding congressional Democratic candidates in

[20]The 100 Senate seats are divided into three classes such that a third of the seats are up for reelection every two years. An individual Senate position is up for reelection every six years, and so in order to control for a county's pre-2022 Senate vote trends we need to control for vote shares in 2016, a presidential election year. Voting behavior typically differs between midterm and presidential election years so we prefer to compare across midterms as we do in the House and Governor races.

areas where the program was more salient. Counties that had higher shares of the adult population submitting debt relief applications also had higher Democratic party vote shares, and this relationship appears to be uniquely predictive in 2022. Similarly, individuals who hold student loans became more likely to vote for Democratic candidates. We do not find evidence that our results can be explained by time-varying state unobservable characteristics nor by motivation generated by the overturning of *Roe v. Wade*.

Although the proposed debt relief program was ultimately blocked by the Supreme Court, the Biden Administration still canceled $188.8 billion of loans for 5.3 million borrowers through pre-existing programs.[21] Recent work has found that these forgiveness programs impacted individual borrowing, credit health, and employment outcomes (Dinerstein et al., 2025; Nilaj et al., 2025). Whether these more targeted debt relief efforts translate to changes in voter behavior remains an open question.

[21]These programs included Borrower Defense, Public Service Loan Forgiveness, Income-Driven Repayment, and Total and Permanent Disability.

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Tables and Figures

Table 1. County Summary Statistics

	Mean	SD	P10	P50	P90
AppShare^{POP}	0.063	0.030	0.025	0.063	0.103
BorShare^{POP}	0.133	0.032	0.094	0.132	0.174
AppShare^{BOR}	0.455	0.161	0.251	0.492	0.614
Dem Vote Share (2022)	0.310	0.162	0.130	0.275	0.555
Dem Vote Share (2018)	0.368	0.164	0.176	0.345	0.603
Δ Dem Vote (2014-2018)	0.018	0.076	-0.064	0.014	0.103
Turnout (2022)	0.457	0.098	0.326	0.456	0.585
Turnout (2018)	0.479	0.088	0.370	0.476	0.592
Δ Turnout (2014-2018)	0.099	0.056	0.029	0.100	0.172
Total Votes (2022, in 1000s)	37.931	103.308	2.006	9.010	89.769
Population 18+ (in 1000s)	90.449	283.957	4.338	20.908	192.939
Log Income Per Capita	10.861	0.232	10.610	10.831	11.135
Log Population Density	2.904	1.737	0.663	2.881	5.143
Unemployment Rate	0.036	0.012	0.023	0.034	0.051
White Share	0.764	0.192	0.471	0.834	0.944
Black Share	0.083	0.131	0.005	0.022	0.272
Hispanic Share	0.101	0.136	0.018	0.051	0.247
Under 20 Share	0.242	0.035	0.198	0.243	0.281
Over 65 Share	0.205	0.048	0.151	0.201	0.267
Female Share	0.499	0.026	0.476	0.503	0.521
Some College Share	0.534	0.109	0.404	0.534	0.664

Notes: $AppShare^{POP}$ ($BorShare^{POP}$) is a county's number of student loan applications (student loan borrowers) divided by its total population 18 or older in 2022. $AppShare^{BOR}$ is a county's number of applications divided by its number of borrowers. Turnout is the county's total votes cast in the House elections normalized by the population 18 or older. We winsorize turnout at the 1% level. County characteristics are estimates from 2022 unless otherwise noted. Demographic shares are relative to the total population 18 or older except for age which is relative to the entire population. Sample is restricted to counties with non-missing values and that have Republican and Democratic party votes cast in 2022, 2018, and 2014.

Table 2. Student Loan Forgiveness Applications and County Democratic Vote Share

	Democratic Vote Share in 2022 House Election					
	(1)	(2)	(3)	(4)	(5)	(6)
$\text{AppShare}^{\text{POP}}$	2.913***	0.533***	0.285***	0.365***	0.334*	1.301***
	(0.0863)	(0.0628)	(0.0701)	(0.0712)	(0.180)	(0.408)
Dem Vote Share (2018)		0.861***	0.738***	0.698***	0.733***	0.628***
		(0.0129)	(0.0159)	(0.0195)	(0.0419)	(0.0594)
Δ Dem Vote (2014-2018)		0.0440*	-0.0407*	-0.0782***	-0.122**	-0.0114
		(0.0264)	(0.0244)	(0.0257)	(0.0488)	(0.0614)
Log Income Per Capita			0.0190**	0.0215***	0.0113	-0.0132
			(0.00754)	(0.00681)	(0.0176)	(0.0311)
Log Population Density			0.00474***	0.00494***	-0.000708	-0.0145**
			(0.00129)	(0.00142)	(0.00300)	(0.00613)
Unemployment Rate			0.298***	0.125	0.0178	-0.295
			(0.110)	(0.139)	(0.319)	(0.725)
White Share			-0.0976***	-0.119***	-0.0516	-0.348***
			(0.0218)	(0.0260)	(0.0577)	(0.106)
Black Share			-0.0226	0.0351	0.119**	-0.253**
			(0.0222)	(0.0248)	(0.0585)	(0.116)
Hispanic Share			0.00432	-0.0264	0.0487	-0.0170
			(0.0222)	(0.0237)	(0.0574)	(0.0504)
Female Share			0.301***	0.277***	0.132	0.443
			(0.0607)	(0.0628)	(0.179)	(0.327)
Under 20 Share			-0.808***	-0.661***	-0.440*	-0.665**
			(0.0756)	(0.0771)	(0.231)	(0.307)
Over 65 Share			-0.322***	-0.257***	-0.222	0.106
			(0.0565)	(0.0513)	(0.144)	(0.268)
Some College Share			0.163***	0.144***	0.274***	0.304***
			(0.0211)	(0.0254)	(0.0505)	(0.0848)
State FE	No	No	No	Yes	Yes	Yes
Votes weighted	No	No	No	No	Yes	No
Battleground Only	No	No	No	No	No	Yes
Adjusted R^2	0.298	0.867	0.893	0.923	0.918	0.879
Observations	2558	2558	2558	2558	2558	180

Notes: This table presents estimates from OLS regressions. We restrict our sample to counties that have contested midterm House elections in 2022, 2018, and 2014 and that have nonmissing values for all covariates. The dependent variable is the Democratic vote share in the 2022 House elections. $AppShare^{POP}$ is the ratio of county applications for student loan forgiveness to the population ages 18 or older. In column (5), we weight counties by their total votes in 2022. In column (6), we restrict the sample to 180 counties identified as being part of battleground congressional districts by Ballotpedia. Robust standard errors are reported in parentheses. County-level characteristics are 2022 estimates. Significance levels are indicated as * 0.10 ** 0.05 *** 0.01.

Table 3. Applications and Democratic Vote Share in House Midterm Elections, 2010-2022

	Democratic Vote Share							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\text{AppShare}^{\text{POP}}$ x 2022	0.873***	0.644***	0.668***	0.757***	0.778***	0.382**	0.434**	0.403**
	(0.140)	(0.101)	(0.117)	(0.134)	(0.121)	(0.149)	(0.169)	(0.157)
$\text{AppShare}^{\text{POP}}$	1.304***	0.386	0.402*	0.461	0.305	0.403	0.351	0.368
	(0.372)	(0.239)	(0.237)	(0.337)	(0.245)	(0.259)	(0.262)	(0.272)
2022	-0.116***	-0.0853***	-0.0963***	-0.122***				
	(0.0188)	(0.00911)	(0.0116)	(0.0153)				
Mean Y	0.350	0.350	0.357	0.498	0.357	0.357	0.351	0.357
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	No	Yes	Yes	Yes	No	No	Yes	Yes
Balanced Sample	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Vote Weighted	No	No	No	Yes	No	No	No	No
State-by-Year FE	No	No	No	No	Yes	Yes	Yes	Yes
Controls × 2022	No	No	No	No	No	Yes	Yes	Yes
Includes 2018	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Includes Abortion Ballot States	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Adjusted R^2	0.471	0.660	0.651	0.731	0.689	0.693	0.682	0.697
Observations	11454	11454	9728	9728	9728	9728	7296	8456

Notes: This table displays the estimates from regressions predicting county Democratic party vote share in the House midterm elections in 2010, 2014, 2018, and 2022. The sample is restricted to county-year observations with contested elections. The primary coefficient of interest is on the interaction between $\text{AppShare}^{\text{POP}}$ (debt relief applications divided by the voting-age population) and an indicator for election year 2022. The following county by year characteristics are included: log income per capita, log population density, unemployment rate, and shares of the population that are White, Black, Hispanic, female share, under 20, over 65, and have at least some college experience. We suppress the display of the estimates of these covariates for clarity, but provide all estimates in an appendix table. Column (2) introduces state fixed effects, column (3) restricts the analysis to a balanced set of counties that have contested elections in all four midterm years, and in column (4), the regression and mean of the dependent variable are weighted by total votes cast. In Columns (5)-(8), we include state-by-year fixed effects and in Columns (6)-(8), we allow for the relationship between the controls and voting to vary in 2022. Column (7) drops the 2018 midterm observations from the sample and column (8) drops the five states that had abortion rights ballot measures in 2022. Standard errors clustered at the state level. Significance levels are indicated as * 0.10 ** 0.05 *** 0.01.

Table 4. CES Student Loan Borrowing and Voting in the House Elections: 2014-2022

	Dem Vote			Turnout		
	(1)	(2)	(3)	(4)	(5)	(6)
Borrower x 2022	0.0373***	0.0387***	0.0353***	0.0223**	0.0228**	0.0225**
	(0.00800)	(0.00795)	(0.00821)	(0.0104)	(0.00887)	(0.00883)
Borrower	0.0367***	0.0378***	0.0391***	0.00639	0.00645*	0.00529
	(0.00540)	(0.00490)	(0.00533)	(0.00416)	(0.00377)	(0.00390)
2022	-0.0172***	-0.0164**		-0.0293***	-0.0219***	
	(0.00582)	(0.00674)		(0.00567)	(0.00629)	
Mean Y	0.37	0.37	0.37	0.79	0.79	0.79
Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	No	No	Yes	No	No
CD x County FE	No	Yes	No	No	Yes	No
CD x County x Year FE	No	No	Yes	No	No	Yes
Observations	149,281	148,637	147,375	149,281	148,637	147,375

Notes: This table presents regression estimates on the relation between student borrowing and voting behavior in midterm House elections using individual-level survey data from the CES. All regressions control for gender, quadratic in age, race (indicators for Black and White), education (at least some college education vs high school or less), family income (above $70k vs less), employment (unemployed vs not), and marriage (married vs not). Dependent variables are an indicator equal to one if the respondent voted for the Democratic party in the House election (columns 1-3), and an indicator equal to one if the respondent voted (columns 4-6). Borrower is a variable equal to one if the respondent reports being responsible for paying a student loan. Standard errors are clustered at the state level. Significance levels: * 0.10, ** 0.05, *** 0.01.

Table 5. Controlling for Abortion Policy Preferences: CES Student Loan Borrowing and Voting in the House Elections (2014-2022)

	Dem Vote			Turnout		
	(1)	(2)	(3)	(4)	(5)	(6)
Borrower x 2022	0.0370***	0.0381***	0.0354***	0.0223**	0.0229**	0.0230**
	(0.00795)	(0.00770)	(0.00796)	(0.0105)	(0.00906)	(0.00902)
Borrower	0.0363***	0.0369***	0.0374***	0.00640	0.00650	0.00521
	(0.00542)	(0.00485)	(0.00527)	(0.00437)	(0.00397)	(0.00405)
2022	-0.0899***	-0.0874***		-0.0132	-0.00742	
	(0.00828)	(0.00992)		(0.0155)	(0.0157)	
Pro-Access x 2022	0.0757***	0.0737***	0.0688***	-0.0170	-0.0151	-0.0159
	(0.0102)	(0.00990)	(0.0113)	(0.0147)	(0.0144)	(0.0152)
Pro-Access	0.229***	0.216***	0.222***	-0.0239***	-0.0285***	-0.0292***
	(0.00911)	(0.00892)	(0.00880)	(0.00606)	(0.00569)	(0.00611)
Mean Y	0.37	0.37	0.37	0.79	0.79	0.79
Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	No	No	Yes	No	No
CD x County FE	No	Yes	No	No	Yes	No
CD x County x Year FE	No	No	Yes	No	No	Yes
Observations	147,418	146,774	145,507	147,418	146,774	145,507

Notes: This table presents regression estimates on the relation between student borrowing and voting behavior in midterm House elections using individual-level survey data from the CES. All regressions control for gender, quadratic in age, race (indicators for Black and White), education (at least some college education vs high school or less), family income (above $70k vs less), employment (unemployed vs not), and marriage (married vs not). Dependent variables are an indicator equal to one if the respondent voted for the Democratic party in the House election (columns 1-3), and an indicator equal to one if the respondent voted (columns 4-6). Borrower is a variable equal to one if the respondent reports being responsible for paying a student loan. We include an indicator equal to one if the respondent reports being in support of always allowing abortion access as a matter of choice or the respondent states that they do not support a ban on abortion at 20 weeks or they do not support only allowing abortion in the cases of rape or incest. Standard errors are clustered at the state level. Significance levels: * 0.10, ** 0.05, *** 0.01.

Table 6. Congressional District x County x Year Fixed Effects: CES Student Loan Borrowing and Voting in the House Elections: 2014-2022

Panel A: Student Loan Borrowing

	Dem Vote		Turnout	
	(1)	(2)	(3)	(4)
Borrower x 2022	0.0354***	0.0250***	0.0230**	0.0254***
	(0.00796)	(0.00869)	(0.00902)	(0.00890)
Borrower	0.0374***	0.0304***	0.00521	0.00441
	(0.00527)	(0.00459)	(0.00405)	(0.00404)
Pro-Access x 2022	0.0688***		-0.0159	
	(0.0113)		(0.0152)	
Pro-Access	0.222***		-0.0292***	
	(0.00880)		(0.00611)	
Pro-Choice x 2022		0.0755***		-0.0295***
		(0.0103)		(0.00738)
Pro-Choice		0.322***		0.000847
		(0.00726)		(0.00356)
Mean Y	0.37	0.37	0.79	0.79
Controls	Yes	Yes	Yes	Yes
CD x County x Year FE	Yes	Yes	Yes	Yes
Observations	145,507	145,507	145,507	145,507

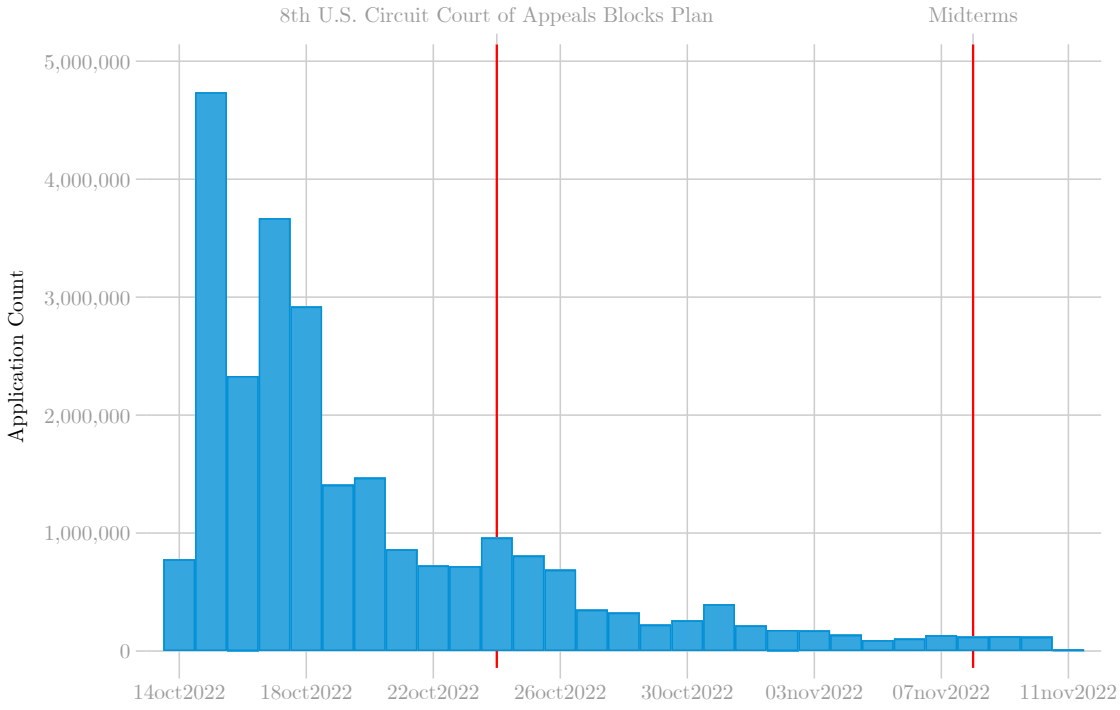
Notes: This table presents regression estimates on the relation between student borrowing and voting behavior in midterm House elections using individual-level survey data from the CES. All specifications follow our main analysis except that regressions include congressional district-county-year fixed effects. Standard errors are clustered at the state level. Significance levels: * 0.10, ** 0.05, *** 0.01.

Table 7. Applications and Turnout in House Midterm Elections, 2010-2022

	Turnout							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\text{AppShare}^{\text{POP}}$ x 2022	0.0595	0.00234	0.0359	0.0664	-0.0356	0.105	0.165*	0.0906
	(0.135)	(0.131)	(0.102)	(0.121)	(0.0474)	(0.0734)	(0.0830)	(0.0710)
$\text{AppShare}^{\text{POP}}$	0.624***	0.220**	0.285***	1.012***	0.186***	0.158**	0.0981	0.172**
	(0.166)	(0.0873)	(0.0735)	(0.113)	(0.0641)	(0.0606)	(0.0681)	(0.0682)
2022	-0.0348**	-0.0301**	-0.0333***	-0.0367**				
	(0.0141)	(0.0125)	(0.00878)	(0.0140)				
Mean Y	0.350	0.350	0.357	0.500	0.357	0.357	0.351	0.357
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	No	Yes	Yes	Yes	No	No	Yes	Yes
Balanced Sample	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Vote Weighted	No	No	No	Yes	No	No	No	No
State-by-Year FE	No	No	No	No	Yes	Yes	Yes	Yes
Controls × 2022	No	No	No	No	No	Yes	Yes	Yes
Includes 2018	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Includes Abortion Ballot States	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Adjusted R^2	0.571	0.719	0.722	0.751	0.821	0.823	0.822	0.824
Observations	11454	11454	9728	9728	9728	9728	7296	8456

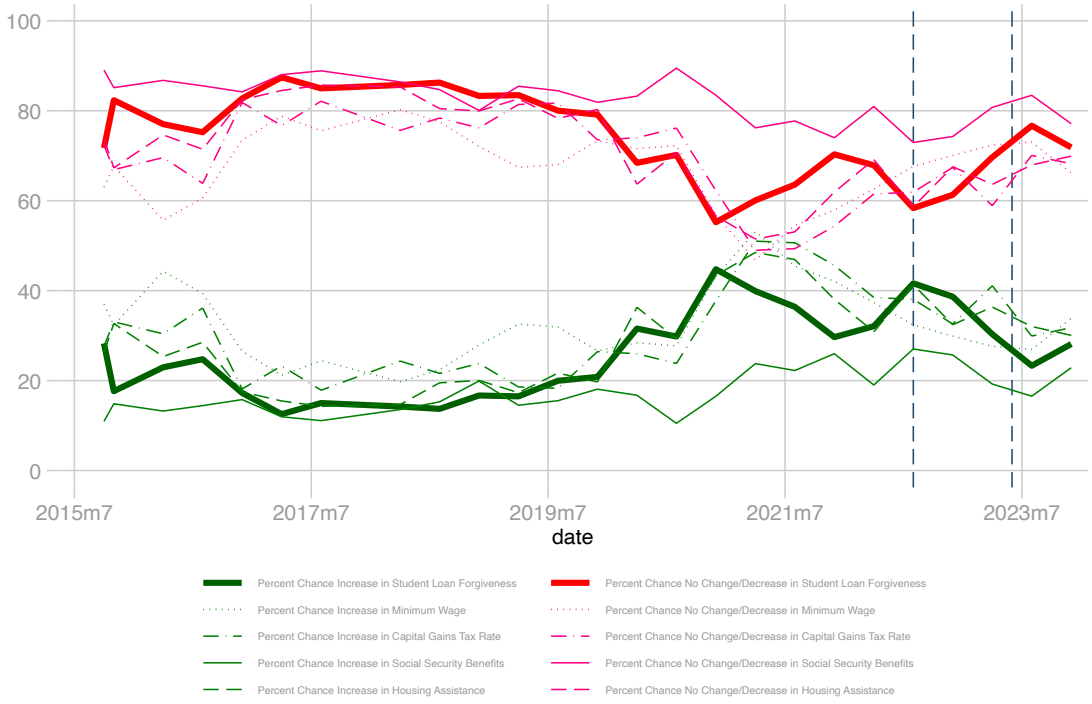
Notes: This table displays the estimates from regressions predicting county turnout in the House midterm elections in 2010, 2014, 2018, and 2022. The sample is restricted to county-year observations with contested elections. The primary coefficient of interest is on the interaction between $\text{AppShare}^{\text{POP}}$ (debt relief applications divided by the voting-age population) and an indicator for election year 2022. The following county by year characteristics are included: log income per capita, log population density, unemployment rate, and shares of the population that are White, Black, Hispanic, female share, under 20, over 65, and have at least some college experience. We suppress the display of the estimates of these covariates for clarity. Column (2) introduces state fixed effects, column (3) restricts the analysis to a balanced set of counties that have contested elections in all four midterm years, and in column (4), the regression and mean of the dependent variable are weighted by a county's voting-age population. In Columns (5)-(8), we include state-by-year fixed effects and in Columns (6)-(8), we allow for the relationship between the controls and voting to vary in 2022. Column (7) drops the 2018 midterm observations from the sample and column (8) drops the five states that had abortion rights ballot measures in 2022. Standard errors clustered at the state level.Significance levels are indicated as * 0.10 ** 0.05 *** 0.01.

Figure 1. 2022 Daily Federal Student Debt Relief Applications



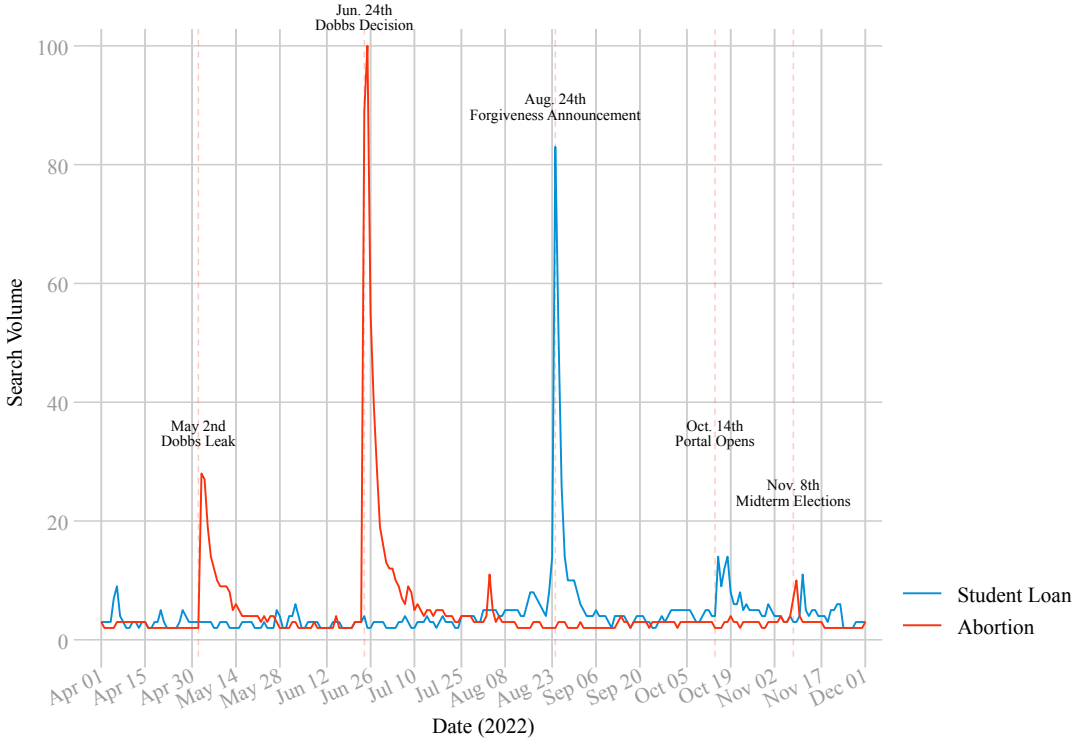
Notes: This figure plots the daily raw count of applications received by Federal Student Aid for the broad-based loan forgiveness plan announced by President Biden in August 2022. The application portal was open from October 14 to November 11. The red vertical line on October 24 marks the first major legal decision against the plan. The red vertical line on November 8 denotes election day for the 2022 midterms.

Figure 2. Perceptions of the Likelihood of Policy Changes among Student Borrowers



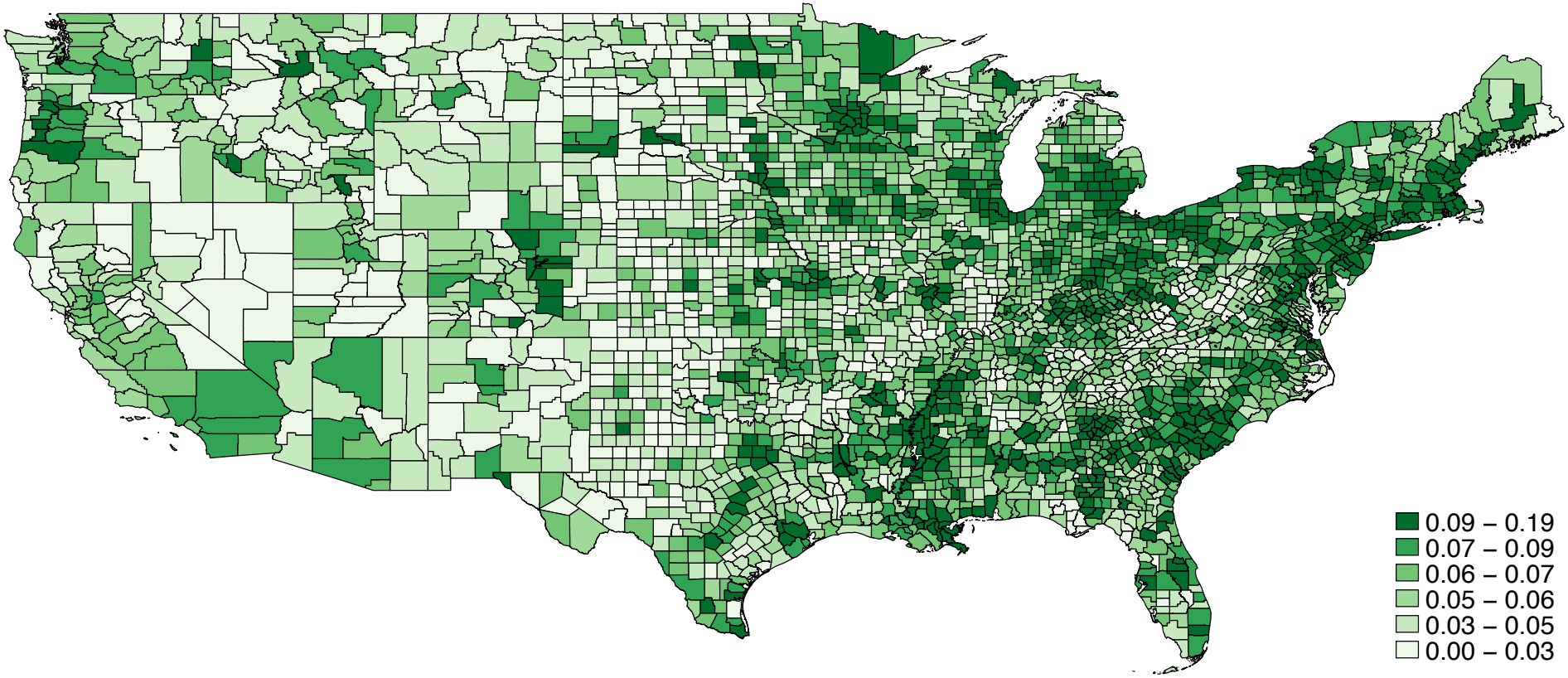
Notes: This figure plots the perception of the likelihood of increases or decreases in listed policies over time, as measured by the Survey of Consumer Expectations and relevant supplements. Individuals are asked if they belive there is an increased likelihood, no change, or decreased likelihood in that policy being implemented. No change and decrease responses are combined for clarity. Policy surveys are conducted in April, August, and December each year. The first dashed line indicated when the Federal Debt Relief plan was announced, and the second dashed line symbolizes when the Supreme Court ended the program.

Figure 3. Google Trends: Abortion & Student Loans



Notes: The figure shows Google Trends search volume by web search for the topics "Student Loan" and "Abortion" from April 1st, 2022 to December 1st, 2022. Search volume is measured on a 1 to 100 scale relative to other searched topic and time period. Major events in each topic's policy realm are denoted by a dashed line and accompanying text. The first line on May 2 was the first day when a widespread leaked report of the of the majority opinion in *Dobbs v. Jackson Women's Health Organization* decision. The second line on June 24 denotes the official release of the *Dobbs* decision which overturned *Roe v. Wade*. The third line on August 24 shows the Biden Administration's broad-based student loan debt forgiveness announcement. The fourth line on October 14 signals the the opening of the broad-based loan forgiveness application portal. The final line on November 8 is election day for the 2022 midterms.

Figure 4. Distribution of Applications as a Share of Adult Population



Notes: The figure shows the geographical distribution of applications for student loan forgiveness as a share of the voting-age population by county in 2022.

A Appendix Tables and Figures

Appendix Table A1. Predictors of County Application Share

	AppShare	
	(1)	(2)
Log Income Per Capita	-0.00340	-0.0137***
	(0.00251)	(0.00246)
Log Population Density	0.00835***	0.00803***
	(0.000350)	(0.000440)
Unemployment Rate	0.172***	0.0636
	(0.0371)	(0.0451)
White Share	0.0428***	0.0308***
	(0.00600)	(0.00729)
Black Share	0.0831***	0.103***
	(0.00680)	(0.00810)
Hispanic Share	0.0292***	0.0436***
	(0.00690)	(0.00744)
Female Share	0.191***	0.252***
	(0.0197)	(0.0206)
Under 20 Share	-0.0723***	-0.131***
	(0.0203)	(0.0226)
Over 65 Share	-0.231***	-0.254***
	(0.0156)	(0.0164)
Some College Share	0.0435***	0.0532***
	(0.00598)	(0.00690)
State FE	No	Yes
R-squared	0.681	0.776
Observations	2,558	2,558

Notes: This table presents estimates from OLS regressions. We restrict our sample to counties that have contested midterm House elections in 2022, 2018, and 2014 and that have nonmissing values for all covariates. The dependent variable is $AppShare^{POP}$: the ratio of county applications for student loan forgiveness to the population ages 18 or older. Robust standard errors are reported in parentheses. County-level characteristics are 2022 estimates. Significance levels are indicated as * 0.10 ** 0.05 *** 0.01.

Appendix Table A2. Midterm Elections with Democratic Party Presidents: CES Student Loan Borrowing and Voting in the House Elections (2014 and 2022)

Panel A: Student Loan Borrowing

	Dem Vote			Turnout		
	(1)	(2)	(3)	(4)	(5)	(6)
Borrower x 2022	0.0628***	0.0633***	0.0586***	0.0428***	0.0421***	0.0412***
	(0.00978)	(0.0101)	(0.00987)	(0.0114)	(0.00957)	(0.0101)
Borrower	0.0147**	0.0172***	0.0203***	-0.0166***	-0.0141**	-0.0143**
	(0.00647)	(0.00587)	(0.00630)	(0.00577)	(0.00593)	(0.00661)
2022	0.0114	0.0164*		-0.0437***	-0.0326***	
	(0.00826)	(0.00854)		(0.00807)	(0.00899)	
Mean Y	0.38	0.38	0.38	0.76	0.76	0.76
Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	No	No	Yes	No	No
CD x County FE	No	Yes	No	No	Yes	No
CD x County x Year FE	No	No	Yes	No	No	Yes
Observations	98,389	97,644	96,956	98,389	97,644	96,956

Panel B: Controlling for Abortion Policy Preferences

	Dem Vote			Turnout		
	(1)	(2)	(3)	(4)	(5)	(6)
Borrower x 2022	0.0618***	0.0623***	0.0588***	0.0432***	0.0429***	0.0422***
	(0.00952)	(0.00954)	(0.00946)	(0.0117)	(0.0101)	(0.0106)
Borrower	0.0147**	0.0165***	0.0186***	-0.0171***	-0.0147**	-0.0152**
	(0.00673)	(0.00587)	(0.00635)	(0.00633)	(0.00648)	(0.00711)
2022	-0.0972***	-0.0875***		-0.0330*	-0.0239	
	(0.00939)	(0.0106)		(0.0170)	(0.0168)	
Pro-Access x 2022	0.117***	0.111***	0.110***	-0.0112	-0.00879	-0.00836
	(0.0121)	(0.0115)	(0.0128)	(0.0151)	(0.0148)	(0.0157)
Pro-Access	0.189***	0.179***	0.182***	-0.0286***	-0.0343***	-0.0359***
	(0.0127)	(0.0118)	(0.0120)	(0.00789)	(0.00747)	(0.00758)
Mean Y	0.35	0.35	0.35	0.78	0.78	0.78
Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	No	No	Yes	No	No
CD x County FE	No	Yes	No	No	Yes	No
CD x County x Year FE	No	No	Yes	No	No	Yes
Observations	96,693	95,944	95,255	96,693	95,944	95,255

Notes: This table presents regression estimates on the relation between student borrowing and voting behavior in midterm House elections using individual-level survey data from the CES. All regressions follow our main analysis except we exclude observations from the 2018 election year survey. Standard errors are clustered at the state level. Significance levels: * 0.10, ** 0.05, *** 0.01.

Appendix Table A3. Applications and Democratic Vote Share in House Midterm Elections, 2010-2022 (Appendix Version)

	Democratic Vote Share							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\text{AppShare}^{\text{POP}}$ x 2022	0.873***	0.644***	0.668***	0.757***	0.778***	0.382**	0.434**	0.403**
	(0.140)	(0.101)	(0.117)	(0.134)	(0.121)	(0.149)	(0.169)	(0.157)
$\text{AppShare}^{\text{POP}}$	1.304***	0.386	0.402*	0.461	0.305	0.403	0.351	0.368
	(0.372)	(0.239)	(0.237)	(0.337)	(0.245)	(0.259)	(0.262)	(0.272)
2022	-0.116***	-0.0853***	-0.0963***	-0.122***				
	(0.0188)	(0.00911)	(0.0116)	(0.0153)				
Log of Income Per Capita	0.0394	-0.00351	0.0135	0.0321	0.0108	-0.00592	-0.0331	-0.00792
	(0.0320)	(0.0205)	(0.0225)	(0.0228)	(0.0220)	(0.0217)	(0.0217)	(0.0235)
Log of Population Density	0.00153	0.00598	0.00473	-0.00733	0.00389	0.00226	-0.000997	0.00159
	(0.00513)	(0.00410)	(0.00488)	(0.00476)	(0.00499)	(0.00533)	(0.00592)	(0.00552)
Unemployment Rate	1.046***	0.757***	0.716***	-0.0188	0.886***	0.776***	0.624***	1.052***
	(0.172)	(0.156)	(0.167)	(0.138)	(0.240)	(0.228)	(0.222)	(0.237)
White Share	-0.672***	-0.644***	-0.662***	-0.670***	-0.642***	-0.673***	-0.689***	-0.680***
	(0.0645)	(0.0304)	(0.0379)	(0.0979)	(0.0407)	(0.0456)	(0.0616)	(0.0542)
Black Share	-0.377***	-0.0353	-0.0711	0.0640	-0.0539	-0.0939	-0.140	-0.108
	(0.0818)	(0.0601)	(0.0676)	(0.145)	(0.0688)	(0.0740)	(0.0880)	(0.0790)
Hispanic Share	-0.366***	-0.0743	-0.0924	-0.101	-0.0812	-0.0841	-0.0983	-0.0650
	(0.0686)	(0.0913)	(0.0932)	(0.120)	(0.0957)	(0.104)	(0.118)	(0.0998)
Under 20 Share	-1.696***	-1.962***	-2.068***	-2.618***	-2.112***	-2.251***	-2.417***	-2.278***
	(0.293)	(0.213)	(0.234)	(0.263)	(0.234)	(0.251)	(0.268)	(0.252)
Over 65 Share	-0.291	-0.596***	-0.652***	-0.676***	-0.757***	-0.857***	-0.947***	-0.916***
	(0.223)	(0.147)	(0.161)	(0.233)	(0.174)	(0.186)	(0.204)	(0.197)
Some College Share	0.249***	0.178***	0.170***	0.215***	0.196***	0.139**	0.0713	0.126**
	(0.0531)	(0.0429)	(0.0459)	(0.0783)	(0.0489)	(0.0519)	(0.0587)	(0.0571)
Female Share	0.409*	0.913***	0.877***	1.176***	0.916***	1.008***	1.086***	1.030***
	(0.224)	(0.146)	(0.157)	(0.374)	(0.148)	(0.166)	(0.195)	(0.165)
Mean Y	0.350	0.350	0.357	0.498	0.357	0.357	0.351	0.357
State FE	No	Yes	Yes	Yes	No	No	Yes	Yes
Balanced Sample	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Vote Weighted	No	No	No	Yes	No	No	No	No
State-by-Year FE	No	No	No	No	Yes	Yes	Yes	Yes
Controls × 2022	No	No	No	No	No	Yes	Yes	Yes
Includes 2018	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Includes Abortion Ballot States	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Adjusted R^2	0.471	0.660	0.651	0.731	0.689	0.693	0.682	0.697
Observations	11454	11454	9728	9728	9728	9728	7296	8456

Notes: This table displays the estimates from regressions predicting county Democratic party vote share in the House midterm elections in 2010, 2014, 2018, and 2022. The table follows our analysis in the main text except that we show the estimates on the county control variables. For clarity, we suppress estimates on the covariate interactions when they are included in the model. Standard errors are clustered at the state level. Significance levels are indicated as * 0.10 ** 0.05 *** 0.01.

Appendix Table A4. CES Robustness Check: 2022 Abortion Roll-Call Vote

	Dem Vote			
	(1)	(2)	(3)	(4)
Borrower	0.0454***	0.0369***	0.0511***	0.0434***
	(0.0121)	(0.0114)	(0.0117)	(0.0109)
No Gov't Restriction on Abortion		0.254***		0.249***
		(0.00993)		(0.00923)
Family Income $> 70k$	0.0880***	0.0828***	0.0695***	0.0657***
	(0.00955)	(0.00907)	(0.00776)	(0.00703)
Unemployed	-0.103***	-0.0993***	-0.115***	-0.109***
	(0.0147)	(0.0144)	(0.0158)	(0.0156)
Female	0.0506***	0.0370***	0.0544***	0.0403***
	(0.00718)	(0.00715)	(0.00676)	(0.00701)
Some College	0.125***	0.118***	0.117***	0.110***
	(0.00821)	(0.00805)	(0.00824)	(0.00821)
White	-0.0763***	-0.0735***	-0.0529***	-0.0500***
	(0.0128)	(0.0126)	(0.0123)	(0.0117)
Black	0.178***	0.176***	0.151***	0.153***
	(0.0199)	(0.0188)	(0.0207)	(0.0198)
Age	0.00214	0.00311**	0.00395***	0.00482***
	(0.00147)	(0.00133)	(0.00132)	(0.00120)
Age^2	-0.0000201	-0.0000273**	-0.0000359***	-0.0000421***
	(0.0000136)	(0.0000127)	(0.0000123)	(0.0000113)
Married	-0.0659***	-0.0507***	-0.0523***	-0.0398***
	(0.00907)	(0.00797)	(0.00831)	(0.00731)
Mean Y	0.38	0.38	0.38	0.38
State FE	Yes	Yes	No	No
CD x County FE	No	No	Yes	Yes
Observations	50,387	50,385	49,615	49,613

Notes: This table presents regression estimates on the relation between student borrowing and voting behavior in the 2022 midterm House elections using individual-level survey data from the CES. All regressions follow our main analysis except we introduce an indicator variable Restriction on Abortion" which equals one if individuals stated that they were in favor of prohibiting government restricting access to abortion. This specific question was only available in 2022. Standard errors are clustered at the state level. Significance levels: * 0.10, ** 0.05, *** 0.01.

Appendix Table A5. CES Robustness Check: Validated Voting

	Dem Vote			Turnout		
	(1)	(2)	(3)	(4)	(5)	(6)
Borrower x 2022	0.0364***	0.0372***	0.0366***	0.0157	0.0178*	0.0193**
	(0.00779)	(0.00849)	(0.00891)	(0.00999)	(0.00918)	(0.00896)
Borrower	0.0367***	0.0373***	0.0379***	0.0290***	0.0280***	0.0272***
	(0.00545)	(0.00537)	(0.00566)	(0.00581)	(0.00605)	(0.00609)
2022	-0.0784***	-0.0760***		0.0246*	0.0269**	
	(0.00561)	(0.00717)		(0.0139)	(0.0132)	
Pro-Access x 2022	0.0777***	0.0741***	0.0719***	-0.0252**	-0.0247**	-0.0217*
	(0.00773)	(0.00720)	(0.00791)	(0.0117)	(0.0111)	(0.0109)
Pro-Access	0.166***	0.158***	0.164***	-0.0381***	-0.0384***	-0.0386***
	(0.00743)	(0.00774)	(0.00739)	(0.00674)	(0.00689)	(0.00642)
Mean Y	0.27	0.27	0.27	0.58	0.58	0.58
Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	No	No	Yes	No	No
CD x County FE	No	Yes	No	No	Yes	No
CD x County x Year FE	No	No	Yes	No	No	Yes
Observations	147,418	146,774	145,507	147,418	146,774	145,507

Notes: This table presents regression estimates on the relation between student borrowing and voting behavior in midterm House elections using individual-level survey data from the CES. All regressions follow our main analysis except outcomes are redefined using the voter validation records in the CES. Specifically, in order for the outcomes in this table to equal one, they must have been validated (by the CES) as to have voted in the midterm election. Standard errors are clustered at the state level. Significance levels: * 0.10, ** 0.05, *** 0.01.

Appendix Table A6. Applications and 2022 Democratic Vote Share: House, Senate, and Governor Elections

	House		House within CD		Senate		Governor	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\text{AppShare}^{\text{POP}}$	0.365***	0.334*	0.290***	0.446**	0.258***	0.107	0.207***	0.336***
	(0.0712)	(0.180)	(0.0727)	(0.173)	(0.0669)	(0.119)	(0.0526)	(0.0984)
Mean Y	0.312	0.492	0.291	0.401	0.319	0.478	0.317	0.493
Pre-Election Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County Characteristic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Votes Weighted	No	Yes	No	Yes	No	Yes	No	Yes
Adjusted R^2	0.923	0.918	0.921	0.936	0.949	0.968	0.969	0.984
Observations	2558	2558	2197	2197	1903	1903	1657	1657

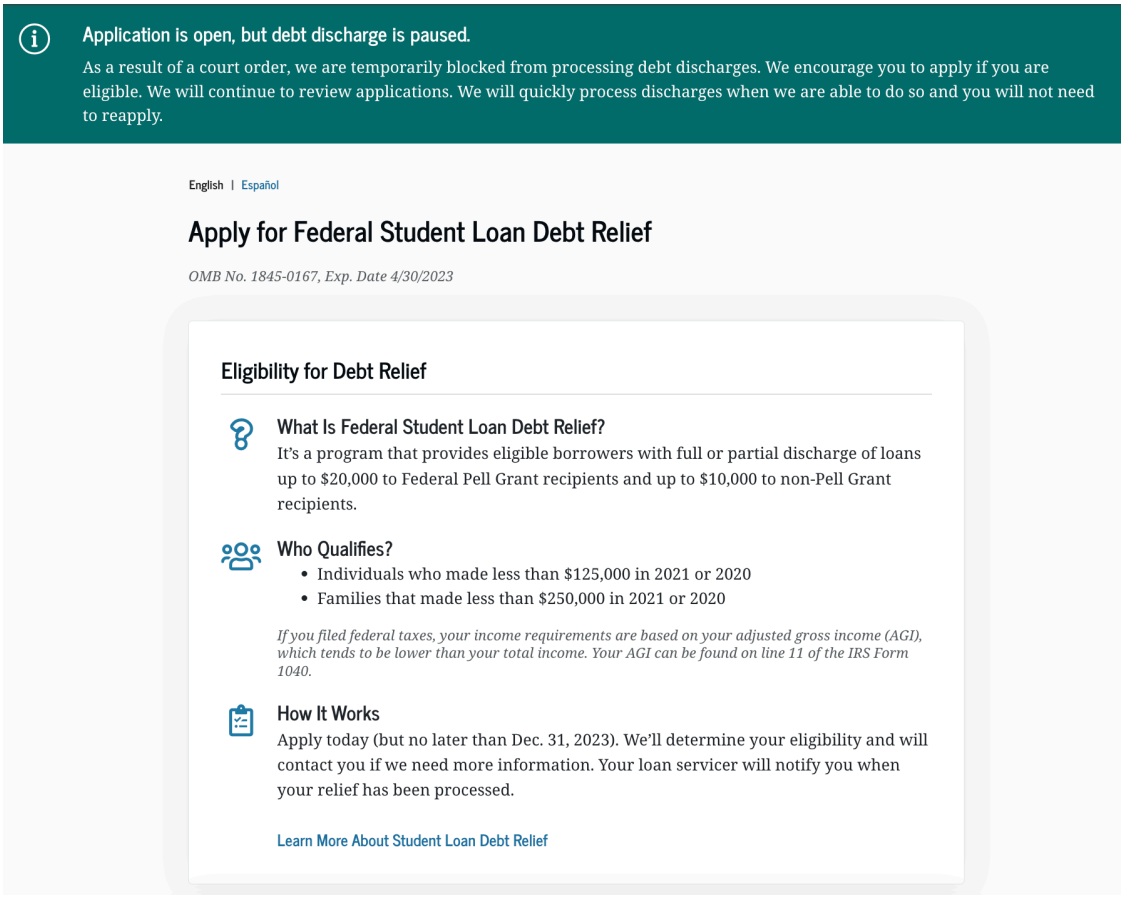
Notes: This table presents estimates from OLS regressions. The dependent variables are 2022 county Democratic party vote shares in the House (columns 1-4), Senate (columns 5-6), and Governor (7-8) races. Columns (3) and (4) are restricted to county observations that do not cross congressional district boundaries. All regressions include 2022 county-level economic and demographic characteristics, prior election controls, and state fixed effects. Prior election controls in the House (Governor) races include the 2018 House (Govenor) Democratic party vote share and the change in that vote share between 2014 and 2018. For Senate regressions, the prior election controls are the 2016 vote share and the change in vote share between 2010 and 2016 since Senate seats are up for reelection every six years. In columns 2, 4, 6, and 8 we weight regressions by the total votes cast in those 2022 elections. Analyses of each respective election are restricted to counties where we observe votes for the Democratic and Republican parties in 2022 and in the previous election controls. Robust standard errors are reported in parentheses. Significance levels are indicated as * 0.10 ** 0.05 *** 0.01.

Appendix Table A7. Controlling for Borrower Share: Applications and Democratic Vote Share in House Midterm Elections, 2010-2022

	Democratic Vote Share							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\text{AppShare}^{\text{POP}}$ x 2022	1.300***	1.045***	1.130***	1.961***	1.096***	0.729***	0.861***	0.774***
	(0.337)	(0.263)	(0.342)	(0.496)	(0.277)	(0.257)	(0.278)	(0.286)
$\text{AppShare}^{\text{POP}}$	0.482	-0.0129	0.0234	1.923***	-0.0330	0.0507	-0.0809	-0.0351
	(0.489)	(0.269)	(0.288)	(0.627)	(0.272)	(0.273)	(0.281)	(0.304)
BorShare x 2022	-0.498*	-0.444*	-0.519*	-0.987**	-0.359*	-0.397**	-0.482**	-0.414*
	(0.296)	(0.250)	(0.287)	(0.383)	(0.201)	(0.190)	(0.213)	(0.211)
BorShare	0.833**	0.464**	0.430	-1.217*	0.387	0.403	0.488*	0.452
	(0.318)	(0.216)	(0.272)	(0.625)	(0.274)	(0.271)	(0.283)	(0.273)
2022	-0.0735***	-0.0514***	-0.0564***	-0.0804***				
	(0.0226)	(0.0176)	(0.0164)	(0.0212)				
Mean Y	0.350	0.350	0.357	0.498	0.357	0.357	0.351	0.357
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	No	Yes	Yes	Yes	No	No	Yes	Yes
Balanced Sample	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Vote Weighted	No	No	No	Yes	No	No	No	No
State-by-Year FE	No	No	No	No	Yes	Yes	Yes	Yes
Controls × 2022	No	No	No	No	No	Yes	Yes	Yes
Includes 2018	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Includes Abortion Ballot States	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Adjusted R^2	0.476	0.662	0.652	0.736	0.689	0.693	0.683	0.698
Observations	11454	11454	9728	9728	9728	9728	7296	8456

Notes: This table displays the estimates from regressions predicting county Democratic party vote share in the House midterm elections in 2010, 2014, 2018, and 2022. The sample is restricted to county-year observations with contested elections. The primary coefficient of interest is on the interaction between $\text{AppShare}^{\text{POP}}$ (debt relief applications divided by the voting-age population) and an indicator for election year 2022. The following county by year characteristics are included: log income per capita, log population density, unemployment rate, and shares of the population that are White, Black, Hispanic, female share, under 20, over 65, and have at least some college experience. We suppress the display of the estimates of these covariates for clarity. Column (2) introduces state fixed effects, column (3) restricts the analysis to a balanced set of counties that have contested elections in all four midterm years, and in column (4), the regression and mean of the dependent variable are weighted by total votes cast. In Columns (5)-(8), we include state-by-year fixed effects and in Columns (6)-(8), we allow for the relationship between the controls and voting to vary in 2022. Column (7) drops the 2018 midterm observations from the sample and column (8) drops the five states that had abortion rights ballot measures in 2022. Standard errors clustered at the state level. Significance levels are indicated as * 0.10 ** 0.05 *** 0.01.

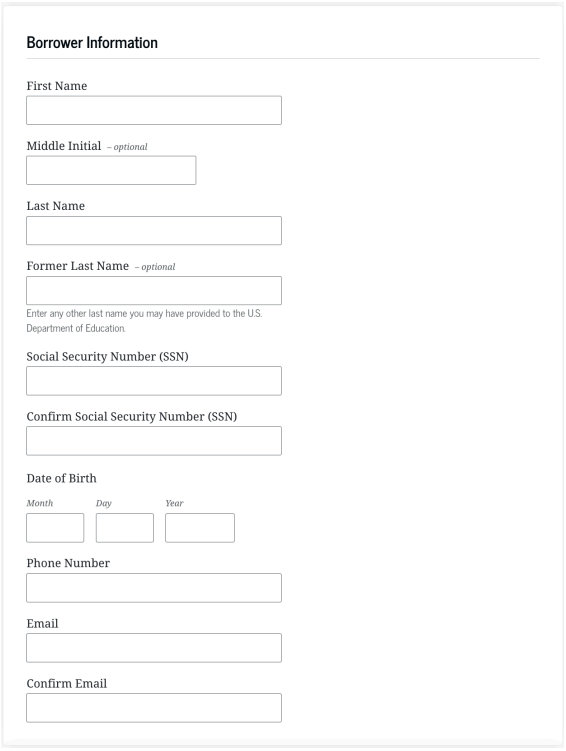
Appendix Figure A1. Eligibility Information



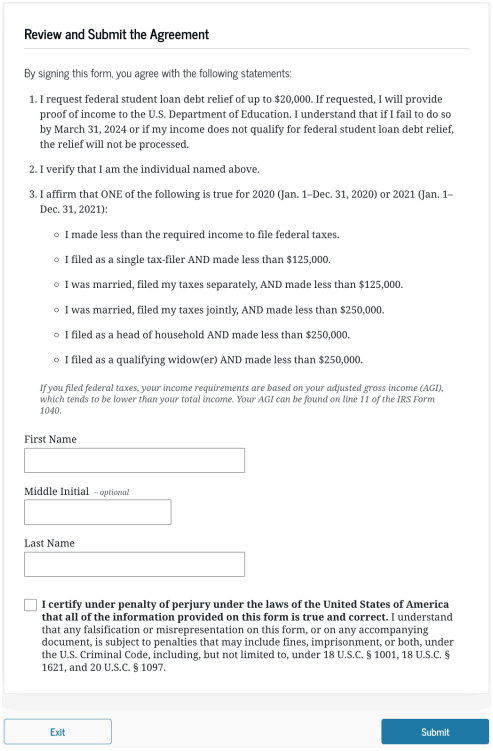
Notes: Screenshot from the Federal Debt Relief Application as of 10/28/22.

Appendix Figure A2. Borrower Information and Submission Pages

(a) Borrower Information



(b) Review and Submit



Notes: Screenshots from the Federal Debt Relief Application as of 10/28/22.

B Data Appendix

B.1 Federal Student Aid Data

B.1.1 Borrower and Pell Counts

We obtained data about the distribution of federal student loan borrowers across zip codes through a Freedom of Information Act (FOIA) request. Our data contains all federal borrowers as of December 31st, 2022. A borrower is assigned to a zip code based on the mailing information on record with their loan servicer.[22]

For zip codes where the borrower count was privacy suppressed (less than 10 borrowers), we marked the value(s) as missing.

To transform data from the zip code level to the county level, we used the Department of Housing and Urban Development's (HUD) 2023 Quarter 1 Crosswalk based on the ratio of addresses in a zip code. For a zip code that contains parts of multiple counties, the crosswalk allocates a share of the zip code's applications to each county based on the ratio of the total number of addresses of the zip code that are in a certain county. [23] There are 39,811,658 borrowers in our original zip-code level file, and there are 39,441,487 borrowers in the post-crosswalk file, meaning we are able to assign 99.07% of reported borrowers to a county.

B.1.2 Application Data

Data on applications for Federal Student Debt Relief come from the Department of Education's FOIA Library of Frequently Requested Information. Of the total number of applications provided in the dataset (25,031,904), we are able to allocate 93.51% of applications (23,408,320) to a county using the HUD 2023 Quarter 1 Crosswalk. This crosswalk allocates applications to the county level based on the share of the addresses in a given zip code that belong to a given county. If a zip code belongs only to one county, we assign all applications to that county.

[22]The Department of Education data reports zip codes and states. Three zip codes are reported twice under two different states. These zip codes cross state lines. We summed together the values for zip codes that were split. Separate from that issue, there is an issue where some zip codes are reported multiple times under different states even though these zip codes do not cross state lines. These appear to be errors in the data as all the incorrect zip-state pairs have privacy-suppressed values. Once we drop privacy-suppressed zip codes from the data, this duplicate issue no longer occurs.

[23]Similarly, we use a Geocorr crosswalk based on the population share in the 2020 Decennial Census to allocate counties in Connecticut to Connecticut Planning Regions, which are the new county-equivalent geographies in that state. This process was done with any Connecticut data under old county codes.

B.2 Election Data

Data on midterm election results come from the David Leip US Elections Atlas, which reports the total number of votes and the number of votes received by each party in every county in the election. Two counties designated as "overseas" were dropped from the analysis. David Leip county-level election data report Alaska codes using state congressional districts. As such, a Geocorr crosswalk based on the 2020 total population share is used to allocate applications from state congressional districts to Alaska county codes.

B.3 CES Data

The Cooperative Election Survey (CES) is a national survey of over fifty thousand people with demographic and political questions. We use the CES as a secondary data set to replicate results from David Leip election data with more detailed covariates. These covariates include responses to topical policy preference questions that change year-to-year.

For 2010, these covariates included the respondent's support for the American Recovery and Reinvestment Act, the State Children's Health Insurance Program, the American Clean Energy and Security Act, the Comprehensive Health Reform Act, Elena Kagan's nomination to the Supreme Court, the Financial Reform Bill, ending the "Don't Ask, Don't Tell" policy, the Foreign Intelligence Surveillance Act, and embryonic stem cell research.

For 2014, the policy covariates asked for the respondent's opinion on the Agriculture Bill, NSA phone surveillance, exemptions that would allow employers to not cover healthcare that violates the employer's religious beliefs like birth control, the US-Korea Free Trade Agreement, and lowering the number of required votes in the Senate to stop debate for nominations.

For 2018, the CES policy questions asked for the respondent's opinion on the appointment of Neil Gorsuch to the Supreme Court, a requirement for the President to obtain congressional authorization to reduce Russian sanctions, sanctions toward North Korea or entities that do business with North Korea, and the appointment of Brett Kavanaugh to the Supreme Court.

For 2022, the CES asked for respondent's support or opposition toward COVID relief, infrastructure spending, an end to government restrictions on abortion, semiconductor manufacturing incentives, net neutrality, and the appointment of Ketanji Brown Jackson to the Supreme Court. One question asked for the respondent's support for incentives for clean energy technology and allowing Medicare to negotiate drug costs, which when combined with tax regulation changes, could lower the Affordable Care Act deficit. Another question asked for the participant's support for funding for universal pre-K, child care assistance, college financial aid expansion, care for the elderly, and renewable energy/transportation.

Other variables used include whether or not a respondent has a student loan, the respon-

dent's election intentions for the midterm, and the party the respondent voted for in the past election.

B.4 Population, Age, Sex, and Race Covariates

Data regarding population counts, shares of the population within age ranges, female population shares, and racial population shares comes from the Census' Population Estimates Program (PEP). PEP uses birth, death, and migration rates to estimate different populations each year between decennial censuses.

B.5 Income and Employment Data

Per-capita income data comes from the Bureau of Economic Analysis (BEA), which uses governmental administrative records to construct an annual measure of personal income by county. The total annual income and population variables were separately distributed from a county into a planning region based on the share of the population of a county residing in a planning region according to the 2020 Decennial Census. Per-capita income is calculated by dividing total annual income by the total population. The BEA modifies county codes for some counties in Virginia and Hawaii. For this analysis, the per-capita income measure from the modified county was applied to the counties within the modified county code.

Data on total annual wages come from the Quarterly Census on Earnings and Wages.

Data on the unemployment rate comes from the Bureau of Labor Statistics. The unemployment rate is calculated by diving the unemployed population size by the total labor force size.

B.6 College Degree Data

Data on the share of the population that obtained a college degree comes from the American Community Survey (ACS) 5-year estimates of the number of adults with a bachelor's degree or higher. Data comes from the Census at the county level. A share of the total number of people with a bachelor's degree or higher in a certain county was allocated to a planning region based on the proportion of the population of the county that resides in that planning region.

B.7 Population Density Data

Data on population density leverages the 2023 Census Gazetteer Files, which provides a record of land area by county. Population density is calculated each year by dividing the total population as reported by the Census's Population Estimates Program by land area.

B.8 Google Trends Data

The data was gathered directly from the Google Trends website and displayed the relative search intensity of the topics "Student Loan" and "Abortion" from April 1st to December 1st. Google trends data measures the relative web search volume of a specific topic over a given time period. The search volume at any given point can be interpreted as a percent of the maximum observation over the given time period. When retrieving data for multiple topics simultaneously, the search intensity is compared to the intensity of both topics over that given time interval. Search volume in this instance can be interpreted as a percentage of the maximum observation of the most searched topic over a given interval. For example, if "Student Loan" has a search volume of 80 at a given time compared alongside "Abortion", then "Student Loan" received 80% of the search volume as the maximum value for "Abortion" over the entire time interval. For our data, we received weekly estimates for search intensity over the given time frame. We selected this specific time frame as shorter intervals did not capture all the salient policy events and larger time intervals returned the data monthly.

B.9 Counties vs. Congressional Districts

We chose to conduct our analysis at the county-level rather than at the congressional district level. This is because congressional districts change due to redistricting after the decennial Census, which makes comparing congressional districts between years less insightful. Moreover, most individuals are voting for a single party in all their races, a sign indicating that party affiliation may matter more than a candidate themselves. In our CES dataset, 91.7% of respondents in 2022 voted for the same party for their congressional representative, senator, and governor.[24] While people in the same candidate may be voting for different candidates, they are largely faced with a choice between the same parties. Since federal student debt cancellation is a policy associated with the Democratic party, the measure of democratic vote share is an appropriate response variable.

B.10 Geographic Transition

In datasets from the Department of Education recording the number of applications for debt forgiveness and the number of borrowers, we receive data at the zip code level. While other data is available at the county level, issues with changes in the Connecticut county geography (from counties to planning regions) compelled us to use a crosswalk to transition data to planning regions to have a common level of geography for analysis. We employ crosswalks that use some measure of population to distribute units at the zip code or county level to the

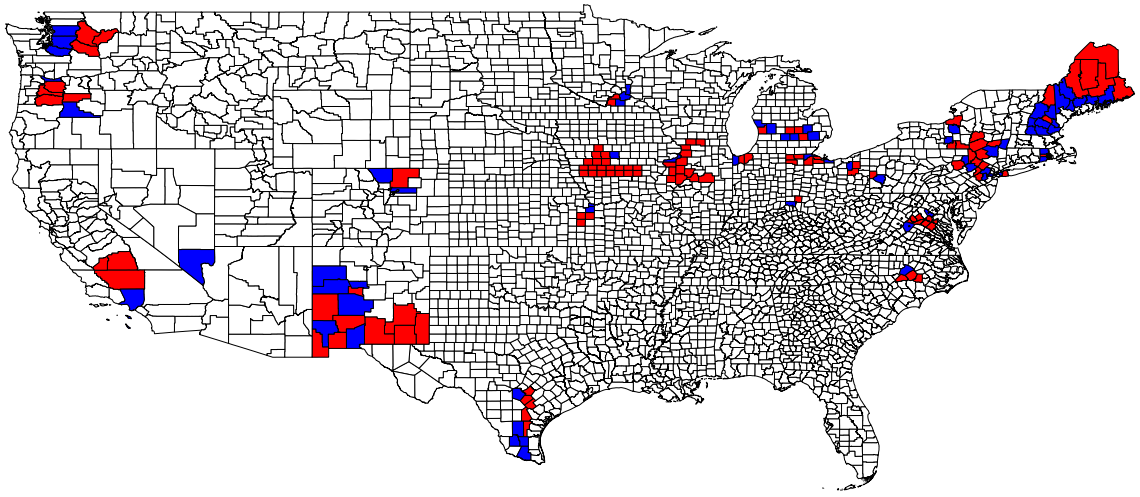
[24]This analysis is limited to the set of respondents who had an election for all three positions.

county or planning region level. This practice can introduce some error as it assumes that the variable of interest is distributed evenly among people. For example, Zip Code A may cross County 1 and County 2. 50% of people in Zip Code A live in each county. If there are 500 student borrowers in Zip Code A, 250 would be added for each County. But if the Zip Code A residents that live in County 2 are more likely to be student borrowers, then the crosswalked measure will have some error. Nevertheless, this is necessary for the analysis to occur at a common level of geography.

B.11 Battleground Counties

Battleground counties include counties that contain at least part of a congressional district identified as a battleground congressional district by Ballotpedia for the 2022 midterm elections. Ballotpedia identifes races that were competitive based on presidential and congressional results in 2020, if an incumbent is running or was a first-time representative, and depending on how other election forecasters rate the seat (Ballotpedia, 2022). Appendix Figure B1 displays a map of the counties identified as battleground counties in our sample.

Appendix Figure B1. Battleground Counties



This figure identified counties part of the battleground counties subset of the sample. Counties are identified by being at least partially included in a battleground congressional district, as defined by Ballotpedia. Counties shaded red indicate a Republican victory within the county, while blue counties indicate a Democratic victory. All of Alaska is included in the battleground county sample despite not being shown on this map.