Primary Barriers to Working Class Representation

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How well do working class candidates perform in primary elections? Answering this question can contribute to a better understanding of why workers are underrepresented in elected office relative to their share of the population. Workers run for office in low numbers in part because they lack the time and money to campaign and because local political leaders rarely recruit them (Carnes, 2018). However, there is little evidence that workers perform poorly after appearing on the ballot. Survey experiments show that voters are just as willing to support workers as white-collar candidates at the ballot box (Carnes and Lupu, 2016a; Sadin, 2016). Observational studies of election outcomes tell a similar story. Working class candidates do not receive fewer votes in general elections for the U.S. House than white-collar candidates on average (Carnes, 2018). Evidence outside the U.S. is mixed but finds either substantively small or no class differences in candidate performance (Albaugh, 2020; Matthews and Kerevel, 2021).

Prior research tells us only how workers perform when competing in general elections. It is important to understand how workers perform before securing the backing of a party. Party nominations benefit candidates by reducing the number of opponents in the field, uniting a diverse coalition of voters, and mobilizing party resources on their behalf (Aldrich, 2011). If workers win primaries, they might compete on a more level playing field against white-collar opponents nominated by rival parties. Yet, workers disproportionately lack access to the resources—namely campaign funding and the support of party leaders (Carnes, 2018)—important for winning primaries (Bonica, 2017, 2020; Hassell, 2016; Masket, 2009). As it stands, we do not know how workers fare in contests with no party nominees, such as primaries or nonpartisan elections.

Building on primary elections data from Porter and Treul (2019), we record the occupational backgrounds of U.S. House primary candidates between 2008 and 2016. We compare the vote shares and win rates of working class and white-collar candidates. Our analysis shows that workers receive a vote share 24 points lower than nonworkers on average. Once we control for contest, candidate, and district characteristics, we find an

average vote share for workers eight percentage points lower than nonworkers. Comparing win rates, we find that workers are 31 percentage points less likely to win their contests than nonworkers. With controls, the difference shrinks to 10 percentage points, but this difference is no longer statistically different from zero. Findings further suggest that candidates who held working class jobs at the time of the election, rather than candidates who held such jobs earlier in their careers, bear the brunt of these penalties.

Why do workers underperform? We go on to explore what factors might be associated with worker underperformance. Our findings are inconclusive, but preliminary analyses suggest some paths forward on this question. The difference in worker performance before and after controls is noteworthy, suggesting that workers do not accumulate the resources and support necessary to win a primary campaign. We provide some mixed evidence that fundraising and prior experience and in office moderates workers' performance. We also investigate partisanship and primary type as moderating factors, finding no clear evidence that either variable moderates the relationship. Finally, the findings do not allow us to conclude that bias against workers on the part of primary voters contributes to worker underperformance. A small sample size of workers and the possibility of omitted variable bias in the regression models do not allow us to draw the inference. Yet, the findings also leave open the possibility that it plays a role. Worker status is consistently, negatively associated with electoral performance across all models. These results do not provide dispositive evidence of primary voter bias, but neither are they inconsistent with it. Future experimental studies of the attitudes of primary voters specifically could yield more conclusive answers to this question.

The evidence presented in this study is best understood as descriptive. We do not provide causal evidence behind any of the potential mechanisms we explore, though the associations we uncover in the data can help guide future causally-oriented research. Nonetheless, this study makes three principal contributions to the literature on working class representation. First, it demonstrates that workers perform worse than nonworkers

in primary elections. Second, it explores several mechanisms that might help explain the gap. The evidence suggests that fundraising, party support, prior officeholding experience, and primary voter bias are more viable mechanisms to study further than partisanship or primary type. Third, it demonstrates that current workers underperform not only white-collar professionals but also former workers. Prior working class experience may be important for representation once candidates reach office, but research on electoral performance should distinguish between current and former workers.

Because primaries are usually the entry point for officeseekers, worker underperformance in them holds downstream consequences for working class representation. Workers would not compete in the general election, preventing them from demonstrating viability to local party leaders and donors skeptical of backing workers. They would also be less likely to win lower office and gain experience vital to running for higher office. We cannot claim with this evidence that the primary system itself causes workers to be underrepresented—party slating might also produce few working class candidates—but the primary election stage does appear to be a choke point in the pipeline of working class representatives. Researchers should further analyze why workers fare poorly in primaries and whether these findings generalize to primary and nonpartisan elections at the state and local level, where politicians often start their careers.

Explaining the Underrepresentation of the Working Class

Despite forming a majority of the population, working class Americans constitute a small fraction of elected representatives in the United States. According to the most recently available data, Americans holding manual labor, service industry, or clerical jobs constitute 52% of the adult population, but hold just 10% of city council seats, 3% of state legislative seats, and 2% of congressional seats (Carnes, 2018). The numerical underrepresentation of the working class is common in elected office across democracies, but the disparity is perhaps more pronounced at the national level in the U.S. than elsewhere.

The near absence of the working class in American lawmaking bodies has important consequences for economic policymaking. Working class members of Congress have tended to vote more liberally on economic matters, while state legislatures with more working class members tend to pass more redistributive economic policies (Carnes, 2013). Working class underrepresentation may hold important consequences for how citizens accept the legitimacy of governing institutions and their trust in those institutions. A study of Latin American countries found that citizens were less likely to trust government in countries where the national legislature had fewer working class members (Barnes and Saxton, 2019).

The leading explanation for workers' underrepresentation is that they rarely emerge to run for office. Carnes (2018) finds that the time and financial demands of campaigning burden workers disproportionately. Moreover, candidate recruiters like local party officers and civic leaders—often from white-collar backgrounds themselves—rarely ask workers to turn. Instead, they turn to their pre-existing social networks to find potential candidates. Workers are largely absent from these networks as well. Fundraising also plays a role. Access to money early in a campaign gives candidates a leg up in primary contests—an advantage for professionals like lawyers, whose social and professional networks are well-resourced and likely to donate (Bonica, 2017, 2020). Finally, certain offices provide greater institutional incentives for candidates from white-collar backgrounds to run. For example, Carnes and Hansen (2016) show that state legislatures that pay members higher salaries tend to attract more professionals to run for seats, presumably because the opportunity cost of giving up a high-paying job to serve in public office is consequently lower.

However, workers do not sit on the sidelines because they *are* less qualified or *feel* less qualified to hold elected office than Americans with white-collar backgrounds (Carnes, 2018). Politicians from the working class are no less intellectually capable than their white-collar peers (Dal Bó et al., 2017). Politicians holding college degrees seem to perform no better in office than those without (Carnes and Lupu 2016b, though see Besley, Montalvo,

and Reynal-Querol 2011). Nor do working class Americans count themselves out. In national surveys, American workers self-report equal ambition to hold office and equal confidence in their own campaign-relevant skills (e.g. public speaking, interpersonal skills) to white-collar Americans on average (Carnes, 2018).

General election voters are likely not responsible for working class underrepresentation. Survey experimental evidence has shown that respondents are no less likely to vote for a factory worker than for a business owner (Carnes and Lupu, 2016a) or for an ambulance driver over a cardiologist (Sadin, 2016). Related research measuring candidate social class on the basis of wealth or family background, rather than current occupation, is consistent with these findings. A range of studies show null or even positive effects of a working class background on voter approval in the U.S. and other democracies (Kevins, 2021; Sadin, 2016; Hoyt and DeShields, 2021; Campbell and Cowley, 2014; Vivyan et al., 2020; Griffin, Newman, and Buhr, 2020; Carnes and Sadin, 2015).

In the few observational studies of election outcomes, researchers have found that workers compete roughly on par with white-collar candidates. Carnes (2018) finds no difference in the performance of workers and white-collar candidates in general elections for the U.S. House. Outside the U.S., studies find substantively small or null differences. Matthews and Kerevel (2021) estimate that workers in German state legislative elections are nine percentage points less likely to win their contests compared to their white-collar rivals (6% vs. 15% respectively), a difference that decreases to three percentage points with controls. Albaugh (2020) finds no appreciable difference in the performance of working class and white-collar candidates in elections to the provincial legislature in New Brunswick, Canada. We have not identified any other recent studies that compare the performance of white-collar and working class candidates using observational data.

These prior studies have focused exclusively on partisan elections. Party nominations help to bring order to election contests by limiting the number of candidates competing and by concentrating campaign resources and voter support behind those candidates

(Aldrich, 2011). As a result, party support helps level the playing field between candidates with disparate personal resources.[1] The leveling function of parties in general elections—especially in an era of intense partisanship in the U.S.—might help to explain prior results finding no or small differences between workers' and white-collar candidates' performance. When parties nominate workers, those candidates should enjoy all the same benefits of nomination that any white-collar candidate would enjoy. However, there is little evidence about worker performance in nonpartisan or primary elections.

Potential Challenges for Workers in Primary Elections

The same resource barriers that deter workers from running for office also hurt their chances of winning a primary. Even if workers decide to run, a lack of autonomy over work schedules or a financial inability to take time off to campaign may hobble candidates' electoral efforts. Workers also lack elite support and campaign funds. Support from party leaders helps to secure a party's nomination, even as voters ultimately choose primary winners. In one view, parties function as a network of officeholders, activists, and policy demanders who coordinate to win power and achieve desired policy outcomes (Bawn et al., 2012; Koger, Masket, and Noel, 2010). These leaders have incentives to coordinate to nominate candidates who can win a general election and contribute to a governing majority that can deliver policy victories. While no one actor or group of actors can determine the outcome of a nomination process in the modern primary system, leaders and activists help shape the outcome through selective candidate recruitment, targeting resources to favored candidates, and clearing the field of competitors (Cohen et al., 2008; Hassell, 2016; Masket, 2009).

However, candidates need party leaders' support to succeed in primary contests and

[1]Former Chicago mayor Richard J. Daley, a son of Irish immigrants who began his career as a clerical worker and ended atop the city's infamous political machine, offered this same assessment to a reporter: "The party permits ordinary people to get ahead. Without the party, I couldn't be mayor. The rich guys can get elected on their money, but somebody like me, an ordinary person, needs the party. Without the party, only the rich would be elected to office." (Royko, 1971, p. 78).

those leaders often regard workers with skepticism. Using both descriptive and experimental evidence from a survey of county party chairs, Carnes (2018) finds that party leaders believe workers are less capable of raising enough money and winning their contests. A survey of state legislative candidates in the same study also showed workers were less likely than their white-collar counterparts to report that party insiders recruited them to run. Consequently, workers are less likely to accrue the funding, elite endorsements, media exposure, and professional campaign staff that helps candidates win (e.g. Dominguez, 2011; Hassell, 2016; Desmarais, Raja, and Kowal, 2015).

Arguably the most vital resource is money (Bonica, 2017). Outside of party networks, workers will have fewer personal resources to draw from to run their campaigns. Contacts in their personal and professional networks are also likely to have less disposable income to donate. Candidates who lack early funding are less likely to succeed in their campaigns (Bonica, 2020). Problems could compound if resource constraints or a lack of elite support lead voters to see otherwise acceptable candidates as nonviable and turn their attention to rival candidates (Utych and Kam, 2014).

Lastly, primary voters may exhibit bias against working class candidates. On one hand, there is little existing evidence that the general public favors white-collar candidates over workers (Carnes and Lupu, 2016a; Sadin, 2016). On the other hand, it is unclear if existing findings apply to primary electorates. Prior findings come from survey experimental studies using samples representative of the adult population. Primary electorates are not representative. Few voters participate in primaries (Ranney, 1972; Jewitt and Treul, 2014). Those who do participate are more partisan and more tuned into politics than the average citizen (Norrander, 2015; Jacobson, 2012; Sides et al., 2020). Given party leaders' skeptical attitudes towards working class candidates and assuming that politically attentive primary voters share some attitudes with party leaders, it is at least plausible that primary electorates have systematically different views than the general public. Therefore, we do not know if we can draw inferences about the preferences of

primary voters from population-based survey experiments.

Moreover, because primary candidates have not yet won a party nomination, primary voters cannot use party label as a cue as they would in a general election. Party labels help voters make inferences about and choose between candidates (Lupia and McCubbins, 1998). Without labels, voters turn to other cues to decide their preferred candidate (Popkin, 1991; Schaffner, Streb, and Wright, 2001). It is difficult to predict which cues voters will turn to. Occupational background can serve as a cue, and at least some voters use it to judge candidates' competence and qualifications for office. Kirkland and Coppock (2018) show that candidates' work experiences help voters discriminate between candidates in both competence judgments and vote choice in nonpartisan mayoral elections. Results elsewhere also show that voters see working class candidates as less competent than white-collar candidates (Sadin, 2016; Kirkland, 2021). Yet, Carnes and Lupu (2016a) show that voters think workers are as qualified for office as white-collar candidates, better understand the problems voters face, and hold a more leftist ideology. While partisanship likely overrides these competing considerations in general elections, it is unclear how the range of stereotypes voters hold about workers—incompetence, relatability, liberalism—might guide voters' choices in primary elections. Therefore it is conceivable that the attitudes of primary voters could hurt workers' chances of winning, despite existing evidence from population-based studies.

To summarize, workers face an uphill battle to win a party nomination. For a variety of reasons—a lack of elite support, fundraising challenges, and possibly even prejudice from primary voters—we expect to see workers underperform their white-collar rivals. Researchers have not yet investigated working class performance in primaries. It is important to study them because, with few exceptions, candidates do not compete in or win general elections without winning primaries first. If working class candidates fared poorly in primaries, they would be unable to progress to general elections where evidence shows they can compete on an even playing field with white-collar candidates (Carnes, 2018).

We expect to observe the following:

H1: Working class candidates will receive a lower vote share than white-collar candidates in primary elections.

H2: Working class candidates will be less likely to win their contests than white-collar candidates.

Data

We study primary elections for seats in the U.S. House of Representatives. We build upon data collected by Porter and Treul (2019), who recorded the performance of all congressional primary candidates dating back to 1980. We directed a team of research assistants to use web searches to identify the candidates' occupations throughout their lifetimes. Research assistants gathered information from candidate websites, local news sources, political blogs, and the candidates' public-facing social media profiles.[2] Due to the large number of primary candidates running each year, we limited the data to House candidates who ran between 2008 and 2016. Research assistants coded candidates as workers if they held clerical jobs, manual labor jobs, or worked in the service industry. We also included labor union organizers and enlisted members of the Armed Forces (but not commissioned officers). A second coder reviewed all candidates initially coded as workers to finalize the count. When we could not identify prior occupations, we defaulted to coding candidates as nonworkers.

Our coding scheme is similar to Carnes' (2013, 2018) but with some key departures. First, in order to decide what counts as a clerical, manual labor, or service job, we relied upon a detailed, external coding scheme, the 2018 Census Occupation Code Lists. We counted as a worker any person whose job fell in these categories: "Service Occupations,"

[2]In addition to local and regional newspapers, common source sites for the data were candidate pages on Ballotpedia, Project VoteSmart, and Facebook pages and personal LinkedIn pages.

"Office and Administrative Support Occupations," "Natural Resources, Construction, and Maintenance Occupations," and "Production, Transportation, and Material Moving Occupations."[3] Researchers could reasonably contest whether specific jobs in these categories count as "working class" jobs (e.g. pilot). Rather than make subjective decisions about individual cases among these categories, we included all jobs in these categories to maintain a parsimonious and replicable coding scheme. As a result, the types of jobs in our coding scheme largely overlap with Carnes'. However, some important occupational categories (e.g. police officers) count as workers in our coding scheme but not Carnes'.

Second, whereas Carnes (2013) measured the proportion of an officeholder's career spent in working class jobs in its preferred coding scheme, we use a binary measure and only count candidates as workers if they held a working class job *at the time they ran for Congress*.[4] We think the potential culprits for worker underperformance—fundraising challenges or skepticism from elites and voters—pose greater challenges to current workers than former workers. For example, a candidate who worked as a server early in adulthood but later went to law school is likely to have greater networking and fundraising advantages than a candidate who remained in the service industry. Likewise, voters skeptical of workers could find a candidate who used to tend bar but now manages a large company to be less objectionable. Former workers may even hold an advantage over lifelong white-collar candidates; their biography would match a widely resonant American cultural narrative of upward mobility through individual effort. Some studies suggest voters are more likely to support candidates who came from humble childhood circumstances (Carnes and Sadin, 2015; Kevins, 2021). Finally, the work-related challenges that working class candidates face while campaigning—unpredictable work schedules or potential

[3]Barnes, Beall, and Holman (2021) distinguish blue-collar workers from pink-collar workers and encourage researchers to consider gender differences in occupation. Our coding scheme includes many pink-collar jobs under the "Service Occupations" category, such as home health aides, house cleaners, and cosmetologists.

[4]Carnes (2013) also analyzes historical data from the *Roster of Congressional Officeholders* (ICPSR and McKibbin, 1997), which records members' last occupation before Congressional service. This approach is similar to ours.

financial hardship from taking time off to campaign—could dim the electoral prospects for current workers in comparison with former workers. Below, we explicitly compare the performance of current and former workers and show that former workers perform more like nonworkers than current workers in primaries. We present a list of jobs held by current workers in our data in Table A1 of the appendix. These jobs range from carpet installer to electrician to pizza delivery person.

Using our definition, we identified 77 current workers who ran in House primaries between 2008 and 2016, out of 7,869 total candidates. This equates to 0.98% of candidates, a somewhat low estimate compared to research on the composition of American legislatures, which puts the number between 2% and 5% depending on the legislature(s) and time period examined (Carnes, 2013, 2018; Hansen and Clark, 2020). If we expand the definition to include any candidates who spent part of their careers as workers, as Carnes (2013) and Hansen and Clark (2020) do in their preferred coding schemes, we identified 489 working class candidates, equivalent to 6.2% of all candidates. This estimate is somewhat higher than prior estimates of working class legislators but remains plausible. However, a higher number would also be consistent with the idea that workers face barriers to winning after entering a race. If they faced no such barriers, we would expect the proportion of candidates and officeholders with a working class background to be equivalent.

If our count of current workers is off, it is almost certainly in the direction of an undercount. We only recorded candidates as workers if we could positively identify their backgrounds. The 39 candidates for whom no information could be located were coded as nonworkers by default, given the overwhelming representation of nonworkers among candidates.[5] Though this study focuses on how workers perform conditional upon having entered a primary race, our count provides additional evidence that working class

[5]It is possible that workers make up some or even most of these missing candidates. Still, if 100% of missing candidates were current workers, our estimate of current workers as a share of primary candidates would only rise to 1.47%.

Table 1: Mean Vote Share by Candidate Experience

Group	N	Mean Vote Share	Win Rate
Workers	77	0.25	0.22
Nonworkers	7,792	0.49	0.52

Notes: Data from Porter and Treul (2019) and the authors. Election outcomes are missing for nine candidates.

candidates rarely emerge in the first place.

To determine how worker status affects candidate performance, we gathered data on two related outcome variables: *Vote Share*, or the percent of the primary contest vote won by the candidate; and *Win*, a dichotomous variable recording whether the candidate won her primary contest. As an initial test of working class candidates' performance, we present the mean vote share for workers and nonworkers in Table 1. While workers received an average vote share of 25%, nonworkers received an average share of 49%, a statistically significant difference ($p < 0.05$) of 24 percentage points.[6] In the same table we present the win rate, or the proportion of candidates in each category who won their races. Twenty-two percent of workers won their contests, but 52% of nonworkers won theirs, a statistically significant difference of 30 percentage points.

This large gap in vote shares between workers and nonworkers indicates that workers face challenges competing in primary elections. However, we cannot conclude that primary voters favor nonworkers based on these figures alone. Structural characteristics of the races in which workers compete, other characteristics of the candidates, or the places candidates run could help explain vote shares. To understand how structural factors contribute to the performance gap, we estimate a series of multiple regression models. We control for contest-level, candidate-level, and district-level variables.

We begin with contest-level variables. We control for the *Number of Candidates* in a race, since a higher number of competitors should disperse votes more widely and lead to

[6]For context, the median contest in our data featured three candidates. Contests ranged from one to 18 competitors.

lower overall vote shares for any one candidate. Given that candidates with prior electoral experience tend to receive higher vote shares (Jacobson, 1989), we include the count of *Quality Opponents* that a candidate faces in the contest. Using a binary indicator we also control for whether the candidate competed for an *Open Seat* because those contests tend to draw greater competition (Maestas and Rugeley, 2008; Maisel et al., 1994).

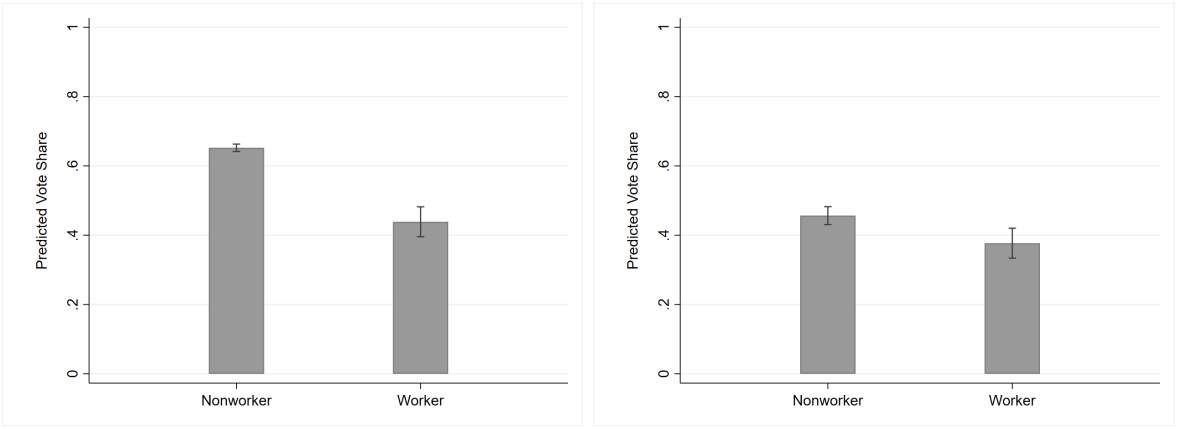
Turning to candidate-level variables we record whether the candidate is an *Incumbent* with a binary indicator, since incumbents have a high likelihood of winning their party's nomination (Cox and Katz, 1996; Carson, Engstrom, and Roberts, 2007).[7] We also record a binary indicator for *Quality Non-Incumbents*, since prior officeholders tend to outperform amateur candidates regardless of incumbency (Jacobson, 1989). We control for *Primary Funds*, the total dollars (in millions) contributed toward a candidate's bid from both campaign funds and outside spending, under the presumption that better-funded candidates will receive greater electoral support (Abramowitz, 1991; Bonica, 2017). We also include an indicator for candidates running under a *Third Party*, assuming they will receive fewer votes than major-party candidates on average.[8]

Finally, we control for three district-level variables. Two are socioeconomic characteristics of the districts that candidates run in: *District Median Income* and *District College-Educated*. The former is measured in hundreds of thousands of dollars the latter measured as a percentage of district residents with four-year degrees. We also control for *Democratic Vote Share*, measured as the vote share received by that party's presidential candidate in the concurrent or most recent presidential election.

[7] No incumbents were counted as current workers. However, we maintain the variable in the model to account for its relationship with vote share among nonworkers.

[8] All third party candidates in our data ran in California, Washington and Louisiana, where all candidates compete in one primary regardless of party.

Figure 1: Predicted Vote Share



Panel A: No Controls

Panel B: Full Controls

Note: Data from Porter and Treul (2019) and the authors. The plot estimates the predicted vote share for a Democratic candidate facing one quality challenger for an open seat, with all other controls held at their mean values. 95% confidence intervals are displayed.

Results

Our data are observed at the candidate level. Election outcomes for one candidate depend on the performance of their opponents. Therefore, we estimate our models using multilevel regression with candidates nested in contests.[9] We report robust clustered standard errors, with candidates clustered by contest.

Figure 1 displays the predicted vote share from the regression models while Table A2 in the appendix provides the full regression results. Panel A shows the predicted vote shares for workers and nonworkers with contest random effects but no other controls. The difference here approximates the difference from Table 1, showing that workers on average receive a vote share 21 points lower than nonworkers.

Panel B displays the predicted vote share from the second model adds contest-level,

[9]An alternative strategy to model primary vote shares would be to normalize candidates' expected vote shares around the number of competitors in a contest, then use OLS regression with year fixed effects to calculate estimates (see Bonica, 2020). We estimate our model using this strategy and present results in Table A3 of the appendix. Results yield similar conclusions.

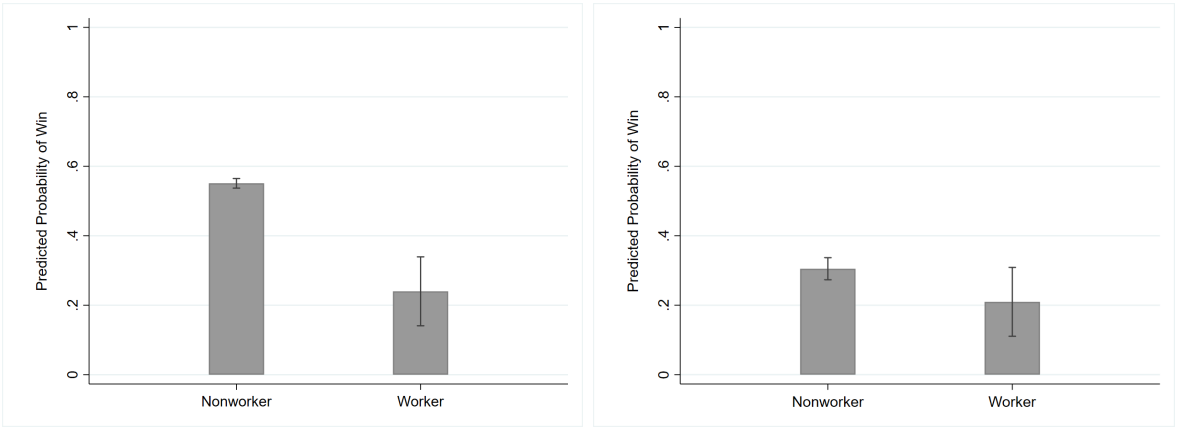
candidate-level, and district-level controls. Once these factors are included, the gap between workers' and nonworkers' vote shares decreases. However, the difference remains noteworthy and statistically significant. Workers are estimated to receive a vote share eight points lower on average. Coefficient estimates for the controls perform as expected. Incumbent status, greater primary spending, and competing for an open seat are positively and significantly associated with higher vote share. A greater number of candidates and a greater number of quality opponents is associated with decreased vote share. Third party candidates tend to receive lower vote shares than major primary candidates. None of the district characteristics are found to be significantly associated with candidate vote share. Because the controls do not fully eliminate the vote share gap between former workers and nonworkers, we cannot rule out the possibility that current workers face bias from primary voters from these results alone, assuming no omitted variable bias is present in the models.

A lower overall vote share for workers in primaries is a notable outcome in itself, but it could be the case that lower vote shares are not large enough to prevent workers from winning. Therefore, we conduct a second test examining which candidates ultimately won their primary contests. In this case, we use multilevel logistic regression to predict the binary variable *Win*, with candidates nested in contests. We again calculate robust clustered standard errors, with candidates clustered by contest.

Figure 2 presents the predicted probabilities of winning for workers and nonworkers, while Table A4 presents the full results of the multilevel logit results. In the first model with contest random effects but no controls, depicted in Panel A, we find that nonworkers have approximately a 55% probability of winning their primary contest while workers have a 24% probability of winning theirs. The difference is statistically significant.

In the subsequent model with controls, depicted in Panel B, we see that workers are still estimated to underperform nonworkers by about 10 percentage points. However, the difference is no longer statistically distinct from zero. Coefficient estimates among the

Figure 2: Predicted Probability of Win



Panel A: No Controls

Panel B: Full Controls

Note: Data from Porter and Treul (2019) and the authors. The plot estimates the predicted probability for a Democratic candidate facing one quality challenger for an open seat, with all other controls held at their mean values. 95% confidence intervals are displayed.

control variables largely reflect the results from the vote share models in terms of sign and significance. Therefore, we find mixed evidence in support of the second hypothesis. On one hand, the point estimates from these models suggest that workers are more likely to lose their contests. On the other hand, the point estimate for workers after controls is imprecise, meaning we cannot eliminate the possibility that workers are no more likely to lose once important campaign factors, like fundraising and prior officeholding experience, are accounted for. However, the fact that these controls attenuate the gap supports the idea that workers are less likely than nonworkers to run in winnable contests and accrue the funding and experience that help primary candidates win. In additional tests below, we explore which of these factors might moderate the ability of working class candidates to win.

Before that, we conduct robustness checks on our initial findings. First, we retest our main models using coarsened exact matching (Iacus, King, and Porro, 2012). We match on the observable covariates measured in the primary models presented in Figures 1 and

2. Matching reduces the sample to pair 68 workers with 258 comparable nonworkers, allowing for a more stringent test of the association between worker status and primary election outcomes. The results, presented in Table A5 of the appendix, continue to show negative coefficient estimates comparable in size to the previous regression models after matching on observables. However, the estimates are not statistically different from zero. The matching analysis raises more doubt about primary voter bias as an explanatory factor than the main models, but still cannot entirely eliminate primary voter bias as an explanation. Unobserved confounders and imprecise estimates from a small sample size of workers remain threats to inference.

The results hinge on our restriction of the definition of workers to those candidates whose last (current) job before (while) running for office was in the working class, rather than any candidate who had held a working class job in their adult life. In Tables A6 and A7 of the appendix, we present evidence that former workers perform more similarly to nonworkers than current workers in their contests. In Table A6, we show that former workers receive a mean vote share of 59%, about 34 points higher than current workers at 25%. In Table A7, we replicate the main results depicted in Figures 1 and 2 but distinguish former workers from nonworkers. Our results show that, relative to nonworkers, former workers receive a small penalty in vote share—roughly two percentage points in the fully specified model compared to eight for current workers. The small penalty does not translate into a significantly lower chance of winning a primary for former workers compared to nonworkers, even as we find that current workers are less likely to win their contests. Because the controls do not fully eliminate the vote share gap between former workers and nonworkers, we cannot rule out the possibility that former workers also face primary voter bias. However, the estimated gap is notably smaller than the one that current workers face.

We also estimate models including controls for candidate ideology. More ideologically extreme candidates are likely to suffer from reduced electoral support (e.g. Hall, 2015).

However, we omitted a measure of candidate ideology from the models above due to data limitations. Bonica's (2014) CFscores, calculated from campaign contribution data, can be used to measure ideology for candidates without voting records, but CFscores are not calculated for candidates who received contributions from fewer than 25 unique donors. Scores are missing for 25% of all candidates in our data, including roughly 24% of nonworkers and 63% of workers. After eliminating missing observations, we show in Table A8 in the appendix that ideological extremity is negatively associated with candidate vote share. The coefficient estimate for workers is comparable in size to earlier estimates, but its relationship to vote share is no longer statistically significant. We find a very small association between ideological extremity and winning, as shown in the second column of Table A8, but it remains statistically indistinct from zero with the full set of controls. Yet, it is unclear whether the attenuation of the gap between worker and nonworker performance in these models is best explained by the control for ideological extremity, the elimination of low fundraisers from the data, or some combination of the two factors.

Exploring Worker Underperformance in Primaries

So far we have shown that workers underperform nonworkers in primaries but that controlling for contest, candidate, and district characteristics helps to close the gap. However, we have not pinpointed exactly why workers underperform. In the following sections, we conduct exploratory analyses of factors that moderate the performance of workers. We ask whether fundraising, prior experience, partisanship, or primary rules can help workers close the gap with nonworkers. Though these analyses do not provide causal evidence in support of any one mechanism, they help to identify associations in the data that might be fruitful to pursue in future research.

Fundraising

Candidates must raise money to compete but, as the missing data from the prior CFscores analysis attests, workers are disproportionately likely to have few donors. Workers may compete evenly with nonworkers simply by raising enough money to compete. To evaluate this possibility, we test whether fundraising moderates workers' electoral performance. We interact the binary indicator for workers with variables capturing fundraising and add the interaction term to models with full controls. Our original variable *Primary Funds* captured the amount of money raised by each candidate. In the new tests, we use the original measure plus two alternate measures: *Log Primary Funds*, the natural log of the fundraising amount, and *Raised > $0*, a binary indicator of whether the candidate raised any campaign funds.[10]

We present results in Table A9 and Table A10 in the appendix. When it comes to candidate vote share in Table A9, the results are mixed. While we find a positive coefficient estimate on the interaction between the total money raised and occupational background in column 2, it is not statistically different from zero. In contrast, we find a negative, statistically significant coefficient estimate for the interaction term using the alternate fundraising measures in columns 4 and 6. These results suggest that well-funded workers outperform poorly funded workers. However, they also suggest that well-funded workers underperform nonworkers who raise comparable amounts of money. In Table A10, we present results for primary victory as the outcome. Here we continue to find negative coefficient estimates for the interaction terms, consistent with the idea that well-funded workers outperform poorly funded workers but underperform well-funded nonworkers. Yet, all coefficient estimates for the interaction terms in these models are statistically indistinct from zero.

Overall, these results provide mixed to weak support for the idea that lackluster

[10]Almost half of all primary candidates with a reported fundraising amount (3,509 out of 7,572), including 61% (46 out of 75) of workers, reported no fundraising whatsoever.

fundraising alone accounts for workers' underperformance. While some models suggest that it gives workers a boost in vote share, other models suggest that workers who raised more money ultimately fared little better than workers who raised little to no money.

Party Support

Candidates do better in primaries when they have the backing of a party establishment, but party elites are often skeptical of working class candidates (Hassell, 2016; Carnes, 2018). To what extent does a lack of party support hurt workers' chances? Financial support from donors who also give to the parties' congressional campaign funds (i.e. DCCC, NRCC) provides a measure of party support and predicts a higher likelihood of winning a primary (Hassell, 2016). We merge party donor data from Hassell (2021). We find that only five of the 77 workers in our data (6.5%) received at least one contribution from a party donor. In comparison, 45.8% of nonworkers in our data received at least one contribution from a party donor.

We extend the main models by adding a control for the count of party donors. The results appear in Table A11 in the appendix, and again we advise caution given the small number of workers in the data. The results suggest that greater party support is weakly but significantly associated with a higher vote share. We find a weak association between party donor support and winning the primary, but the association is not statistically significant. The addition of the party donor variable to the model does not attenuate workers' vote share deficit above and beyond other controls in the model.

It is unclear from these data whether workers with party backing outperform workers without it. On one hand, the vote shares for the five workers with party donor support were 24 points higher on average than the workers without (47% versus 23%). On the other hand, the small number of workers with party donor support prevents us from ruling out the null hypothesis that donor support is not associated with better performance among workers. Interacting the indicator for worker candidates with the count variable of party

donors in Table A11, we find no evidence that workers with more party donor support outperform workers without it.

Prior Experience

State or local office remains a traditional starting point for most members of Congress. Whether through greater perceived competence, strategic entry into winnable races, or better campaigning skills, prior officeholders tend to outperform first-time candidates in Congressional elections (e.g. Jacobson, 1989; Maestas and Rugeley, 2008; Buttice and Stone, 2012). Workers who held lower-level office could use their experience, skills, and relationships with political leaders accumulated during their public service to build the necessary support to win a primary campaign, perhaps elevating their performance over amateur worker candidates.

We test whether prior experience in office moderates the relationship between occupational background and primary performance. However, we found that very few workers held prior office—only six of the 77 we identified. Workers were disproportionately likely to be inexperienced before running compared to nonworkers; 7.8% of workers in our data had prior experience compared to 40.3% of nonworkers. Explaining why so few workers hold prior officeholding experience before running for Congress falls outside the scope of this study, but it is possible that some of the same barriers to winning Congressional primaries exist in races for state and local office. It is also possible that, after leaving state or local office, workers use their public service as a springboard to pursue job opportunities in white-collar fields like lobbying or civil service. Such candidates would appear as former workers, rather than current workers, in our Congressional primary data.

We proceed to investigate the moderating relationship of prior experience, but caution readers to take the results with a grain of salt given the extremely small N-size of experienced workers. We begin comparing the mean vote share of experienced (quality) and inexperienced (non-quality) candidates by occupational background in Table 2. Among

Table 2: Mean Vote Share by Candidate Quality

Group	N	Mean Vote Share
Quality Workers	6	0.61
Quality Non-Workers	3,141	0.70
Non-quality Workers	71	0.22
Non-quality Non-Workers	4,651	0.35

Notes: Data from Porter and Treul (2019) and the authors. Difference for quality candidates is not significant; difference for non-quality candidates is significant.

quality candidates, workers garnered nine points less than nonworkers on average. This difference is not statistically significant. Among non-quality candidates, workers received 13 points less than nonworkers on average, a difference that is significant. Therefore in terms of raw vote shares, prior experience does seem to allow working class candidates to compete more evenly with their white-collar opponents.

For further evidence, we replicated the models in Figures 1 and 2 but added an interaction term between worker status and a binary indicator of candidate quality.[11] If prior experience had a leveling effect such that quality workers and nonworkers perform equally well, we would expect to see positive and statistically significant coefficient estimates on the interaction terms across models. In contrast with the evidence in Table 2, the multiple regression results in Table A12 in the appendix show that candidate quality does not moderate the association between worker status and electoral performance. Instead we see inconsistently signed estimates that are not statistically different from zero.

We cannot draw firm conclusions one way or another given this evidence. While the raw vote share means suggest a moderating relationship, the fully specified regression models do not. It is unclear whether the null interactive relationship in the regression model is a product of a null relationship in reality or simply a very small number of observations of quality worker candidates.

[11] In these models, *Quality* is a binary indicator of prior experience that assigns both incumbents and non-incumbents a value of one. In order to estimate the model, we maintain the *Incumbent* indicator as a separate control but drop the *Quality Non-Incumbent* indicator.

Partisanship and Primary Type

We consider two potential confounding factors predicting worker performance: the party affiliation of candidates and the types of primaries that candidates compete in. We present the full analyses in Sections B and C of the appendix respectively. The analysis of partisanship shows that workers run in roughly equal proportion in Democratic and Republican primaries and perform roughly equally well in both parties' primaries. The analysis of primary type provides no strong evidence that workers perform worse in top-two primaries than typical partisan primaries. While both analyses are hampered by a small N-size of workers, they suggest neither candidate partisanship nor primary rules confound the analyses above or provide a fruitful path for future research into worker underperformance.

Conclusion

Workers underperform in primary elections. We find that workers receive a significantly smaller average vote share than nonworker candidates and mixed evidence that they are less likely to win primaries. Controlling for structural factors attenuates the vote share gap between workers and nonworkers by about 13 percentage points. It is noteworthy in itself that the controls attenuate the relationship. If workers raise less money, have the support of fewer party elites, and are less likely to have held prior office, then they disproportionately do not that help candidates win office. The descriptive statistics alone strongly point to this possibility. In our data set, 61% of workers raised no money whatsoever, compared to 46% of nonworkers; 6.5% of workers had the financial support of at least one party donor, compared to 45.8% of nonworkers; and 7.8% of workers had prior experience in elected office, compared to 40.3% of nonworkers.

We take these results as specific to primary elections in the U.S. and do not claim that they generalize to other types of elections. Furthermore, our analysis is best characterized

as descriptive. None of our analyses are causally identified, leaving open the possibility that unobserved variables explain differences in vote totals between primary candidates. As a result, we cannot pinpoint exactly why working class candidates receive fewer votes. Instead, we highlight the directions that our findings point for future research.

Above, we posited fundraising disadvantages, a lack of elite support, and primary voter bias as three potential mechanisms. First, fundraising remains a potential mechanism, though the evidence is weak. Higher fundraising totals were associated with higher vote share and higher likelihood of winning in the main models, but better worker performance does not appear to be a linear function of the amount raised. Instead, our findings are more consistent with a threshold model; candidates must raise some baseline level of cash to compete. Supplementary analysis in Table A9 in the appendix shows that workers that raised any money whatsoever outperformed workers who raised no money.

Second, elite support remains a viable mechanism, but difficulties in measuring it prevent us from making firm conclusions. Our closest approximation of measuring elite support comes through our analysis using Hassell's (2021) party donor data in Table A11 in the appendix. Controlling for party donor support does not attenuate the performance gap between workers and nonworkers, though the result could be attributed to the very small number of workers who receive party donor support. Future exploration of endorsements or qualitative exploration of party elites' support for workers may yield sturdier findings related to this mechanism.

Third, our results are inconclusive about the role of primary voter bias as a mechanism. On one hand, the coefficient estimates across models for the variable capturing worker status are consistent in terms of size and negative direction. The strongest evidence in favor of the primary voter bias explanation comes from the remaining eight-point vote share gap after controls in Figure 1. Imprecision in the estimates prevents us from ruling out a null association in many of the models, but this could be explained by the small sample size of workers. On the other hand, our analyses are not causally identified and

omitted variable bias poses a threat to inference. This threat cuts in two directions; we cannot know whether our estimates overstate or understate the true effect of worker status on electoral performance. While inconclusive, our results call for more research on how primary voters react to working class candidates. Survey experiments on candidate choice that sample respondents from a population of primary voters could provide more direct evidence speaking to this possibility.

Beyond these three theoretical mechanisms, the results provide no evidence that Democratic workers outperform Republican workers (or vice versa) or that workers fare better in either traditional or top-two primaries. Because we identify so few working class candidates with prior officeholding experience, we cannot draw firm conclusions about how working class candidates who held prior state or local office perform in House primaries. We focus on House primaries—typically farther up the ladder from where most candidates start their political careers—but we suspect our results more closely approximate the dynamics of the very first elections in a candidate's political careers (like nonpartisan local office or state legislative primaries) than results from studies of general election outcomes. Future research should examine how workers fare in state and local elections.

Nonetheless, the results raise interesting questions about how the paths to national officeholding are shaped by work experience and prior officeholding expeience. It could be the case that prior experience persuades local elites and donors to support workers, or minimally insulates workers from elite skepticism. Nonworker candidates (especially celebrities, see Canon 1990) have a clearer path to Congress by skipping state or local office than working class candidates do. However, most members of Congress enter with prior officeholding experience regardless of occupation.

Working class Americans remain underrepresented at all levels of office, leading reformers to consider interventions that could help make elected leaders more representative of the public. Though fundraising disadvantages remain a potential contributing factor to working class underrepresentation, public financing of campaigns appears unlikely to solve

the problem. Multiple studies show that public financing does not help workers compete on an even playing field, and may even deter workers from running (Carnes, 2018; Kilborn, 2018). Particularly when it comes to primary elections, convincing local party leaders to support working class candidates appears to be an important goal for reformers. If donors do not fund their campaigns and local activists and officials do not recruit them to run, workers will have little chance of breaking through the barriers to holding public office.

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Appendix to "Primary Barriers to Working Class Representation in Congress"

Contents

List of Tables

Section A: Supplementary Tables

Table A1: List of Job Titles Held by Worker Candidates

- Administrative assistant
- Automotive worker
- Bartender
- Black jack dealer
- Bridge inspector
- Cargo clerk
- Carpet installer
- Cashier
- Census worker
- Construction worker
- Corrections officer
- Cosmetologist
- Court clerk
- Custodian
- Drug store photo specialist
- Electrician
- Factory worker
- Handyman
- Heavy equipment operator
- Horse shoer
- Ironworker
- Mail carrier
- Mechanic
- Metal worker
- Nurse's assistant
- Office administrator
- Pilot
- Pizza delivery man
- Police dispatcher
- Police officer
- Retail employee
- Security guard
- Technician
- Trash collector
- Truck driver
- Union officer
- Union political director
- US Army Staff Sergeant

Notes: The above titles illustrate the range of the most recent jobs for worker candidates in our data set. We do not repeat titles for multiple candidates who held the same job.

Table A2: Occupational Background and Vote Share in House Primary Elections

	(1)	(2)
Worker	-0.21*	-0.08*
	(0.02)	(0.02)
Number of Candidates		-0.10*
		(0.01)
Quality Opponents		-0.07*
		(0.01)
Open Seat		0.09*
		(0.01)
Quality Non-Incumbent		0.13*
		(0.01)
Incumbent		0.41*
		(0.01)
Primary Funds (millions of $)		0.11*
		(0.02)
Third Party		-0.09*
		(0.01)
District Median Income (in $100,000)		-0.07
		(0.04)
District College-Educated		0.17
		(0.10)
Democratic Vote Share		-0.03
		(0.02)
Contest RE	Yes	Yes
Constant	0.65*	0.78*
	(0.01)	(0.02)
N	7869	7028
BIC	4710.99	-2292.71

Notes: Data from Porter and Treul (2019) and the authors. Estimates obtained using multilevel regression. Standard errors clustered by contest. *p<0.05. Significance tests are two-tailed.

Table A3: Occupational Background and Normalized Vote Share in House Primary Elections

	(1)	(2)
Worker	-0.46*	-0.20*
	(0.09)	(0.08)
Quality Opponents		-0.06*
		(0.01)
Open Seat		0.10*
		(0.02)
Quality Non-Incumbent		0.40*
		(0.03)
Incumbent		0.66*
		(0.02)
Primary Funds (millions of $)		0.35*
		(0.02)
Third Party		-0.53*
		(0.07)
District Median Income (in $100,000)		-0.02
		(0.09)
District College-Educated		0.02
		(0.24)
Democratic Vote Share		-0.01
		(0.05)
Year FE	Yes	Yes
Constant	1.00*	0.74*
	(0.02)	(0.05)
N	7869	7028
Adj. R^2	0.00	0.19

Notes: Data from Porter and Treul (2019) and the authors. Estimates obtained using OLS regression. *p<0.05. Significance tests are two-tailed.

Table A4: Occupational Background and Victory in House Primary Elections

	(1)	(2)
Worker	-1.44*	-0.50
	(0.29)	(0.30)
Number of Candidates		-0.44*
		(0.03)
Quality Opponents		-0.68*
		(0.06)
Open Seat		0.18*
		(0.07)
Quality Non-Incumbent		1.38*
		(0.13)
Incumbent		4.87*
		(0.21)
Primary Funds (millions of $)		1.41*
		(0.26)
Third Party		-2.66*
		(0.99)
District Median Income (in $100,000)		0.58*
		(0.26)
District College-Educated		-0.51
		(0.72)
Democratic Vote Share		0.26
		(0.15)
Constant	0.22*	0.59*
	(0.03)	(0.15)
N	7869	7028
BIC	10,836.75	5763.23

Notes: Data from Porter and Treul (2019) and the authors. Estimates obtained using multilevel logistic regression. Standard errors clustered by district-year. *p<0.05. Significance tests are two-tailed.

Table A5: Matching Analysis

	DV: Vote Share	DV: Win
Worker	-0.06	-0.39
	(0.04)	(0.33)
Constant	0.30*	-0.96*
	(0.02)	(0.14)
N	326	326
Adj. R^2	0.00	–
BIC	113.62	385.54

Notes: Data from Porter and Treul (2019) and the authors.

Table A6: Mean Vote Share for Current and Former Workers

Group	**N**	**Mean Vote Share**
Current Workers	77	0.25
Former Workers	490	0.59

Notes: Data from Porter and Treul (2019) and the authors.

Table A7: Do Current and Former Workers Perform Differently in Primaries?

	(1)	(2)	(3)	(4)
	DV: Vote Share		*DV: Win*	
Worker	-0.21*	-0.08*	-1.40*	-0.50
	(0.02)	(0.02)	(0.29)	(0.30)
Former Worker	0.07*	-0.02*	0.60*	-0.03
	(0.01)	(0.01)	(0.10)	(0.15)
Number of Candidates		-0.10*		-0.44*
		(0.01)		(0.03)
Quality Opponents		-0.07*		-0.68*
		(0.01)		(0.06)
Open Seat		0.09*		0.18*
		(0.01)		(0.07)
Quality Non-Incumbent		0.13*		1.38*
		(0.01)		(0.13)
Incumbent		0.41*		4.87*
		(0.01)		(0.21)
Primary Funds (millions of $)		0.11*		1.41*
		(0.02)		(0.26)
Third Party		-0.09*		-2.66*
		(0.01)		(0.99)
District Median Income (in $100,000)		-0.07		0.58*
		(0.04)		(0.26)
District College-Educated		0.17		-0.51
		(0.10)		(0.72)
Democratic Vote Share		-0.03		0.26
		(0.02)		(0.15)
Contest RE	Yes	Yes	Yes	Yes
Constant	0.65*	0.79*	0.18*	0.59*
	(0.01)	(0.02)	(0.03)	(0.15)
N	7869	7028	7869	7028
BIC	4695.25	-2289.24	10,810.65	5772.05

Notes: Data from Porter and Treul (2019) and the authors. Models 1-2 estimated with multilevel linear regression; models 3-4 estimated with multilevel logistic regression. Robust standard errors clustered by contest in parentheses. *p<0.05. Significance tests are two-tailed.

Table A8: Ideological Extremity and Primary Performance

	(1)	(2)
	DV: Vote Share	*DV: Win*
Worker	-0.07	-0.01
	(0.04)	(0.41)
Number of Candidates	-0.09*	-0.31*
	(0.01)	(0.03)
Quality Opponents	-0.07*	-0.72*
	(0.01)	(0.06)
Open Seat	0.05*	0.04
	(0.01)	(0.08)
Quality Non-Incumbent	0.10*	1.17*
	(0.01)	(0.13)
Incumbent	0.33*	4.39*
	(0.01)	(0.21)
Primary Funds (millions of $)	0.08*	0.92*
	(0.01)	(0.22)
Republican	-0.03*	-0.28*
	(0.01)	(0.06)
Third Party	-0.13*	-2.29*
	(0.02)	(0.99)
District Median Income (in $100,000)	-0.05	0.93*
	(0.04)	(0.33)
District College-Educated	0.20*	-1.26
	(0.10)	(0.86)
Democratic Vote Share	-0.08*	0.28
	(0.02)	(0.22)
Ideological Extremity	-0.02*	-0.04
	(0.01)	(0.06)
Contest RE	Yes	Yes
Constant	0.86*	0.84*
	(0.02)	(0.20)
N	5479	5479
BIC	-2297.90	4523.70

Notes: Data from Porter and Treul (2019), Bonica (2014) and the authors. Estimates in model 1 from multilevel regression; estimates in model 2 from multilevel logistic regression. Robust standard errors clustered by contest in parentheses. *p<0.05. Significance tests are two-tailed.

Table A9: Candidate Vote Share, Fundraising and Occupational Background

	(1)	(2)	(3)	(4)	(5)	(6)
Worker	-0.08*	-0.08*	-0.04*	-0.01	-0.06*	-0.03
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Primary Funds (millions of $)	0.11*	0.11*				
	(0.02)	(0.02)				
Worker × Primary Funds (millions of $)		0.41				
		(0.43)				
Log Primary Funds			0.02*	0.02*		
			(0.00)	(0.00)		
Worker × Log Primary Funds				-0.01*		
				(0.00)		
Raised > $0					0.13*	0.13*
					(0.01)	(0.01)
Worker × Raised > $0						-0.07*
						(0.04)
Number of Candidates	-0.10*	-0.10*	-0.10*	-0.10*	-0.10*	-0.10*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Quality Opponents	-0.07*	-0.07*	-0.08*	-0.08*	-0.07*	-0.07*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Open Seat	0.09*	0.09*	0.08*	0.08*	0.10*	0.10*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Quality Non-Incumbent	0.13*	0.13*	0.10*	0.10*	0.13*	0.13*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Incumbent	0.41*	0.41*	0.52*	0.52*	0.49*	0.49*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Third Party	-0.09*	-0.09*	-0.05*	-0.05*	-0.07*	-0.07*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
District Median Income (in $100,000)	-0.07	-0.07	-0.05	-0.05	-0.04	-0.04
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
District College-Educated	0.17	0.17	0.09	0.09	0.11	0.11
	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)
Democratic Vote Share	-0.03	-0.03	-0.01	-0.01	-0.01	-0.01
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Contest RE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.78*	0.78*	0.68*	0.68*	0.70*	0.70*
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
N	7028	7028	7029	7029	7029	7029
BIC	-2292.71	-2284.32	-2686.97	-2682.31	-2324.54	-2318.56

Notes: Data from Porter and Treul (2019) and the authors. Estimates obtained using multilevel linear regression. Robust standard errors clustered by contest in parentheses. *p<0.05. Significance tests are two-tailed.

Table A10: Candidate Victory, Fundraising and Occupational Background

	(1)	(2)	(3)	(4)	(5)	(6)
Worker	-0.50	-0.42	-0.30	-0.09	-0.42	-0.33
	(0.30)	(0.32)	(0.31)	(0.36)	(0.31)	(0.38)
Primary Funds (millions of $)	1.41*	1.41*				
	(0.26)	(0.26)				
Worker × Primary Funds (millions of $)		-5.31				
		(5.91)				
Log Primary Funds			0.11*	0.11*		
			(0.01)	(0.01)		
Worker × Log Primary Funds				-0.05		
				(0.06)		
Raised > $0					0.94*	0.94*
					(0.07)	(0.07)
Worker × Raised > $0						-0.19
						(0.60)
Number of Candidates	-0.44*	-0.44*	-0.44*	-0.44*	-0.43*	-0.43*
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Quality Opponents	-0.68*	-0.69*	-0.67*	-0.67*	-0.64*	-0.64*
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Open Seat	0.18*	0.18*	0.25*	0.25*	0.35*	0.35*
	(0.07)	(0.07)	(0.07)	(0.07)	(0.06)	(0.06)
Quality Non-Incumbent	1.38*	1.38*	1.26*	1.25*	1.39*	1.39*
	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)
Incumbent	4.87*	4.87*	5.48*	5.48*	5.33*	5.33*
	(0.21)	(0.21)	(0.21)	(0.21)	(0.21)	(0.21)
Third Party	-2.66*	-2.66*	-2.56*	-2.56*	-2.66*	-2.66*
	(0.99)	(0.99)	(0.97)	(0.97)	(0.97)	(0.97)
District Median Income (in $100,000)	0.58*	0.58*	0.91*	0.91*	0.96*	0.96*
	(0.26)	(0.26)	(0.27)	(0.27)	(0.26)	(0.26)
District College-Educated	-0.51	-0.51	-1.41	-1.41	-1.26	-1.27
	(0.72)	(0.72)	(0.73)	(0.73)	(0.70)	(0.70)
Democratic Vote Share	0.26	0.26	0.44*	0.45*	0.38*	0.38*
	(0.15)	(0.15)	(0.16)	(0.16)	(0.16)	(0.16)
Contest RE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.59*	0.58*	-0.16	-0.17	-0.09	-0.09
	(0.15)	(0.15)	(0.16)	(0.16)	(0.16)	(0.16)
N	7028	7028	7029	7029	7029	7029
BIC	5763.23	5771.62	5728.02	5736.34	5817.10	5825.86

Notes: Data from Porter and Treul (2019) and the authors. Estimates obtained using multilevel logistic regression. Robust standard errors clustered by contest in parentheses. *p<0.05. Significance tests are two-tailed.

Table A11: Party Donor Support and Worker Performance

	(1)	(2)	(3)	(4)
	DV: Vote Share		*DV: Win*	
Worker	-0.08*	-0.08*	-0.50	-0.46
	(0.02)	(0.02)	(0.30)	(0.31)
Party Donors	0.00*	0.00*	0.01	0.01
	(0.00)	(0.00)	(0.01)	(0.01)
Worker × Party Donors		0.01		-0.07
		(0.01)		(0.10)
Number of Candidates	-0.10*	-0.10*	-0.44*	-0.44*
	(0.01)	(0.01)	(0.03)	(0.03)
Quality Opponents	-0.07*	-0.07*	-0.68*	-0.68*
	(0.01)	(0.01)	(0.06)	(0.06)
Open Seat	0.09*	0.09*	0.19*	0.19*
	(0.01)	(0.01)	(0.07)	(0.08)
Quality Non-Incumbent	0.13*	0.13*	1.36*	1.36*
	(0.01)	(0.01)	(0.13)	(0.13)
Incumbent	0.40*	0.40*	4.63*	4.63*
	(0.01)	(0.01)	(0.27)	(0.27)
Primary Funds (millions of $)	0.11*	0.11*	1.20*	1.20*
	(0.02)	(0.02)	(0.33)	(0.33)
Third Party	-0.09*	-0.09*	-2.66*	-2.66*
	(0.01)	(0.01)	(0.99)	(0.99)
District Median Income (in $100,000)	-0.07	-0.07	0.53*	0.53*
	(0.04)	(0.04)	(0.27)	(0.27)
District College-Educated	0.17	0.17	-0.54	-0.53
	(0.10)	(0.10)	(0.72)	(0.72)
Democratic Vote Share	-0.03	-0.03	0.25	0.25
	(0.02)	(0.02)	(0.15)	(0.15)
Constant	0.79*	0.79*	0.61*	0.61*
	(0.02)	(0.02)	(0.15)	(0.15)
Observations	7028	7028	7028	7028
BIC	-2298.52	-2290.68	5759.31	5767.89

Notes: Data from Porter and Treul (2019), Hassell (2021) and the authors. Estimates in model 1 from multilevel regression; estimates in model 2 from multilevel logistic regression. Robust standard errors clustered by contest in parentheses. *p<0.05. Significance tests are two-tailed.

Table A12: Does Prior Experience Put Workers on an Even Playing Field with Nonworkers?

	(1)	(2)	(3)	(4)
	DV: Vote Share		*DV: Win*	
Worker	-0.10*	-0.08*	-0.81*	-0.48
	(0.02)	(0.02)	(0.33)	(0.33)
Quality Candidate	0.33*	0.13*	2.26*	1.38*
	(0.01)	(0.01)	(0.06)	(0.13)
Worker × Quality Candidate	-0.21	0.02	-0.91	-0.22
	(0.15)	(0.12)	(0.98)	(0.73)
Number of Candidates		-0.10*		-0.44*
		(0.01)		(0.03)
Quality Opponents		-0.07*		-0.68*
		(0.01)		(0.06)
Incumbent		0.28*		3.49*
		(0.01)		(0.23)
Open Seat		0.09*		0.18*
		(0.01)		(0.07)
Primary Funds (millions of $)		0.11*		1.41*
		(0.02)		(0.26)
Third Party		-0.09*		-2.66*
		(0.01)		(0.99)
District Median Income (in $100,000)		-0.07		0.58*
		(0.04)		(0.26)
District College-Educated		0.17		-0.51
		(0.10)		(0.72)
Democratic Vote Share		-0.03		0.26
		(0.02)		(0.15)
Contest RE	Yes	Yes	Yes	Yes
Constant	0.51*	0.78*	-0.59*	0.59*
	(0.01)	(0.02)	(0.04)	(0.15)
N	7869	7028	7869	7028
BIC	1970.02	-2283.91	9175.55	5772.03

Notes: Data from Porter and Treul (2019) and the authors. Models 1-2 estimated with multilevel linear regression; models 3-4 estimated with multilevel logistic regression. Robust standard errors clustered by contest in parentheses. *p<0.05. Significance tests are two-tailed.

Section B: Partisanship and Worker Performance

In this section, we consider whether workers perform better in one party's primary or another. It could be the case that workers face no penalty in Democratic primaries but face a large penalty in Republican primaries or vice versa. During the period of study (2008-16) workers did not fall cleanly into either party's coalition of support. Organized labor historically allied with the Democratic Party, but union influence in the party has declined for decades as neoliberal economic views gained traction among Democratic elites (Bucci and Reuning, 2021). Yet, given the Republican Party's conservative economic policies and historical hostility to organized labor, it does not seem that workers would perform any better in their primaries.[1]

Table B1 displays the party affiliation of candidates by occupational background. Roughly even numbers of worker candidates competed in each party's primaries. Nonworkers were somewhat more likely to run as Republicans than workers (54% vs. 47% respectively), but roughly equal proportions of nonworkers and workers ran in Democratic primaries (44% vs. 47%). Few ran as third-party or independent candidates. The descriptive statistics are consistent with the idea that workers no longer fall neatly in either party's coalition.

We test whether party affiliation moderates the relationship between occupational background and primary performance. We reestimate the main models but exclude third party candidates and interact a *Republican* indicator with the indicator for *Workers*. Table B2 displays the results. We continue to find that workers face a roughly eight point penalty in vote share in both Republican and Democratic primaries. In Table B3, we present the fully specified models for each party separately to account for potentially different data-generating processes in each party. However, the results

[1] Journalists have frequently written about Donald Trump's appeal to the "white working class" since 2016, suggesting that some workers might increasingly find a home in the Republican Party. However, there are good reasons to be skeptical that the working class label accurately describes his base of support (Carnes and Lupu, 2021; Ogorzalek, Piston, and Puig, 2020). In any case, our data predates Trump's ascendance to the White House.

Table B1: Candidate Partisanship by Occupational Background

Group	**Nonworkers**	**Workers**
Democrats	3423	36
	(43.93%)	(46.75%)
Republicans	4202	36
	(53.93%)	(46.75%)
Third-Party/Independent	167	5
	(2.14%)	(6.49%)

Notes: Data from Porter and Treul (2019) and the authors. Counts of workers and nonworkers by party affiliation. Column percentages in parentheses.

appear largely the same. Republican workers receive a roughly ten-point penalty versus Democratic workers receiving a nine-point penalty, but these estimates are not statistically different from one another. Democratic workers are statistically less likely to win than Democratic nonworkers, but Democratic workers are no more likely to lose than Republican workers. Therefore, we find no evidence of a difference in worker performance across parties.

Table B2: Do Democratic and Republican Workers Receive Different Penalties?

	(1)	(2)	(3)	(4)
	DV: Vote Share		*DV: Win*	
Worker	-0.22*	-0.08*	-1.58*	-0.79*
	(0.04)	(0.03)	(0.41)	(0.38)
Republican	-0.08*	-0.01*	-0.45*	-0.15*
	(0.01)	(0.01)	(0.05)	(0.05)
Worker × Republican	-0.01	-0.00	0.35	0.64
	(0.05)	(0.04)	(0.59)	(0.60)
Number of Candidates		-0.10*		-0.43*
		(0.01)		(0.03)
Quality Opponents		-0.07*		-0.69*
		(0.01)		(0.06)
Open Seat		0.08*		0.17*
		(0.01)		(0.07)
Quality Non-Incumbent		0.13*		1.37*
		(0.01)		(0.13)
Incumbent		0.41*		4.86*
		(0.01)		(0.21)
Primary Funds (millions of $)		0.11*		1.41*
		(0.02)		(0.26)
District Median Income (in $100,000)		-0.07		0.58*
		(0.04)		(0.27)
District College-Educated		0.17		-0.56
		(0.10)		(0.72)
Democratic Vote Share		-0.03		0.37*
		(0.02)		(0.17)
Contest RE	Yes	Yes	Yes	Yes
Constant	0.70*	0.79*	0.49*	0.61*
	(0.01)	(0.02)	(0.04)	(0.15)
N	7697	6923	7697	6923
BIC	4580.84	-2137.82	10,526.43	5758.14

Notes: Data from Porter and Treul (2019) and the authors. Models 1-2 estimated with multilevel linear regression; models 3-4 estimated with multilevel logistic regression. Robust standard errors clustered by contest in parentheses. *p<0.05. Significance tests are two-tailed.

Table B3: Do Democratic and Republican Workers Receive Different Penalties? Separate Models

	(1)	(2)	(3)	(4)
	DV: Vote Share		*DV: Win*	
	Rep.	Dem.	Rep.	Dem.
Worker	-0.10*	-0.09*	-0.38	-1.01*
	(0.02)	(0.03)	(0.39)	(0.42)
Number of Candidates	-0.09*	-0.11*	-0.31*	-0.53*
	(0.01)	(0.01)	(0.03)	(0.05)
Quality Opponents	-0.03*	-0.04*	-0.22*	-0.33*
	(0.01)	(0.01)	(0.08)	0.10
Open Seat	0.10*	0.06*	0.32*	0.11
	(0.02)	(0.02)	(0.11)	(0.13)
Quality Non-Incumbent	0.12*	0.15*	1.31*	1.56*
	(0.01)	(0.01)	(0.18)	(0.22)
Incumbent	0.52*	0.50*	6.48*	6.77*
	(0.01)	(0.01)	(0.32)	0.42
Primary Funds (millions of $)	0.13*	0.10*	1.93*	1.85*
	(0.03)	(0.03)	(0.35)	(0.52)
District Median Income (in $100,000)	-0.13*	-0.10*	0.09	0.62
	(0.05)	(0.05)	(0.39)	(0.47)
District College-Educated	0.12	0.45*	0.04	-0.06
	(0.13)	(0.13)	(0.98)	(1.22)
Democratic Vote Share	0.75*	-0.71*	7.61*	7.18*
	(0.04)	(0.03)	(0.39)	(0.51)
Contest RE	Yes	Yes	Yes	Yes
Constant	0.32*	1.06*	-4.28*	3.73*
	(0.03)	(0.03)	(0.30)	(0.27)
N	3845	3078	3845	3078
BIC	-1795.78	-1219.24	2907.78	2212.66

Notes: Data from Porter and Treul (2019) and the authors. Estimates in model 1 from multilevel regression; estimates in model 2 from multilevel logistic regression. Robust standard errors clustered by contest in parentheses. *p<0.05. Significance tests are two-tailed.

Section C: Primary Type and Worker Performance

Congressional primaries operate according to different rules and procedures across states. Varying rules could create different incentives for candidates, party leaders, and donors that have implications for the performance of working class candidates. In top-two primaries, candidates of all parties compete in one contest. The two candidates with the highest vote shares proceed to compete in the general election regardless of party. We might expect workers to perform more poorly in top-two primaries. While much of the public and scholarly attention has focused on whether more moderate candidates emerge under top-two primaries (e.g. Sparks, 2019), scholars have also accumulated some evidence that they tend to reduce the number of candidates competing in a race (Beck and Henrickson, 2013). A speculated reason is merging of partisan primaries into one contest creates added incentives for local party leaders to rally behind a single preferred candidate. Consolidating support increases the odds that at least one of the party's candidates will proceed to the general election; multiple candidates might act as "spoilers" that allow the opposing party's candidates to claim both slots in the general election. If party leaders have added incentives to rally behind a preferred candidate in the top-two primary, working class candidates might be boxed out.

We test whether primary type moderates the association between candidate background and electoral performance. If workers performed worse in top-two primaries, we would expect to see a negative and significant coefficient estimate of the interaction term between *Worker* and *Top-Two Primary*. In Table C1, we present the results. As with the previous test of candidate quality, we urge readers to interpret the results cautiously given that only 15 of the 77 workers in our data competed in top-two primaries in California and Washington. We find no differences in workers' performance between top-two and standard partisan primaries. If anything, the positive coefficient estimate for the interaction term indicates that workers perform somewhat better in top-two primaries, all else equal. However, the lack of statistical significance for the

estimate means we cannot reject the null hypothesis that there is no difference across primary types.

Table C1: Does Primary Type Moderate Workers' Performance?

	(1)	(2)	(3)	(4)
	DV: Vote Share		*DV: Win*	
Worker	-0.22*	-0.09*	-1.43*	-0.63*
	(0.03)	(0.02)	(0.32)	(0.31)
Top-Two Primary	-0.39*	-0.06*	-0.33*	2.02*
	(0.01)	(0.02)	(0.08)	(0.13)
Worker × Top-Two Primary	0.04	0.04	0.06	0.32
	(0.03)	(0.03)	(0.77)	(0.76)
Number of Candidates		-0.10*		-0.52*
		(0.01)		(0.03)
Quality Opponents		-0.07*		-0.91*
		(0.01)		(0.08)
Open Seat		0.08*		0.37*
		(0.01)		(0.08)
Quality Non-Incumbent		0.13*		1.66*
		(0.01)		(0.15)
Incumbent		0.41*		5.02*
		(0.01)		(0.24)
Primary Funds (millions of $)		0.11*		1.56*
		(0.02)		(0.29)
Third Party		-0.08*		-4.10*
		(0.01)		(0.98)
District Median Income (in $100,000)		-0.04		-0.37
		(0.04)		(0.24)
District College-Educated		0.14		0.83
		(0.10)		(0.66)
Democratic Vote Share		-0.02		-0.03
		(0.02)		(0.14)
Contest RE	Yes	Yes	Yes	Yes
Constant	0.67*	0.77*	0.25*	1.11*
	(0.01)	(0.02)	(0.03)	(0.14)
N	7869	7028	7869	7028
BIC	4392.96	-2290.83	10,839.20	5560.74

Notes: Data from Porter and Treul (2019) and the authors. Models 1-2 estimated with multilevel linear regression; models 3-4 estimated with multilevel logistic regression. Robust standard errors clustered by contest in parentheses. *p<0.05. Significance tests are two-tailed.

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