HOW DOES WAGE INEQUALITY AFFECT THE LABOR MOVEMENT?*

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Abstract

This paper provides evidence on how wage inequality among workers affects the labor movement using three complementary research designs: a vignette experiment with union organizers, a natural policy experiment that increased wage inequality among Wisconsin school teachers, and an information intervention during the 2023 Writers Guild of America strike. Across all studies, we find that inequality undermines union strength through multiple channels. First, workers with high individual bargaining power are more likely to withdraw support in unequal environments, preferring individual over collective bargaining. Second, union organizers facing hypothetical choices strategically respond to inequality in ways that may preserve membership but limit redistribution, such as shifting their campaign away from wages and choosing smaller, more homogeneous bargaining units.

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I Introduction

The negative correlation between inequality and unionization rates in the U.S. has been extensively documented (Freeman, 1980; DiNardo, Fortin and Lemieux, 1996; Card, 2001). Farber et al. (2021) further provide causal evidence that declining unionization rates since the 1960s have contributed to the rise in income inequality. The other direction of causality—namely, the impact of inequality on the labor movement—has also been theorized (Hirsch, 1982; Acemoglu, Aghion and Violante, 2001), but has received only limited empirical attention.

Inequality within industries and occupations has risen substantially in the U.S. over recent decades. On the one hand, rising inequality among workers who could share the same union representation may increase union support by galvanizing lower-income workers who stand to benefit from redistribution, or by mobilizing workers concerned with fairness and income security, regardless of their own earnings. On the other hand, rising inequality may challenge unions' ability to attract, retain, and mobilize members. Indeed, workers with high individual bargaining power may prefer to negotiate individually (Acemoglu, Aghion and Violante, 2001) and, even when most workers favor collective representation, pay dispersion can hinder their ability to coalesce around common bargaining priorities.[1] High inequality may also change unions' objectives. For instance if high earners are less responsive to traditional union messaging on wage compression, labor organizers may strategically shift their focus toward non-wage amenities.

This paper provides causal evidence on how rising wage inequality among workers affects their support for collective bargaining and changes union organizers' strategies, such as where they campaign, whom they target, and what they demand. An ideal research design would feature exogenous variation in inequality alongside documentation of the labor movement's response across the economy. While inequality itself is seldom assigned randomly, we identify three research settings that meet these conditions.

Our first setting is a survey experiment with labor organizers. In a vignette design, organizers evaluate hypothetical firms with identical internal wage structures, but operating in labor markets that differ in wage inequality. Similar to the technological change in Acemoglu, Aghion and Violante (2001), this difference is generated by increasing some workers' market wages and decreasing others', while keeping the average market wage constant across vignettes. Organizers are asked to make incentivized strategic decisions

[1] Studying the formation of school districts in the U.S., Alesina, Baqir and Hoxby (2004) highlight how institutions such as local governments may break down due to the cost of aggregating individuals with heterogeneous preferences. In a similar vein, Goldin and Katz (1999) ascribe the birth of universal secondary education in the U.S. in the state of Iowa, at least in part, to homogeneity in income and wealth within local communities.

(e.g., how to spend organizing budgets) based on their predictions about union support. Through multiple outreach channels, we collect responses from nearly 200 organizers representing 26 unions, 15 industries, and 39 U.S. states. Under incentive-compatible choices, organizers direct campaign resources toward environments where workers have more equal labor market opportunities, consistent with their expectation of lower union support in environments where workers have unequal labor market opportunities. Should they pursue a union drive in an unequal environment, they would use strategies to mitigate the impact of inequality on union support. For instance, they are 23.6 percentage points ($p < 0.001$), or 25%, less likely to disclose market wage information in environments where workers face unequal market wages. Inequality also shapes campaign focus: in unequal environments, organizers are more likely to build campaigns around non-wage amenities at the expense of wage demands. Finally, in more unequal environments, organizers are 14.8 percentage points (168%, $p < 0.001$) more likely to target smaller bargaining units that separate workers with different market wages rather than a single firm-level union. The latter two patterns highlight a trade-off in high-inequality environments: preserving cohesion through smaller units of similar workers and focusing on less divisive demands may increase the chances of union representation, but it may also reduce the union's bargaining strength and ability to push for wage compression.

We find support for our experimental results in administrative data. Using private-sector contracts from the Office of Labor-Management Standards (OLMS) from 2002–2022, as well as Federal Mediation and Conciliation Service bargaining unit data from 2015–2021, we find that unions operating in more unequal industries are less likely to negotiate rigid pay scales, more likely to emphasize non-wage amenities over wage demands in contracts, and represent smaller bargaining units as a share of establishment employment. An analysis of AFL-CIO News content from 1955–1996 reveals that, as income inequality rose, unions' focus on pay-related issues declined from over half of all articles in the 1970s to one-third in the 1990s. While these correlational patterns do not establish causality, they are consistent with our experimental evidence on the numerous ways organizing approaches can respond to inequality, with the potential to exacerbate it.

While our first setting captures organizers' perspectives, our second provides direct evidence on how inequality affects workers' union support. We study the education sector, which has the largest population of U.S. unionized workers. A Wisconsin reform, staggered across ~400 districts, increased wage inequality among public school teachers. We combine this natural experiment with administrative data on union revenue per teacher and individual-level dues payments to study how rising inequality shapes union support.

In 2011, Wisconsin's Act 10 prohibited collective bargaining over pay scales, which had been used

to set teachers' pay based on experience and education. This ban left districts free to adjust teacher pay individually without union consent, leading to a sharp rise in wage inequality among Wisconsin teachers. Key to our design is that individual bargaining increased pay dispersion only in commuting zones (CZs) with sufficient competition for teachers, creating natural treatment and control regions that differed only in whether they experienced a rise in inequality. Using the Herfindahl-Hirshman Index (HHI) of public school teacher employment across districts within each CZ in 2010 to measure competition among public schools, we confirm that pay dispersion among teachers with the same education and experience ("position") only grew in below-median-HHI (competitive) areas: between 2010 and 2016, the within-position standard deviation in pay rose by 64.6% in low-HHI districts, while remaining essentially flat in high-HHI districts. Because average wage remained fixed by pre-determined budgets across high and low-HHI districts, and those districts shared similar teacher characteristics (eg. gender and experience), district characteristics (e.g. rural vs. urban), as well as wage levels, dispersion and growth pre-reform, we can use this setting to isolate the effect of inequality on union support.

We find that, while districts present parallel trends in union revenues per teacher pre-reform, districts exposed to the inequality shock (below-median HHI) experienced large and significant declines in union contributions after the reform took effect, while unexposed districts (above-median HHI) experienced a much smaller decline. Three years later, the gap in union revenues between the two groups reached 58% (p = 0.005). We also examine individual choices to pay union dues after the reform and show that the relative drop in union support in districts with rising inequality is driven by teachers whose wages grew the most under flexible pay. This heterogeneity corroborates the economic channel conjectured by Acemoglu, Aghion and Violante (2001), whereby, if inequality is sufficiently large, high earners prefer to bargain individually.

Our third setting is an experiment with Hollywood screenwriters during the 2023 Writers Guild of America (WGA) strike—providing additional evidence on how inequality affects workers' union support. Leveraging the insight that people typically underestimate pay inequality (Hauser and Norton, 2017; Cullen and Perez-Truglia, 2022; Stantcheva, 2024; Jäger et al., 2024), we experimentally vary writers' exposure to information about pay inequality and test whether exposure affects expressions of union support under real stakes. In a baseline survey of 400 WGA members, we establish that writers' perceived inequality is substantially more modest than actual levels, setting the stage for our experimental intervention.

Following our theoretical framework, premised on Acemoglu, Aghion and Violante (2001), we aim to study a shock to workers' perceptions of the distance between the pay they could negotiate as an

individual, and that of the median voter in the union. Therefore, we distribute a pay report that highlights pay disparities between individual pay and collectively negotiated minimums among Hollywood writers during their 2023 strike. We distribute it to WGA members 100 days into the strike, a critical juncture when Networks resumed negotiations with the Guild. To measure union support, we ask respondents: "Do most writers think WGA demands meet the needs of all members?" By randomizing whether this question appears before or after the pay report, we can discern whether pay disclosure, as an instrument shifting pay beliefs, impacts writers' responses. We find that, absent the pay report, only 9% of respondents report a lack of solidarity among writers about WGA demands, compared to 23% after seeing the pay report (difference $p < 0.001$). This shift is driven by respondents with more writing credits—our proxy for productivity. Among high-credit writers, the share reporting that union demands do not meet all members' needs increases by 20.5 percentage points ($p = 0.001$), compared to a modest and statistically insignificant 5.5 percentage point increase among low-credit writers ($p = 0.414$). This heterogeneity mirrors patterns among Wisconsin teachers as well as media accounts of the WGA strikes.[2]

Finally, we bridge the designs by estimating union-support–inequality elasticities across our settings and find similar magnitudes, in the range of -0.1 to -0.2. Using these elasticities and historical changes in within-industry-by-occupation wage dispersion, we conduct a back-of-the-envelope calculation suggesting that rising inequality can account for 5–7% of the long-run decline in union membership since 1980. This magnitude is comparable to estimates in the opposite direction: Farber et al. (2021) show that declining unionization can explain 5–10% of the inequality growth over the same period.

This paper builds on a longstanding literature examining the role of unions in shaping wages. This literature has documented the existence of a union pay premium (in the range of 0.1−0.4 log points) and debated unions' contribution to wage compression (Freeman, 1980; Card, 2001; DiNardo and Lee, 2004; Farber et al., 2021; see Jäger, Naidu and Schoefer, 2025 for a review). We complement this literature by providing empirical evidence on a reverse causal pathway (increased inequality impedes collective bargaining) as well as the underlying mechanisms for the relationship.[3] We show that individuals with high outside options predominantly drive reduced support for unions in high-inequality environments,

[2] Banks (2015) notes "some of the most egregious infighting during [WGA's 2007-2008 strike] came from high-profile writers who felt their needs were not being served." As the 2023 strike continued, *Variety* reported that "WGA began to face stronger internal pressure from a strain of its most highly paid members" (Littleton, Donnelly and Aurthur, 2023).

[3] Hirsch (1982) includes an empirical section. It estimates a simultaneous equations model using 1970 industry-level data to study the joint determination of unionism and earnings dispersion. Checchi, Visser and Van De Werfhorst (2010) and Töngür and Elveren (2014) also offer empirical evidence across several OECD countries and over time that is consistent with the reverse relationship.

consistent with descriptive evidence that support for unions is inversely correlated with one's position in the intra-firm wage distribution (Farber and Saks, 1980). Additionally, we find that, anticipating lower support, union organizers are reluctant to invest resources in high-inequality environments, further reducing the chances of union representation. This result adds to a largely correlational literature examining the characteristics of unionized workers over time and how worker preferences shape union success (Farber, 1989; Defreitas, 1993; Gerstel and Clawson, 2001). It also speaks to research on how heterogeneity by income or race can undermine organizations, including unions, by reducing collective action (Alesina and La Ferrara, 2000; Ferguson, 2016). One way to interpret these effects is through the lens of labor organizing as a public goods problem, in which workers must overcome free-riding to secure collective gains. Theoretical work shows that inequality may weaken incentives to contribute to public goods (Bardhan, Ghatak and Karaivanov, 2007), while experimental evidence summarized by Fehr and Charness (2025) shows that inequality shapes cooperation, reciprocity, and support for redistribution.

This paper further contributes to an interdisciplinary literature on the political economy of unions, recently surveyed in Kaplan and Naidu (2025). Much of this literature examines unions' external political influence, but fewer papers zoom into unions' internal organization and strategic decision-making, how they shape unionization and bargaining outcomes, and how they are shaped by the economic environment.[4] The economics literature has mainly examined one organizing strategy: strikes (see Card (1991) for a review and Massenkoff and Wilmers (2024) for recent causal evidence of strikes on wages). But many other strategies remain underexplored.[5] We leverage an opportunity to capture organizers' voices at scale to elicit how inequality shifts a broad range of organizing strategies, such as bargaining unit determination and what information to circulate among workers. Consistent with Kremer and Olken (2009), our evidence suggests that unions adapt to more unequal environments in ways that may not directly serve individuals (e.g., withholding information about market wages) but could still help ensure the sustainability of the labor movement.

Our paper also complements evidence on the role of employers in undermining unions. Theoretical work emphasizes how employers strategically leverage the negative impact of inequality on unions: Taschereau-Dumouchel (2020) presents a formal model of employer anti-union strategies in which firms over-hire high-

[4]External evidence focuses on voting (Feigenbaum, Hertel-Fernandez and Williamson, 2018; Kuziemko, Longuet-Marx and Naidu, 2026; Yan, 2025), campaign finance (Matzat and Schmeißer, 2026), lobbying (Johnson, 2020; Dodini, Salvanes and Willén, 2024), and intra-party bargaining (Gethin, Martínez-Toledano and Piketty, 2022). One exception focusing on internal organization is Boudreau et al. (2025), which looks at how union leaders influence and mobilize workers.

[5]Bronfenbrenner and Juravich (1995) and Bronfenbrenner and Hickey (2004) pioneered descriptive research on many organizing strategies, explaining how tactics that encourage rank-and-file participation increase the chances of union drive success.

skill workers, who are more likely to oppose unions, to dilute pro-union sentiment. On the empirical front, Babcock, Wang and Loewenstein (1996) show that in contract negotiations between teachers' unions and school boards, each party strategically selects salary benchmarks that favor its own position, and that greater cross-district inequality widens the scope for such selective comparisons. Farber (2001) documents another employer strategy against unions: litigating bargaining-unit scope to increase heterogeneity. Echoing this, Bronfenbrenner (1994) finds nearly one-third of employers sought to divide bargaining units by pitting distinct worker groups against one another. This evidence is reflected in open-ended answers we collected from organizers: one organizer chose to organize the equal environment "because the employer could not pit workers in one job against workers in another." Taken together, this evidence is consistent with employers taking strategic actions that can amplify the negative effects of inequality on union support we document.

Recent work shows that labor market concentration can disproportionately reduce earnings for higher-paid workers, whose outside options are most affected by limited employer competition (Jarosch, Nimczik and Sorkin, 2024; Dodini et al., 2024). Our findings complement this work by highlighting an institutional channel through which similar patterns can arise. In particular, when unions negotiate compressed pay scales in environments with heterogeneous outside options, they may alleviate monopsony power for lower-paid workers while constraining higher-paid workers' ability to capture rents from individual bargaining. As dispersion in outside options rises, support for collective bargaining among workers with greater individual leverage goes down.

Finally, we contribute to a large and growing literature on the labor market consequences of pay transparency (see Cullen (2024) for a review). Our third study leverages differences in perceptions of inequality and a pay information treatment to proxy for what is empirically hard to implement: randomizing inequality. Prior work finds that revealing pay disparities among coworkers can lower morale or work satisfaction (Breza, Kaur and Shamdasani, 2018; Card et al., 2012). Our paper identifies another unintended consequence: pay transparency often increases workers' perception of wage dispersion, accentuating the tradeoff between individual and collective bargaining, especially for high-productivity workers.

II Conceptual Framework

II.A Model

We minimally adapt the model in Acemoglu, Aghion and Violante (2001) to illustrate how inequality between workers weakens the ability of unions to negotiate compressed pay, attract members, and retain them.[6]

Consider workers who could potentially be part of the same union. After workers join a workplace, denoted C for Current, they discover whether they are high- or low-productivity, with probability $\phi < \frac{1}{2}$ of being high-productivity. High-productivity workers produce $y_h^C = \eta$, while low-productivity workers produce $y_l^C = \alpha, 0 < \alpha < \eta$ in their current employment. Workers also have an outside option (denoted as O): high-productivity workers can earn $y_h^O = A\eta$, $A > 1$, after paying a cost $\overline{e} > 0$ to move to their outside option, while low-productivity workers would earn $y_l^O = 0$ if they exit their current employer.

Firms compete by offering wage contracts that take the following linear form, $w^C(y^C) = \gamma + \beta y^C, (\beta \geq 0, \gamma \geq 0)$, where γ is the fixed component paid to all workers in the firm regardless of their productivity and β governs the degree of pay inequality between high- and low-productivity workers.

A union is defined as a coalition of workers that imposes a wage contract upon the firm, subject to a zero-profit condition. The wage schedule is determined by pure majority voting. Each worker votes to maximize their own rent from the other type, after observing both their own productivity and that of their co-workers.

The timing of actions proceeds as follows: workers realize their productivity after choosing employment at workplace C but before they decide whether to unionize or not. If there is a union, unionized workers vote over the wage policy. The firm decides whether to accept the contract offer or not. If it accepts the offer, it is committed to paying the contracted wage to all workers who stay. Workers can switch to their outside options by paying switching cost $\overline{e}$. Finally, production and consumption take place.

Absent a union, workers are paid their marginal product: $w_h^C = \eta, w_l^C = \alpha$. High-productivity workers will leave for their outside option if $A\eta - \eta \geq \overline{e}$. An individual's bargaining power rises as this "no-quitting" condition increasingly binds, either because an individual's outside option rises, or their switching costs fall.

Assume all firms employ a continuum of workers with mass at least ϵ. The law of large numbers implies that a fraction ϕ of workers at workplace C will be high-productivity before the union vote. Because $\phi < \frac{1}{2}$, majority voting favors low-productivity workers. The median union member, who has low productivity, will

[6] While the source of inequality in the original model in Acemoglu, Aghion and Violante (2001) is skill-biased technical change, the model accommodates any exogenous source of inequality, as defined in Section II.D. One significant deviation from Acemoglu, Aghion and Violante (2001) is that we do not consider upstream decisions to invest in education.

use their voting power to extract rents from high-productivity workers. The problem of the median voter is:

$$\max_{\gamma,\beta}\{\gamma+\beta\alpha\}, \text{s.t.} \tag{1}$$

$$\gamma+\beta\eta \geq A\eta-\overline{e} \qquad \text{No quitting of high-productivity workers condition} \tag{2}$$

$$\pi=-\gamma+[1-\beta]Ey^{C}\geq 0 \qquad \text{Firm's non-negative profit condition} \tag{3}$$

The unique equilibrium is characterized by the following: there exists a threshold $\eta^{*}=\frac{\overline{e}}{A-1}$, such that: For $\eta>\eta^{*}$, firms are not unionized and offer $w_{h}^{C}(\eta)=\eta, w_{l}^{C}(\alpha)=\alpha$. For $\eta\leq\eta^{*}$, firms are unionized. The union imposes a wage contract with $\beta^{*}=1-\frac{\overline{e}-(A-1)\eta}{(1-\phi)(\eta-\alpha)}\leq 1$, and $\gamma^{*}=(1-\beta^{*})[\phi\eta+(1-\phi)\alpha]$. For $\eta>\eta^{*}$, high-productivity workers leave for their outside option; otherwise, no quitting occurs.

We consider what happens when inequality rises in outside options for high-productivity ($A\eta$) versus low-productivity (0) workers. We characterize a more unequal, competitive (or skill-biased), marketplace by A, and a less unequal, competitive (or skill-biased), marketplace by A', where $A>A'$. Under greater inequality, A, workers are less likely to reach an agreement on a pay scale, eliminating all cross-subsidization across high- and low-productivity workers. High-productivity workers exit the unionized sector and thus, union membership falls. Even over ranges of A' where workers still agreed upon a pay scale, the pay scale exhibits less wage compression and could thus also degrade support for the union among lower-productivity workers. To see this, note that β^{*} is increasing in A (less cross-subsidization). When β^{*} exceeds 1, unions are unsustainable and no payscale is agreed upon.

In this model, the underlying reason for unequal outside options is not crucial for assessing the impact of inequality, so long as it is outside of the union's control: the framework can incorporate unproductive reasons why one worker might experience stronger outside options, e.g., lower switching costs.[7] However, one could consider model extensions where this reason matters. Indeed, Breza, Kaur and Shamdasani (2018) emphasize that the effects of pay transparency on morale depend on whether workers view revealed pay disparities as justified, which suggests that the source of inequality could be important for how pay differences affect union support.

[7]To see this, notice that an unproductive additive shock to inequality would be akin to adjusting the relative switching costs $\overline{e}$, and lower relative switching cost for high types affects their no-quitting condition similarly to higher A.

II.B Organizer's Choice of Bargaining Unit

Our model thus far abstracts from a prior choice that the union organizer faces: given a skill distribution of workers at the firm, how broadly should the bargaining unit be drawn? We focus on this strategic choice for two reasons. First, in the baseline model, bargaining unit composition shapes the degree of wage compression, and ultimately whether the union is sustainable. Second, bargaining unit determination is central to the organizing literature and may itself respond to inequality. Consistent with this idea, Dodini, Lovenheim and Willén (2025) document that bargaining units in the United States have become smaller over time and note that increasingly homogeneous bargaining units mitigate the ways inequality discourages unionization.

We extend the model to ask whether an organizer would choose to expand the workforce they are unionizing to include workers in the next higher tier of earnings potential (their outside option in the non-unionized sector). We characterize when the organizer—maximizing the welfare of the median voter in that union—prefers a narrower, more homogeneous unit over a broader one. This question can be asked by the organizer iteratively of each group with higher outside options.

We extend the baseline to workers $j \in \{1,2,3\}$, with inside-firm productivities $\alpha_1 < \alpha_2 < \alpha_3$ and workforce shares $\phi_1 > \phi_2 > \phi_3$, $\sum_j \phi_j = 1$. We assume $\phi_1 > \frac{1}{2}$, so type-1 workers are the strict majority and the median voter under any coalition.[8] Outside options retain the structure of the baseline: $y_1^O = 0$, $y_j^O = A_j \alpha_j - \bar{e}_j$ for $j \in \{2,3\}$ with $A_j > 1$. We impose no proportionality restriction on (A_2, A_3): outside-option competitiveness may differ across skill levels. The baseline model is nested as the special case $\phi_3 = 0$, $\alpha_1 = \alpha$, $\alpha_2 = \eta$.

The organizer first assesses whether to form the union $\{1,2\}$; this decision is exactly the baseline problem, with α_2 playing the role of η and feasibility threshold $\alpha_2^* \equiv \bar{e}_2/(A_2 - 1)$. Only if the $\{1,2\}$ union is feasible does the organizer consider expanding to $\{1,2,3\}$.[9] Given a feasible $\{1,2\}$ union, the organizer considers adding type 3. Let $Ey_{123}^C \equiv \phi_1\alpha_1 + \phi_2\alpha_2 + \phi_3\alpha_3$ denote expected output under the expanded union. The problem of the median voter in $\{1,2,3\}$ is:

$$\max_{\gamma,\beta} \{\gamma + \beta\alpha_1\}, \qquad \text{s.t.}$$

$$\gamma + \beta\alpha_j \geq A_j\alpha_j - \bar{e}_j \qquad \text{No-quitting condition for } j \in \{2,3\} \tag{4}$$

[8] This condition replaces $\phi < \frac{1}{2}$ from the baseline, where ϕ denoted the share of *high*-productivity workers. The two conditions are symmetric: the majority type controls the preferred contract.

[9] The sequential constraint reflects the practical reality that union organizers build coalitions incrementally. An organizer cannot bypass type 2 to target type 3 alone: the contract must cover a contiguous segment of the skill distribution.

$$\pi = (1-\beta)Ey^{C}_{123} - \gamma \geq 0 \qquad \text{Non-negative profit condition} \tag{5}$$

As in the baseline, the median voter minimizes β.[10] In the unique equilibrium of the expanded union, there exists a threshold $\bar{A}_3$ such that: for $A_3 \leq \bar{A}_3$, the organizer expands the bargaining unit to {1,2,3} with equilibrium piece rate β^*_{123}; for $A_3 > \bar{A}_3$, the organizer retains the narrower {1,2} union. The threshold $\bar{A}_3$ is defined by $W_1^{123} = W_1^{12}$, where $W_1^{12} = Ey^{C}_{12} - \beta^*_{12}\left(Ey^{C}_{12} - \alpha_1\right)$; $W_1^{123} = Ey^{C}_{123} - \beta^*_{123}\left(Ey^{C}_{123} - \alpha_1\right)$. The organizer expands if and only if the gain in average output exceeds the cost of reduced compression:

$$\underbrace{Ey^{C}_{123} - Ey^{C}_{12}}_{\text{gain: higher average output}} \geq \underbrace{\beta^*_{123}\left(Ey^{C}_{123} - \alpha_1\right) - \beta^*_{12}\left(Ey^{C}_{12} - \alpha_1\right)}_{\text{cost: reduced wage compression}} \tag{6}$$

As in the baseline, higher dispersion in outside options limits the degree of wage compression feasible within the union. In this extension, expanding the unit to include higher-productivity workers creates a larger base for redistribution, but their stronger outside options make the coalition more difficult to sustain, because retaining them requires less wage compression. When the gain in average output from expanding the bargaining unit no longer offsets the cost of reduced wage compression needed to satisfy the no-quitting constraint, organizers aligned with the median voter will prefer a smaller, more homogeneous union. In this case, higher inequality in the outside options of the top skill group can make *expanding* the bargaining unit unattractive (even when technically feasible): the additional surplus from including a high-productivity type can be more than offset by the wage dispersion required to retain them.

We do not model other potential motivations for expanding the unit, such as fostering worker solidarity or increasing bargaining power through unit size, as workers already have full bargaining power in both the baseline and this extension.

II.C Mapping the Model to Empirical Settings

We now describe the three empirical settings through the lens of this model. In the organizer experiment, respondents compare two workplaces that differ in the dispersion of outside options ($A > A'$) while holding fixed the average outside option and the internal wage structure. Through the lens of the baseline model, moving from the equal to the unequal workplace increases the spread in workers' outside options and

[10] The objective is decreasing in β once zero-profit binds, since $Ey^{C}_{123} > \alpha_1$ and the profit condition binds. See Appendix A for more details.

bargaining position, making cross-subsidization within a common contract more difficult to sustain. We test this prediction by asking organizers their predictions about aggregate union support in both workplaces. Through the lens of the model extension in Section II.B, moving from the equal to the unequal workplace can make a larger bargaining unit less attractive. We directly test this by asking organizers how they would draw bargaining units across the two workplaces.

In the Wisconsin public schools context, we study a reform that introduces individual negotiation for teachers. The reform increases the dispersion in outside options ($\nearrow A$) only in CZs with sufficient competition among schools.The model prediction is that support for collective pay-setting should fall most in competitive CZs, especially among teachers whose individual bargaining power rose the most after the reform.

In the Hollywood setting, the information shock operates through workers' perceptions of inequality within the unionized sector. In particular, the information treatment leads workers to learn that inequality is higher than expected. One prediction of our model for this setting, derived in Appendix B, is that high-types realize that sustaining the proposed contract requires larger transfers to the low-types than they had anticipated, making high-types less likely to support the union.

II.D Scope of Inequality

A unifying feature of our studies is that we consider inequality among workers who could plausibly share the same union representation—for example, within an occupation, as in our Hollywood and Wisconsin studies, or within a workplace, as in the organizer survey. Focusing on inequality in the labor market opportunities of the members in a potential bargaining unit allows us to adhere closely to the sources of inequality described in Acemoglu, Aghion and Violante (2001). Inequality along this dimension has risen substantially in the U.S. over recent decades. Using one-way decompositions, Appendix Figure A.1 Panel A shows that within-industry inequality accounts for 66% of the growth in earnings inequality between 1980–2015, and Panel B shows that within-occupation inequality accounts for 41% of this growth.

While inequality among workers that could share the same union representation accounts for a substantial share of the growth in labor market inequality, other forms of inequality have also grown, including cross-industry inequality and inequality between workers and employers. Our findings may not extend to these other forms of inequality as the relevant economic channels for redistribution, e.g. profit-sharing or ownership stakes, and bargaining structures may differ.

III Study I: Organizer Survey

Our goal is to understand, from the viewpoint of professional organizers, whether inequality in the individual bargaining power of workers undermines their ability to unionize and, if so, whether organizers adapt their strategies to mediate the relationship between inequality and union support.

III.A Recruitment

We collected contact information of 2,380 union organizers in the U.S. and Canada in summer 2024 across three channels. First, we collected the email addresses of 1,680 organizers from websites of over 500 national and local organizations spanning all branches of the ten largest U.S. unions. Second, we received a list of 433 publicly available emails from the organizers of 32 unions and compiled by Professor Kate Bronfenbrenner, the Director of Labor Education Research at Cornell University's School of Industrial and Labor Relations. Finally, in fall 2024, we contacted 267 organizers on LinkedIn who listed "Union Organizer" as a current or former job title. Responses were collected via both email and LinkedIn through January 2025, with participants offered a $30 gift card as an incentive.

Our final sample contains 182 respondents.[11] Of these, 49% came from our online collection, 34% from Professor Bronfenbrenner's list, and 17% from LinkedIn outreach. Respondents span 26 unions, 15 industries, 39 U.S. states, and 3 Canadian provinces (96% are U.S.-based). Appendix Table D.1 summarizes the most common unions, industries, and states, as well as individual characteristics. Most respondents have substantial campaign experience, indicating that their views are shaped by considerable time in the field: the median respondent reports 7 years of organizing experience and 66% have lead organizing experience, meaning they have worked, or work, directly for the union, directing campaign strategies, overseeing campaign executions and training other organizers.

III.B Survey Design

Methodology We conduct a vignette experiment where experienced organizers are presented with two hypothetical workplaces, which have different levels of dispersion in workers' outside options but are otherwise identical. The difference between the low- and high-dispersion scenarios simulates a

[11] We restricted our main sample to respondents who reported a valid email. Results replicate with all respondents (N = 221), including those who did not leave a valid email (Appendix D.1).

technological shock (à la Acemoglu, Aghion and Violante, 2001) that increases some workers' market wages and decreases others'. To isolate a shock to dispersion in outside options, we keep both average market wages and the internal wage structure unchanged. Organizers predict worker support and make strategic organizing choices for each scenario. We randomize scenario order to prevent sequencing bias and find similar results regardless of which environment organizers saw first (Appendix D.2). Finally, we present an incentivized choice of which workplace to allocate scarce resources toward. We truthfully assert that we will direct a significant donation to a union campaign based on their collective responses. We interpret their responses as evidence of how union organizers react to rising inequality.

Vignette Design Both scenarios, shown in Figure I and described as Factory A and Factory B, have three types of workers: Quality Control, Metal Worker, and Pipefitter. We select these occupations because they require similar levels of general human capital but are sufficiently specialized that workers cannot easily switch between them. To anchor organizers to a real-life workplace, both vignettes specify that some workers have expressed interest in unionization, but the firm is hostile to unions. We also specify that all positions share an identical internal wage of $40/hour, reflecting commonly compressed internal wages (Hazell et al., 2026). We specify that work hours are unpredictable (a non-wage amenity), and the employer refuses to sign an "Open to All" pledge.[12] The key distinction between the two scenarios lies in the structure of market wages: all workers in Factory A face identical market wages of $48/hour, while for workers in Factory B outside options vary by occupation, simulating a market demand shock that advantages one group (Pipefitters) and disadvantages another (Quality Controller). A third group (Metal Worker) faces the same outside option in both scenarios; however, their peers (Pipefitters and Quality Controllers) face outside options that are ~2 standard deviations higher or lower, respectively, according to the distribution of firm wages within narrow position titles standardized by ADP.[13] By designing a symmetric shock for Pipefitters and Quality Controllers, we hold constant the average markdown between internal and market wages. For the rest of the paper, we term Factory A the *equal environment* and Factory B the *unequal environment*. We also term Pipefitters *high outside option* workers, Metal Workers workers *medium outside option* workers, and Quality Control *low outside option* workers. We include the full survey tool in Appendix Section H.1.

[12]The "Open to All" pledge is a commitment business can make to ensure that everyone is welcome and treated fairly, regardless of their race, ethnicity, national origin, sex, sexual orientation, gender identity, immigration status, religion, or disability.

[13]We use data from Cullen, Li and Perez-Truglia (2026) to calculate the standard deviation in wages of a labor market narrowly defined by 10,000 standardized position titles.

III.C Inequality and Resource Allocation Across Firms

Our first goal is to understand how inequality affects where organizers choose to organize. In particular, we investigate how inequality shapes organizers' allocation of scarce resources across workplaces.

Survey Question We present organizers the two vignettes side-by-side and ask them: "With limited resources, which factory would you attempt to organize?" We elicit responses using the following incentive-compatible language: "We will direct a significant donation to an organization (not participating in this survey) focused on organizing a workplace closest to Factory A or Factory B, based on the answers we receive." We then ask why they made that choice (open-ended).

Results In their open-ended responses, organizers who opt to organize the equal environment often emphasize solidarity: "3 groups dealing with same pay and scheduling issues makes alignment on goals easier", "Easier to achieve and maintain solidarity among workers", "less chance for infighting." For organizers who select the unequal environment, reasons include: "2/3 are paid well below market rate and low wages could be a point of agitation", "Pipefitters are severely underpaid and we could build a campaign out of activists from that group", "It might be the harder of the two, but ultimately probably more worthwhile."

While these quotes are anecdotal, aggregate responses show a consistent pattern: 67% of organizers would attempt to organize the equal rather than the unequal environment. Panel A of Table I reports a statistical test of the null hypothesis that organizers choose randomly (i.e., 50% prefer each environment), which we reject at $p < 0.001$. This result is consistent with their perception that workers in the equal environment are more supportive of unions and outweighs the view that combating inequality in the unequal environment may be "more worthwhile."

III.D Inequality and Perceived Union Support

Given organizers' preference for the equal environment, we next unpack how they understand the directional relationship between labor market inequality and union support.

Survey Questions First, we tell organizers to assume that workers are informed about market wages, then we ask them to predict wage demands: "What hourly wage increase would each of the following groups demand for themselves in order to ratify the CBA?" Second, we ask them to predict workers'

alignment on those demands: "How easy would it be for all workers to agree on pay scale demands? This means Pipefitters agree with the demands Quality Controllers make, and vice versa." Third, we measure beliefs about worker exit: "What share of each of the following groups at Factory A/B do you think will apply for a job elsewhere during the union campaign?" Last, we measure predictions about support for a union contract: "Please share your best guess: After all the details are hammered out, what percent of workers at Factory A/B would you expect to proactively vote yes to ratify a contract?"

Results We find that organizers predict the equal environment to be an easier win for the union: the median predicted share of workers voting to ratify a contract in the equal environment is 9 percentage points higher (13%, $p < 0.001$) than in the unequal environment (Table I).

Figure II dives into factors driving organizers' belief that support would be higher in the equal environment. Panel A shows that despite identical average market wages across environments, expected hourly wage demands in the unequal environment are both more dispersed and higher on average. In the equal environment, expected wage demands for each group (shown under the y-axis headers) are all near the average market wage ($48) and within 1% of each other. By contrast, in the unequal environment, high outside option workers demand an additional $6.0 while low outside option workers demand $4.3 less (both $p < 0.001$). These responses imply that the highest wage demand is 24% higher than the lower one, substantially larger than the 1% difference in the equal environment (difference $p < 0.001$). Next, we examine how organizers expect inequality to impact union members' ability to agree on a pay scale. Implicitly, this measures if workers believe their peers' higher outside options justify higher demands, and vice versa. While 37% of organizers say they would find it difficult to bring workers to agree on a pay scale in the equal environment, 84% say so in the unequal environment ($p < 0.001$; Table I). Taken together, these results highlight that market wage inequality not only raises some individual wage expectations, but also undermines internal cohesion—making it harder for organizers to unify workers around shared demands.

Panel B of Figure II examines organizers' beliefs about workers seeking employment elsewhere, as high turnover poses a threat to unions by disrupting campaign momentum and continuity (Simms et al., 2018).[14] In the equal environment, organizers expect around 20% of workers in each job to apply elsewhere. In the unequal environment, expectations split by job: high outside option workers become

[14] According to Amazon Labor Union organizer Justine Medina, "The faster the turnover is, the harder it is to organize." (Brown, 2023). Union efforts at Amazon were undermined by higher turnover, both because Amazon challenged authorization cards signed by former employees and because turnover can make it more difficult to generate and retain support (Herrera, 2021).

much more likely to seek alternative employment (12.5pp, $p < 0.001$), low outside option workers become substantially less likely to do so (-7.2pp, $p < 0.001$), and medium outside option workers see minimal change (1.6pp, $p = 0.074$). These numbers translate into a 2.3 percentage points (11%) increase in overall departures. This pattern underscores a challenge facing union organizers under rising inequality: the increased departures among high outside option workers are only partially offset by greater retention among low outside option workers, creating higher turnover rates that could undermine union strength.

III.E Inequality and Organizing Strategies

We now investigate what campaign strategies organizers would implement in each environment, including what pay information to disclose, which issues to prioritize, and how large the bargaining unit should be. We select these specific strategies because they shape union strength and the effectiveness of worker representation. First, many workers turn to unions for greater pay transparency, and disclosure of market pay can directly confer bargaining power to workers (Jäger et al., 2024; Roussille, 2024).[15] Second, the issues organizers emphasize during a campaign set expectations about what the contract will accomplish. For example, if an organizing drive focuses on pay, then workers will expect wage demands to be more central in negotiations than if the focus was non-wage amenities.[16] Finally, the size of bargaining units affects union strength: a union's threat to withhold labor depends on the collective value of its membership. Mishel (1986) confirms empirically that unions have more bargaining power when they have higher coverage of a workplace. Farber (2001) documents smaller bargaining units have a higher likelihood of success in representation elections, which he notes has implications for which units organizers target.

Survey Questions First, on pay transparency, we describe: "In the absence of more information, workers generally think that everyone earns what they do for similar work. You have the option to share the pay data you collected with workers. Would you share this pay information with workers?" Respondents choose among three options: publish during the campaign, publish after the campaign, or never publish.

[15] For example, both the New York Times Tech Guild and the American Federation of Teachers emphasize pay transparency as a union benefit. Quoting organizers the New York Times article says: "It's easy to feel overwhelmed and powerless when you're not sure whether you're being paid fairly. Sharing salary data with each other, and having conversations around that data, can build solidarity as you form a union."

[16] Organizing guidelines published by the Communications Workers of America exemplify this, as they coach organizers that the first bargaining proposals should focus on the central issues that motivated the campaign. Bronfenbrenner and Juravich (1995) note that campaign success depends both on the issues organizers emphasize and their plans for initial contract negotiations.

Second, we elicit issue priorities. After showing market wages, we inform organizers that hours are unpredictable at both factories and that the employer refuses to sign an "Open to All" business pledge (a commitment to maintaining a welcoming and safe environment for people). We ask: "To maximize support for the union, which of the following issues would be better to focus on during the campaign? Raising Pay, Predictable Hours, or "Open to All" pledge." Finally, on bargaining unit size, we ask "Would you advise separate bargaining units for these three groups of workers?" Separate bargaining units mean that, even within a single factory, each worker group would be represented separately, and a strike would pause work for a minority of the firm's workforce.

Results Figure III shows how labor market inequality shapes organizers' approach to campaigns. Under the y-axis headers are average responses in the equal environment, while the regression coefficient shows the change when moving to the unequal environment. First, we find that, in the equal environment, almost all organizers (94.5%) would publish the market wage information during the campaign, with only 2.2% publishing the data after the campaign and 3.3% never publishing. In contrast, in the unequal environment, organizers are 23.6 percentage points less likely ($p < 0.001$) to publish the information during the campaign. Instead, respondents are 10.4 percentage points more likely to publish only after the campaign and 13.2 percentage points more likely to never publish (both $p < 0.001$).[17]

This strategic withholding occurs even though high and medium outside option workers could learn that their market wages exceed internal wages. We interpret this behavior as evidence that unions may strategically reinforce search frictions or dampen the salience of outside options in unequal environments, even when doing so conflicts with the interests of some workers. Since workers can use information on outside options to negotiate higher pay (Jäger et al., 2024), the union's decision to withhold this data may improve chances of campaign success but at the potential expense of the individual bargaining power of the majority of workers. In other words, organizers respond to inequality by prioritizing collective institutional viability over the interests of some individual members, echoing the model of Kremer and Olken (2009), in which unions that do not implement workers' optimal organizing strategies are more successful.

In addition to vignettes, we also ask organizers how they gathered and shared pay information in their most recent campaigns. 86% of organizers report collecting relevant pay information, but only 35% of those who collected it say that they published the data. Aligned with vignette experiment results,

[17] Our theoretical results in Appendix B illustrate how higher inequality can disincentivize revealing pay information.

organizers working in industries with above-median levels of pay inequality are 14 percentage points (p = 0.065) less likely to report that pay was the most important campaign issue.[18]

Second, we find that, in the unequal environment, organizers are 10.4 percentage points less likely (p = 0.009) to focus on pay and 9.9 percentage points more likely (p = 0.014) to focus on predictable hours. These results suggest that when dispersed outside options make pay a more divisive topic, organizers may shift their campaign focus toward non-wage amenities. This helps maintain worker solidarity but hinders unions' ability to secure wage compression precisely when such efforts are most needed for counteracting rising inequality.

Finally, in the unequal environment, organizers are 14.8 percentage points (168%, $p < 0.001$) more likely to recommend establishing separate bargaining units (vs. 8.8% in the equal environment). This finding is consistent with Dodini, Lovenheim and Willén (2025) who argue that smaller, more homogeneous units can help mitigate the disincentives to unionize created by inequality. It also maps onto our model extension, showing that greater inequality in the outside options of workers makes smaller, more homogenous units more attractive.

Collectively, these results highlight the tradeoffs organizers face under rising inequality: they seekreduced transparency, more focus on unifying (non-wage) themes, and smaller bargaining units. In the longer-run, these moves could potentially undercut the union's overall strength and effectiveness in counteracting rising inequality.

III.F U.S. Evidence on Union Strategies

Although our sample of organizers spans a wide range of industries, unions, and geographic areas, it is not necessarily representative. We supplement our analysis with national-level evidence on the relationship between organizers' strategies and inequality, which echoes the patterns observed in our survey.

We draw on a database of 3,007 private-sector collective bargaining agreements from the Office of Labor-Management Standards (OLMS) Online Disclosure Room. To match the ACS data used to estimate wage ratios, we focus on 602 contracts starting between 2002–2022, of which 451 contain valid industry and state information.[19] We classify contracts by whether they have a fixed pay scale, defined as

[18] We classify 2-digit NAICS industries as more unequal if their 2023 national p90-p50 ratio (OEWS) is above the median. We use industry (rather than occupation) because organizers report their primary industry and typically work across occupations.

[19] These numbers were pulled on July 13, 2024. The OLMS database is dynamically updated, so these numbers would be somewhat different if pulled on a different day. We exclude all contracts with missing start years in the database. Recent works that apply

a scale that explicitly sets pay levels by position and experience. We then break contracts into 100-word segments and assign textual topics using the Anchored Correlation Explanation (CorEx) model (Gallagher et al., 2017), following Sockin (2022) (see Section E.1 for details). To track bargaining unit sizes, we draw on Collective Bargaining Notice (F-7) data from the Federal Mediation and Conciliation Service (FMCS), covering 79,822 establishment-level bargaining units between 2015–2021. For each unit, we calculate a "coverage rate" equal to the unit size divided by the establishment size.

Panel A of Figure IV shows that unions in more unequal environments (measured using log p90-p50 wage ratios within industry × region × 3-year cells) are less likely to include fixed pay scales in their contracts. Panel B shows such unions allocate a smaller share of contract content to wage demands, and Panel C shows they tend to cover a lower share of workers at the same establishment.[20] Together, the results in these three panels echo the responses of the organizers in our survey, who shy away from wage demands, target smaller bargaining units and predict less agreement over a pay scale in the more unequal environment.

We also explore the relationship between inequality and union campaign focus over time using text from the AFL-CIO News, the official newspaper of the AFL-CIO federation from 1955–1996, which covered union activities, contract negotiations, strikes, and organizing campaigns (University of Maryland Libraries (2024), see Appendix Section E.2). We classify topics for news segments using the same CorEx model as in our contract analysis. Panel A of Appendix Figure E.3 plots the "pay-related" topic share in the AFL-CIO news alongside U.S. income inequality measures (the top 10% income share and the Gini coefficient from Farber et al. (2021)). We find a clear negative relationship: the "pay-related" topic share steadily declined from over half in the early 1970s to just over a third in the 1990s, while income inequality rose sharply. Panel B shows that this decline was accompanied by little change in benefits-related coverage (e.g., insurance, pensions) and a rapid rise in working conditions content (e.g., safety, hours). These patterns are consistent with our survey-based findings that union activities focus more on non-wage amenities in more unequal work environments.

text analysis techniques on union contracts include Corradini, Lagos and Sharma (2025), Arold et al. (2025), and Lagos (2026).

[20]We account for the possibility that wage ratios are affected by union presence in two replications of Figure IV. Appendix Figure E.1 uses CPS-based wage ratios after subtracting off industry-specific union premium estimates, while Appendix Figure E.2 uses inequality measured at the beginning of the analysis period to account for the alternate direction of causation. Both versions find similar patterns.

IV Study II: Wisconsin's Act 10

The organizer survey underscores the negative effects of inequality on union support from organizers' perspectives. In this section, we directly test whether workers' union support falls when pay inequality rises.

Our second study is in the public education sector. As of 2024, teachers make up 2% of the U.S. labor force and have the highest unionization rate of any occupation (BLS, 2025). In fact, 18% of all unionized workers in the U.S. are teachers (Lyon, Kraft and Steinberg, 2024). We examine how quasi-exogenous differences in pay dispersion among public school teachers in Wisconsin—triggered by a 2011 policy reform, Act 10—affected individual decisions to support the teachers' unions.

IV.A Institutional Background

IV.A.1 Before Act 10

Prior to 2011, public-sector teachers in Wisconsin enjoyed considerable collective bargaining power but almost no individual bargaining power. The union negotiated a fixed wage schedule that determined pay solely by experience and education, guaranteeing steady pay progression over time without room for individual adjustments (Biasi, 2021; Biasi and Sarsons, 2022). Pay scales also varied little across districts.

IV.A.2 After Act 10

The pay setting landscape changed abruptly in March 2011, when Governor Scott Walker signed Act 10 into law. Act 10 eliminated collective bargaining over the wage schedule, effectively leaving teachers to negotiate their salaries individually. In response, restoring collective bargaining became a key focus of unions.

Act 10 also included additional reforms. Teachers' unions had to recertify annually by gathering an absolute majority of member votes in local elections. The reform further changed union dues collection from opt-out to opt-in, on a yearly basis (Godfrey & Kahn, S.C., 2018). It also required workers to contribute more of their pay toward their pension and healthcare, and required school districts to switch to cheaper healthcare plans. These provisions were implemented uniformly across all districts and workers.

Act 10 came into effect in each district when pre-existing collective bargaining agreements (CBAs) expired. Due to differences in negotiating calendars, CBAs expired in 2011 for 216 districts (out of 247 in our dataset), in 2012 for 23 districts, and in 2013 for 8 districts (Appendix Figure F.2; Biasi, 2021; Biasi

and Sarsons, 2022; Biasi and Sandholtz, 2024), indicating staggered rollout of the policy across districts.

IV.B Research Design

To study the effect of inequality on union support, our research design exploits the heterogeneous impact of Act 10 on pay inequality across commuting zones (CZs). As shown in Section IV.D, only CZs with sufficient labor market competition for public school teachers experienced a shock to inequality. To interpret this empirical pattern, we begin by discussing the link between labor market structure and post-reform inequality.

The repeal of the uniform pay scale was intended to decentralize bargaining, shifting leverage to individual teachers. However, we argue that this shift in bargaining power was most consequential in CZs with many public school employers who could now compete over individual teachers. In such settings, teachers' individual outside options shifted, with highly desired teachers better positioned to negotiate higher salaries following the reform. By contrast, in highly concentrated CZs where a single district may be the only public school employer, the de facto individual leverage of teachers remained limited despite the de jure shift to individual bargaining. As a result, wages adjusted very little. Importantly, Act 10 did not mechanically create pay dispersion. Instead, it reshaped the bargaining environment—particularly in more competitive labor markets—in ways that made outside options more actionable. In our theoretical framework, Act 10 is akin to a positive shock to A, only experienced in competitive CZs.

Crucially, because district education budgets are determined largely at the state level, the shift in individual bargaining power among teachers in highly competitive districts can lead to greater within-district wage dispersion without altering average wage levels.[21] The fact that average wage levels remain unchanged is key for our research design: to isolate the effect of inequality on union support, we need Act 10 to impact union support differentially across more vs. less competitive labor markets through its effects on inequality rather than, for instance, on average wage levels. We validate this fact empirically in Section IV.D.

This natural experiment, combined with data on union revenues per teacher and teachers' dues payments, allows us to study how rising inequality shapes an organic decision that union members regularly face: paying dues. Moreover, we observe individual teachers' wages both during and after the era of pay scales, enabling us to examine heterogeneity in teachers' responses based on their individual bargaining power. We test the hypothesis that teachers with high individual bargaining power are more

[21] In Wisconsin, funding is primarily determined by state-imposed formulas (Baron, 2022), resulting in similar average wages across districts and little correlation between average pay and local labor market competitiveness (Table F.2).

likely to reduce union support post-Act 10 and, in particular, in highly competitive labor markets where they can best take advantage of their individual bargaining power.

IV.C Data

We combine personnel records of public school teachers with political contribution data to infer union membership. We also bring in union revenues and district-level CBA expiration.

Personnel data We use the PI 1202 All Staff Files from 2007 to 2017, provided by the Wisconsin Department of Public Instruction (WDPI). These files cover all WDPI and school district employees, including all public-school teachers, and report name, gender, birth year, years of experience in Wisconsin public schools, district and school assignment, total salary, fringe benefits, and full-time equivalency (FTE) units. Each row represents a position, and 2% of all individuals hold more than one position in a year. We restrict our sample to teachers working in 416 standard districts and aggregate at the person-year level, retaining the highest-FTE position.[22] Our final dataset includes 90,952 full-time teachers observed between 2009 and 2017, with 45,139 teachers observed in 2011.

Union revenues We obtain union finances data from IRS Form 990 filings, which all tax-exempt organizations, including public-sector unions, must submit. These forms report revenues, expenses, assets, and liabilities. We access digitized Form 990s through the National Center for Charitable Statistics (NCCS) at the Urban Institute (2016), match union names from the Wisconsin Employment Relations Commission to filings, and successfully link 52 unions spanning 99 school districts. We calculate revenues per teacher, defined as total revenues (primarily dues reported on the filings) divided by the number of teachers in each union's represented districts from staff files. We argue that the decision to pay dues offers a direct, "vote-with-your-wallet," indicator of union support. Since the union's post-reform campaign centered on reinstating the pay scale, we interpret the decision to pay dues as a tangible expression of support for that objective.

Individual union membership To track which teachers paid union dues each year, we follow the procedure proposed by Foy (2024). Starting from 2016, the state National Education Association (NEA)

[22] We exclude records with a salary equal to $0 or missing FTE. We further exclude teachers employed in Cooperative Educational Service Agencies (CESAs), County Children with Disabilities Education Boards (CDEBs), and the State Department of Public Instruction (DPI). These agencies differ from conventional districts in governance and staffing.

chapter automatically allocated $19.99 from each member's annual dues to its political action committee (PAC), while each of the 13 regional state union chapters directed another $5 to their respective PACs. We infer union membership by fuzzy-matching teacher names in the staff files to PAC contribution records in the Wisconsin Campaign Finance Information System (WCFIS).[23] We treat any teacher appearing in the contribution data as a union member.[24] This approach yields a union membership rate of 47% in 2016, providing an individual-level measure of union support in the post-reform period.

Collective bargaining agreements We classify districts by the expiration date of their CBAs prior to Act 10, which determines when each district (and its union) became subject to the law's changes. We use the dataset first compiled by Biasi (2021), combining information from multiple sources, including union contracts, districts' employee handbooks, school board meeting minutes, and local news sources.[25] The dataset contains information on 247 of the state's 416 districts, covering approximately 70% of all teachers.

IV.D Econometric Specification

We compare districts that were ex-ante more likely to experience an increase in pay inequality—once individual bargaining followed CBA expiration—to those less likely to experience inequality growth, based on differences in local public education sector concentration.

We measure labor market concentration for public school teachers using the Herfindahl-Hirschman Index (HHI), calculated from public school teacher employment across districts within each CZ in 2010:

$$\text{HHI}_j = \sum_{k:c(k)=c(j)} 10000 * s_k^2$$

where j denotes a district, $c(j)$ denotes the CZ of district j, and s_k is the share of public school teachers in CZ $c(k)$ employed in district k. The HHI ranges from 0 to 10,000.

[23] The WCFIS website can be accessed here. Before performing the match, we clean the names to account for inconsistencies (e.g., variations in middle initials) and ensure that each name uniquely identifies an individual within a filing period.

[24] This decision is supported by two facts: most contributions are bunched at $19.99 and $5.00, i.e., the automatic deduction amounts (Appendix Figure F.1) and non-members rarely donate to union-affiliated PACs.

[25] Union contracts generally report the date of the expiration of the agreement. Post-Act 10 school board minutes typically mention whether a contract was set to expire in 2011. The presence of an early version of district employee handbooks is also useful to establish when the post-CBA pay regime was introduced (which typically coincides with the date of the earliest handbook at the latest). When available, the dataset prioritizes information from union contracts, school board minutes, and handbooks. In cases where these documents are unavailable, the records are complemented with information from online local news sources.

We measure concentration across public school districts—rather than across individual schools, sectors (public vs. private), or industries (education vs. non-education)—for several reasons. First, teachers are employed and contracted at the district level. Second, exits from the public school sector are minimal: in our data, only 4.5% of teachers (excluding retirees) leave the public school system in 2010, indicating that for most teachers, employment outside the public school system is not in their consideration set. This low exit likely reflects non-transferable benefits, amenity differences, and high wages relative to private schools (Taie and Lewis, 2023; Taie and Goldring, 2019).[26]

To visualize our event study, we divide CZs into above- and below-median HHI groups, where the mean HHI is 1928 in the above-median districts, vs. 679 in the below-median ones. Figure V and Appendix Table F.1 confirm that districts in low-HHI areas experience strong growth in within-position wage dispersion, while districts in high-HHI areas see no growth. Specifically, between 2010 and 2016, the within-position standard deviation in pay declined by an insignificant $250 (or -5.9%) in high-HHI districts, but increased by $2,647 (64.6%) in low-HHI districts (Appendix Table F.1, column 2). Thus, we refer to the low-HHI (below-median) districts shown in Figure V as the "inequality shock" districts, and the high-HHI (above-median) districts as the "no inequality shock" districts.[27]

Identifying Assumptions Our design rests on several assumptions. The first is that, in the absence of the reform, union support in districts that do and do not experience a rise in inequality would have followed the same trajectory over time. While this assumption is not directly testable, we provide several pieces of supporting evidence. First, Figure VI shows a lack of different pre-trends: per-member union dues evolved in parallel before the reform. Second, we show that high- and low-HHI districts are comparable along other important dimensions pre-reform. In particular, we find no significant differences in pre-reform (2007-10) changes in wages (Table F.2, Panel (a), Column 1) or fringe benefits, such as health care contributions (Column 2). The levels of these two variables were also comparable in 2010 (Columns 3 and 5) and in 2016 (Columns 4 and 6). Teacher characteristics, such as experience, gender, and share with a Master's degree, are similar (Panel (b)), and so are district characteristics like locale, population,

[26] We find that the exit rate is not impacted by the reform and is similar across districts with and without the inequality shock (Figure F.4, panel A).

[27] Appendix Figure F.5 Panel A shows that within-position salary dispersion at baseline was comparable across HHI quartiles and did not correlate with the inequality shock. Panel B shows the increase in inequality shock areas is driven by the 1st HHI quartile (+$3,076), followed by the 2nd (+$590), with no significant change in the 3rd or 4th quartiles.

and political leaning (Panel (c)).[28]

A second assumption is the Stable Unit Treatment Value Assumption (SUTVA), which requires no spillovers between treated and control units. This would be violated if teachers systematically moved between districts with and without rising inequality in response to the policy. Appendix Figure F.4 (panels B and C) rules out this possibility: fewer than 1% of teachers move out of their commuting zone or district in any year, and mobility rates are similar across high- and low-HHI districts both before and after the reform.

Finally, a key feature of our setting is the staggered implementation of Act 10 across districts, based on pre-reform contract expiration dates. The staggered timing alleviates concerns that other events in 2011 confound our findings. Further, by comparing high- and low-HHI districts, we address concerns that our estimates are confounded by aspects of Act 10 that are not mediated by the presence of competing employers in the CZ.

We compare how union support evolves in districts with more or less susceptibility to an inequality shock due to individual bargaining, based on their 2010 HHIs. Specifically, we estimate the following staggered differences-in-differences model via OLS, separately for high- and low-HHI districts:

$$\ln(r_{jt}) = \sum_{k=-3}^{3} \beta_k \mathbb{1}(t - E_j = k) + \theta_j + \tau_t + \varepsilon_{jt} \tag{7}$$

where r_{jt} denotes union membership dues per teacher in district j and year t, and E_j is the expiration year of district j's CBA. θ_j and τ_t contain district and year fixed effects, respectively. We normalize $\beta_0 = 0$, such that β_k represents the change in dues revenues per teacher k years after CBA expiration. Standard errors are clustered at the district level.

IV.E Results

As shown in Figure VI, estimates of β_k for $k < 0$ are statistically indistinguishable from zero in both districts with and without a shock to inequality. In contrast, following expiration ($k > 0$), estimates become negative, large, and statistically significant in districts where inequality rose: revenues per teacher drop by 66% (coefficient $= -1.086$, $p < 0.001$) two years after expiration and 73% (coefficient $= -1.312$, $p < 0.001$) three years after. In contrast, the decline is significantly smaller in districts without a shock: -18% ($p = 0.01$) after

[28] Our main results are robust when we control for differences in population and political leaning, the two variables that differ the most between low- and high-HHI districts, interacted with year effects (Appendix Figure F.8).

two years and -36% ($p < 0.001$) after three years. By year three, the gap in union revenues between districts that did and did not experience a rise in inequality had reached 58% ($p = 0.005$; Appendix Figure F.7). Estimates are robust to controlling for the shares of teachers in each position by district (Appendix Figure F.9). Appendix Figure F.6 shows that our estimates of β_k are largely unchanged with the estimator proposed by Sun and Abraham (2021), robust to the presence of heterogeneous treatment effects across CBA expiration cohorts that are correlated with the timing of the treatment.[29] We construct confidence intervals and p-values using district-clustered standard errors; p-values robust to CZ clustering are in Appendix Table F.3.

Estimates by quartile of each district's HHI confirm that the decline in revenues was the largest in districts in the top inequality shock quartile (Appendix Figure F.10). These results indicate that union support, captured by per-teacher membership dues collected, falls only in districts that experience a rise in inequality. Since the differential growth in pay dispersion (measured by the within-position standard deviation) between above- and below-median HHI districts is 68.3% (Appendix Table F.1, column 2, $p = 0.047$), and the difference in union revenue grew by 58% by year three post-reform, we estimate an elasticity of a 0.85% decline in union revenue for a 1% increase in pay dispersion in our setting.

We note that the gap between high- and low-HHI districts gradually widens over time. This pattern may reflect the fact that wages do not adjust overnight following the reform, but rather through a series of renegotiations as teachers learn about their market values and administrators adapt their pay practices to retain and attract talent. Consistent with this, we show that pay dispersion grows over time in districts with an inequality shock (Figure V). In turn, teachers gradually come to better appreciate the inequality among peers and decide each year whether to pay dues to a union campaigning to reinstate the pay scale.

Heterogeneity by Individual-Level Productivity Next, we study how individual-level union support after Act 10 varies with a teacher's productivity, proxied by their wage gains under individual bargaining. We measure this using the difference between a teacher's wage in 2016 and the average wage for their position.

We estimate the effect of a rise in inequality on individual union membership in 2016-2017, the first two years membership data are available. We obtain these effects separately for teachers with 2010–16 wage gains above and below the median among all the teachers in the same district, whose pay would have grown

[29] This test requires a "never treated" group of districts in each subsample. The inequality shock sample contains districts with CBAs expiring in 2011 and 2012; we consider the 2012 cohort as never treated and estimate effects up to one year post-expiration. The no-shock sample contains districts with CBAs expiring in 2011, 2012, and 2013; we consider the 2013 cohort as never treated and estimate effects up to two years post-expiration.

in a similar way absent the reform due to movements along the pay scale. To account for gender and union tenure potentially confounding the relationship between wage gains and union attachment across high- and low-HHI districts, we control for these characteristics and report their differential effects on the same figure. The top panel of Figure VII shows that union support is 6.8 percentage points lower in inequality-shock districts for teachers with above-median wage gains, compared to 3.5 percentage points lower for those with below-median gains (difference $p < 0.001$).[30] For comparison, the middle and bottom panels examine heterogeneity by union tenure and gender, respectively, finding no statistically significant differences. Being in a low-HHI district decreases union support by 5.6 and 4.6 percentage points for above- and below-median tenure teachers ($p = 0.274$), and by 5.7 and 5.0 percentage points for men and women ($p = 0.493$).

We find this heterogeneity by wage at the macro level as well (Appendix E.3). Using CPS data, Figure E.5 Panels A–D show that between 1984–2019, the U.S. union membership decline is driven disproportionately by exit of middle-to-high wage workers, in both the private and public sectors. Figure E.6 Panel A shows that, while high-wage workers have higher unionization rates in most industries, this high-wage membership premium is smaller in industries with higher inequality. Panel B further shows that higher inequality growth is associated with greater decline in an industry's high-wage membership advantage.

V Study III: Experimental Evidence from Hollywood

In this section, we offer a test of whether workers reduce their union support when pay inequality becomes more salient. To do so, we compile and experimentally reveal a pay report. Following our theoretical framework, we aim to study a shock to workers' perceptions of the distance between the pay they could negotiate as an individual and that of the median voter in the union. Therefore, the report highlights pay disparities between individual pay negotiations at the mean and median, relative to collectively negotiated minimums, among Hollywood writers during their 2023 strike.

While well-suited to our research question, Hollywood unions have some unique features. Members are more skilled than the average U.S. union worker, and they negotiate collectively across employers, resembling industry-level bargaining common in Europe. Further, workers negotiate pay minimums at the position level but may individually bargain above them, akin to the U.S. sports industry.

[30] Membership differences between inequality shock and no-shock districts are smaller for teachers below the 50th percentile of the wage gain distribution, and grow progressively for those above it (Appendix Figure F.11).

V.A Institutional Background

Similar to other industry-wide unions, the West and East Writers Guilds of America (collectively the WGA) are two guilds that represent over 11,500 film, television, and radio writers (Koblin and Barnes, 2023). The WGA primarily serves to negotiate contracts with the Alliance of Motion Picture and Television Producers, hereafter referred to as the Networks. As such, the Guild has significant influence in the wage-setting process through negotiation of the Minimum Basic Agreement (MBA). The MBA sets position-level pay floors, guaranteeing that Guild members earn at least the agreed-upon minimum for their work.

In May of 2023, the WGA's multi-year contract with the Networks ended, and terms for the subsequent three years were to be negotiated. The WGA went on strike from May 2 to September 27 (148 days) and ratified the new contract on October 9. A central goal of the strike was the renegotiation of position minimums. The WGA demanded a 6% raise to all minimums in the first year of the three-year contract, followed by 5% raises for the remaining two years. They also negotiated over residuals (the component of compensation tied to project sales or ratings), employment duration guarantees, and the role of artificial intelligence in production. We fielded our baseline survey from June 15 to June 30, 2023, when WGA members were in their 6^{th} and 7^{th} weeks of the strike, and our follow-up on August 11, 14 weeks into the strike.

This setting has two key advantages that allow us to experimentally measure the effect of inequality on union support. First, evidence suggests scope for pay information to shift writers' beliefs. Historical pay disclosures in the entertainment industry (whether released or leaked) have generated news coverage highlighting unexpected inequality (Copeland, 2014; Robb, 2021). Moreover, as described in Section V.B.2, writers anchor their beliefs about typical wages on their own paycheck so providing truthful pay information increases perceived inequality for most subjects—a phenomenon studied in several other contexts (Cullen and Perez-Truglia, 2022; Hauser and Norton, 2017; Jäger et al., 2024; Stantcheva, 2024).

Second, this setting presents an opportunity to measure high-stakes support. The terms of the contract negotiations were well-known and widely publicized, including to the general public, which enabled writers to develop informed opinions about their union and its role in their labor market.[31] In this context, expressing negative opinions about the union to a team of researchers at highly visible institutions could reasonably be expected to carry real costs for the union. The WGA made public statements

[31] In addition to receiving extensive coverage from industry publications like *Deadline* (Patten and Robb, 2023), updates on the strike, negotiations, and deal were reported on by national media, including but not limited to the *New York Times* (Barnes and Koblin, 2023) and *NPR* (del Barco, 2023). A U.S. consumer survey in July 2023 found that 60% of respondents reported being aware of issues in the WGA and concurrent SAG-AFTRA (actors) strikes (Rottenberg, 2023).

warning writers that any information they communicated to reporters could affect sensitive matters at the negotiating table and they condemned the Alliance of Motion Picture and Television Producers (AMPTP) for leaking negotiation details (Kilkenny and Goldberg, 2023). The union also used writers' voices to rally public support through social media and news channels (Rice, 2023; Fitzgerald, 2023; Nierman, 2023), recognizing that public sentiment influenced their bargaining power.

Of course, our strike setting also comes with its limitations. First and foremost, we were careful not to intervene in the outcome of the strike or publish any results prior to its conclusion. Below, we discuss how contextual considerations shaped our design choices.

V.B Baseline Survey

V.B.1 Baseline Survey: Recruitment

We recruited active Hollywood writers, targeting all WGA members through their publicly listed emails (WGA, 2023). Our contact list included 5,244 WGA writers ("contacts") whom we invited to participate in our study between June 15 and June 23, 2023, closing our survey on June 30. By close, we had received 400 complete responses, or 7.6% of WGA contacts.[32] Using a wide-array of details available on IMDb (84% match rate), we observe our respondents are comparable to the overall pool of contacts: both groups are 64% male and are similarly experienced in terms of total credits (~39). Respondents are slightly less experienced in terms of earliest credit year.[33] See Appendix Section G.1 for details.

V.B.2 Baseline Survey: Design

Our baseline survey tests whether writers underestimate our theoretically motivated inequality measure: the distance between their pay rate and the typical pay rate ("the median voter"). We also ask if a pay report would be valuable to them, as a marker of whether the information would be novel and salient. Additionally, we collect salary and work information, which we later use to create the pay report for the follow-up survey.

We collect compensation information using industry-specific language by asking what respondents earn as a percentage above the union minimum: "What percent above the MBA minimum do you typically

[32] 11.7% completed some fraction of the survey. This response rate is similar to studies in related contexts, e.g., Bursztyn et al. (2021); Cullen, Dobbie and Hoffman (2023).

[33] In the creative arts, credits are used to acknowledge those who participated in the production and often shown at the end of movies. This Wikipedia entry provides details on the WGA screenwriting credit system.

earn as a [Own Position Title] at [Own Type of Studio]?"[34] Respondents report pay using a drop-down menu, selecting earnings below, at, or above the minimum in 1% increments up to 100%.

We frame pay in relation to one's relevant minimum because it enables pay comparisons across contract types (e.g., weekly vs. episodic television) and across position titles. Additionally, minimums are well-known to writers; they are a focal point of the MBA and contract negotiations, and the WGA publishes a detailed "Schedule of Minimums" communicating them to members (WGA, 2023).

We next measure whether subjects anchor their beliefs about others' pay rates to their own. We ask: "What percent above the MBA minimum do you think a typical [Own Position Title] in the Guild earns from [Own Contract Unit] at a [Own Type of Studio] in the first half of 2023?", where [Own Contract Unit] can be one week in the writers' room, one episode, or one feature-length script depending on the respondent's reported largest source of income. We then ask about their confidence in their answer.

V.B.3 Baseline Survey: Results

The median reported pay rate of WGA members is 6.5% above the minimum, while the mean is 20.8% above. The median writer perceives a mere 3 percentage points gap between their own pay rate (as percent above the minimum) and that of the "typical" writer in the same position. See Figure G.1 for a visualization of how writers anchor on their own pay rate in their predictions of typical pay: we find a 1 percentage point increase in own pay translates into a 0.5 percentage point increase in typical pay predictions ($p < 0.001$). In reality, the gap between a writer's pay rate and that of the typical writer in their position is two to three times as large. The median absolute distance between a writer's pay rate and the median earnings in their position is 8 percentage points, compared with 5 from the mode and 12 from the mean. In essence, members anchor on their own pay rate and underestimate the pay gap between themselves and other workers. In addition, only 13% of respondents report being "very" or "extremely" confident in their answer about typical pay.

This widespread uncertainty naturally raises questions about writers' demand for additional pay information. Our baseline survey also documents that a large majority of writers (87%) would be interested in a pay report, with a median willingness to pay of ~ \$90 and a mean of ~\$900 (Appendix Section G.2.1). Writers further indicate they would primarily use this information to understand their relative standing

[34] At the survey's start, respondents identify their narrowly defined position title ([Own Position Title]) using the full set of titles from the union contract. They report whether they work in writing (TV or film), directing, producing, or acting. TV writers select among seven titles and film writers select among low- or high-budget films, depending on which is their largest income source. All respondents also report whether "streaming services" or "traditional studios" constitute a larger income share ([Own Type of Studio]).

in the pay distribution and to improve outcomes of their individual pay negotiations.

V.B.4 Baseline Survey: Frictions to Pay Information Access

Survey Questions Given high demand for greater pay transparency, we seek to understand what frictions writers face in accessing pay information that they value—in particular, understanding why they perceive it would not be fruitful to ask for it from the Guild. We find one answer from the evidence in our organizers' study, where organizers report rarely publishing salary information and, in our vignette experiment, are less likely to publish pay information in more unequal environments (Section III.E).

To study this, we tell half of the writers that we are considering petitioning the Guild for pay data to help us produce the report. We then ask if we can include their expressed interests for this information in our petition. For the other half, we instead name the Networks as the recipient of the petition to establish a baseline willingness to request pay information from a third, arguably adversarial, party.[35]

Results Figure G.4 shows that private willingness to pay (Panel A) does not imply public willingness to petition for the report (Panel B). While 87% of respondents privately indicate interest in the report, only 34% (38%) are willing to make their request public to the Guild (Networks).

This result points to one plausible source of friction: writers are reluctant to ask for pay information. Further, our evidence suggests that the Guild and Studios are not providing adequate pay information to workers — 80% of WGA members declare they would use a pay report to know where they stand in the distribution. This potential reluctance to share information is consistent with the fact that members may use the report to individually negotiate their contracts, potentially raising costs for Studios and detracting from collective negotiations.

V.C Follow-up Survey

Our baseline survey shows that WGA members anchor their beliefs about others' pay on their own pay, underestimating the gap between their pay and the typical rate. Writers also value pay information, and would use it in negotiations, but face frictions accessing it from unions or employers. This setting creates an

[35] Both the Networks and Guilds have access to detailed pay data. The Guilds typically require members to report all gross earnings through the process of collecting dues. Networks collect this information directly as contractors. However, neither the Networks nor the Guild publish pay reports beyond aggregate data.

opportunity for us to experimentally provide new information about pay inequality and test its effect on union support. However, we need to do so in a manner that does not meaningfully interfere with the on-going strike.

V.C.1 Follow-up Survey: Recruitment

On August 11, approximately 100 days into the strike and six weeks after sending the baseline survey, we sent a follow-up survey to 4,716 WGA members (all members for whom we had contact information, or about 40% of total membership).[36] Three considerations shaped our recruitment strategy: avoiding interference with the ongoing strike, maintaining internal validity by not contaminating our control group, and ensuring that all writers with publicly available emails had equal access to our pay report. The follow-up was therefore deliberately simple. It contained only a summary of baseline results and a single question and was deployed for just 48 hours over one weekend. We waited until after the strike ended before making any results public.

This survey approach yielded 310 complete responses during the 48-hour window, 6.5% of our contact list, representing 3% of all WGA members. As shown in Appendix Table G.1 columns (3)-(4), contacts and respondents share similar characteristics across dimensions accessible on IMDb, with respondents having a slightly lower proportion of men than contacts (57.5% vs. 63.6%).

V.C.2 Follow-up Survey: Design

Our follow-up survey aims to measure union support under real stakes using exogenous variation in the salience of pay dispersion. We randomize between asking about union support before (control) vs. after (treatment) respondents see a pay report (Panel A of Figure VIII). Panel B shows the report, which contains median, mean, and maximum pay as percents above the minimum, separately for men (+10% median and +25% mean) and women (+3% and +14%), with standard errors for the means. The disclosed information is computed using (self-declared) writing pay rates among WGA members in our baseline survey.

Our intention with this pay report is to underscore pay *gaps*. In the organizer survey and the Wisconsin policy setting, variation in A arises from changes in inequality itself, whereas in this setting the pay report serves as an information intervention intended to shift workers' perceptions of A. We expect the larger-than-expected gap between their own pay and typical pay to be the most salient takeaway for our

[36] Aiming to collect a high-stakes union support measure, we focus on our contacts with a clear WGA affiliation. We identify members through self-declared status in the baseline or public information (i.e., we collected their email from the WGA website so we know they are a member). The contact list is somewhat smaller than the baseline survey because we exclude suspected members to ensure verified membership; the follow-up survey did not re-collect membership status to remain concise (Table G.1).

subjects, based on our baseline analysis of pay perceptions and prior research on perceptions of pay gaps (Breza, Kaur and Shamdasani, 2018; Cullen and Perez-Truglia, 2022; Jäger et al., 2024).To emphasize disparities, our report presents the mean and median pay rates relative to the negotiated minimums ("scale"), an object that is well known to writers. However, we caution that other signals can be inferred from a pay report. For example, a pay report with surprising information can reflect on the extent of pay transparency among Guild members more broadly.

We survey writers at a critical juncture—more than 100 days into the WGA strike, just as negotiations between the Guild and Networks resumed. The single question we ask is about union support, phrased: "Do most writers think the WGA demands will meet the needs of all WGA members?" The possible answers were: Almost entirely, Mostly, Somewhat, Mostly not, Not at all, I don't know the WGA demands.[37]

This question was deliberately designed to allow respondents to reveal their own support for the union—or lack thereof—while maintaining plausible deniability. In other words, the question provides space for a strategic response, one that accounts for the high stakes of expressing dissent during an ongoing labor dispute. Indeed, at the time of our survey, any large poll that could be interpreted as a measure of solidarity had real potential to influence the negotiations. The question directly echoes the Guild's stated goal, prominently expressed in their slogan that "no segment of the membership would be left behind" (WGA Negotiating Committee, 2023).

Hence, a positive poll signals trust in the unions' claims and solidarity with union leaders; a negative poll, by contrast, implicitly questions the Guild's leadership.

We acknowledge that the question could also have been interpreted at face value by some—as a neutral assessment of whether the publicly stated demands are likely to benefit writers across the pay distribution. Under this interpretation, respondents might answer based on their beliefs about how the proposed contract affects not just themselves but also their peers across the wage distribution.

Our theoretical model helps distinguish between these two interpretations. If writers are answering strategically, we expect responses to vary systematically by productivity. In particular, our model predicts that heightened awareness of inequality weakens union support among higher-productivity writers. In contrast, if writers interpret the question purely at face value, we would not expect support to vary meaningfully by productivity. As we describe in the next section, the former prevails.

[37]Only 11 respondents answered "I don't know the WGA demands," confirming that writers were well-aware of what the WGA was asking for at the bargaining table, and implies that our survey collects informed responses.

V.C.3 Follow-up Survey: Results

Figure IX compares union support by treatment status (whether the respondent answers before vs. after seeing the pay report). Among respondents who answer before seeing the pay report, only 9% of respondents report a lack of solidarity among writers about WGA demands, i.e. answered that most writers do *not* ("Mostly not" or "Not at all") think WGA demands meet the needs of all members. This figure rose to 23% among those who respond after seeing the pay report—a 156% relative increase (difference $p < 0.001$). Figure X examines heterogeneity in the treatment effect by individual productivity, and for comparison, by tenure and gender. We proxy individual productivity using credit count[38] and control for differences in gender and tenure between high- and low-productivity respondents. The decline in union support is primarily driven by high-productivity respondents: the share stating that Guild demands do *not* represent all members rose by 20.5 percentage points in the treatment group relative to control, compared to only 5.5 percentage points among low-productivity respondents (DiD $p = 0.092$). This result is consistent with Acemoglu, Aghion and Violante's (2001) theory and echoes our findings from Wisconsin: high types may be especially sensitive to their prospects for individual negotiation. There are no significant differences in responses by tenure ($p = 0.852$) or gender ($p = 0.200$), and results are not sensitive to the inclusion of position fixed effects (Appendix Figure G.2). In sum, when we present information revealing larger-than-expected gaps in individually negotiated pay, respondents, especially high-productivity ones, become more willing to express negative views about union demands during the high-stakes strike. These findings are consistent with our theory, in which high-productivity workers anticipate being on the losing end of redistribution.

Our findings from both Hollywood and Wisconsin shed light on a related conjecture that lies outside our formal theoretical framework: that workers with lower bargaining power might be galvanized by high intra-occupational inequality. We find no supporting evidence. While the negative effect of inequality on union support is more muted among low-productivity or low-bargaining-power workers, it is not positive. Perhaps second-order beliefs (peer effects) dampen this channel: if workers believe their peers are less willing to strike in unequal environments, their own enthusiasm for organizing may diminish. Organizer strategy may also contribute—when inequality is high, organizers may shift attention away from wage demands, reducing the mobilization of workers with lower bargaining power.

[38] The WGA Screen Credits Manual explains: "A writer's credits play an enormous role in determining our position in the motion picture and television industry. Our professional status depends on the quality and number of screenplays, teleplays, or stories that bear our name." Given the nature of our data, we use quantity as a proxy.

VI Taking Stock

Our three designs show that rising wage inequality among workers undermines union support. We now compare findings across settings and discuss implications for the role of inequality in union membership declines.

VI.A Elasticity of Union Support with Respect to Inequality Across Studies

We find that, while our three designs differ in institutional contexts and sources of causal identification, they yield comparable magnitudes on the elasticity of union membership in response to rising inequality.

In the Wisconsin study, between 2010 and 2016, the within-position standard deviation of earnings among public school teachers grew 68.3% more in competitive districts (below-median HHI) (Appendix Table F.1). Meanwhile, by 2016, union membership fell 10.6% in these districts compared to the rest (-5.1 percentage points from a basis of 48% for no-shock districts). This implies a union-support-inequality elasticity of -0.16. We note that the elasticity reported here is a membership elasticity, not the revenue elasticity calculated in Section IV.E. We use membership to maintain comparability with the other two settings, where support is measured at the individual rather than aggregate revenue level. The membership elasticity is smaller in magnitude than the revenue elasticity (-0.85), consistent with our finding that high-wage-gain teachers—who contributed more to union revenue—were more likely to exit.

With stronger assumptions, we can estimate a similar elasticity in the Hollywood context. We find that the median writer estimates the gap between their own pay and typical pay within their position to be 3 percentage points of scale, while the actual gap in collected salary data is 8 percentage points of scale, suggesting writers underestimate the true gap by 5 percentage points. While writers may have only partially updated their beliefs when shown information, we can estimate the perception shift by applying a Bayesian learning coefficient of 0.66 from a similar salary survey experiment (Cullen and Perez-Truglia, 2022) to estimate that posterior beliefs about the pay gap rose by 3.3 percentage points (110% of the median prior, 3 percentage points). In response to treatment, expressed union support fell by 15.4% (-14 percentage points from a 91% basis in Figure IX). This implies a union-support-inequality elasticity of -0.14, close to our Wisconsin elasticity estimates.

In the organizer survey, we present two workplace vignettes (Figure I): one where co-workers earn equal wages, and another where wages are spaced apart by $18. Because we started with zero inequality, the percentage change in inequality is infinite, and the standard elasticity formula is not defined. If instead

we define inequality change as the growth in the standard deviation of log wage, from 0 to 0.32, combined with the 6.6% drop in predicted mean vote share in Table I (5 percentage points change from a 76% basis), we obtain a union-support-semi-elasticity of -0.21. We note that this semi-elasticity is not directly comparable to the standard elasticity computed for Wisconsin, as the two measures differ in whether inequality change is expressed in absolute or relative terms. Nevertheless, both estimates are consistent with a meaningfully negative relationship between inequality and union support.

VI.B Inequality and Union Density Over Time

Although they come from different contexts, our elasticity estimates are similar in magnitude. In this section, we use these elasticities to assess the role of rising inequality in the decline of union membership over time in the US. Since unions typically organize workers in the same occupation and industry, we construct a measure of inequality that isolates the relevant "micro-level" inequality by decomposing the variance of log earnings into within and between industry-by-occupation cells, using the CPS (Figure A.1 Panel C). Between 1980 and 2019, the within-cell standard deviation grew by 21%, and the variance by 47%. This magnitude is robust to using alternative cell definitions: inequality growth within one-way industry, occupation, or firm cells all fall in the 18-25% range.[39]

A back-of-the-envelope calculation using our elasticity estimates between -0.14 and -0.16 suggests that a 18–25% growth in inequality would depress union membership by 2.5–4.0%. To put this in perspective, union membership rates fell from 22.2% of wage and salaried workers in 1980 (Freeman, 1997) to 10.3% in 2019 (BLS, 2020), a 54% drop. While many factors contributed to this decline, our estimates suggest that rising inequality can account for 4.6–7.4% of the overall union membership decline. For comparison, Farber et al. (2021) find that the other direction of causality is similarly sized: declines in union membership levels can explain 5–10% of the inequality growth in the late 20th century.

[39]Figure A.1 Panels A and B show that within-industry and within-occupation standard deviations rose by 25% and 19%, and the variances rose by 56% and 42%, respectively. Hoffmann, Lee and Lemieux (2020) similarly find that between-industry and between-occupation differences play a secondary role in rising inequality. Using administrative earnings data, Song et al. (2019) find that within-firm variance rose from 0.43 in 1980 to over 0.5 around 2010, a smaller rise that largely reflects their inability to observe hours worked (Haltiwanger, Hyatt and Spletzer, 2023). Studies with hours data (e.g., Lachowska et al. (2023)) report lower inequality levels but similar changes over time. Adjusting for this implies within-firm standard deviation (variance) growth of about 18% (40%) in Song et al. (2019).

VI.C Coverage and Generalizability

An important question concerns the external validity of our three research settings: do we capture representative modes of organizing in the U.S. and internationally?

In the U.S., mobilization, elections, and collective bargaining occur primarily at the establishment level and may cover a single occupation or several related occupations (Bronfenbrenner, 2000; Dinlersoz, Greenwood and Hyatt, 2017). The organizer survey reflects this typical U.S. setting: at the workplace level, with three adjacent but different occupations. This set-up aligns with the fact that workplace-level bargaining units in the U.S. can cover a single occupation or multiple related ones, but few (less than 10%) are "wall-to-wall" covering all workers at an establishment (Bronfenbrenner, 2000). The Hollywood experiment occurs in a relatively small industry, and reflects an *occupational* (or *craft/guild*) unionism model that covers similar workers (writers) across employers and exerts bargaining strength through controlling aggregate occupational labor supply. This setting most closely resembles the sectoral bargaining structure dominant in Europe, where collective bargaining agreements are often at the industry-level, with negotiations occurring across multiple firms (Jäger, Naidu and Schoefer, 2025).

Finally, while studies often exclude public-sector unions, the public sector accounted for 15% of U.S. employment and 49% of unionized workers in 2024 (BLS, 2025). More generally, unionization rates are roughly four times higher in the public than in the private sector across OECD countries (OECD, 2025). Teachers' unions in particular carry weight, as K-12 teachers employed by state and local governments make up 3% of overall employment but 18% of all union workers (authors' calculation based on CPS). The Wisconsin study reveals public-sector union support responds to inequality.

The consistency of negative union-support-inequality elasticities across these institutionally diverse settings suggests that the relationship we document is not an artifact of any particular bargaining structure.

Additionally, trends across OECD countries align with our economic mechanism. Although collective bargaining in many OECD countries operates at the industry level—so the majority of workers are covered by collective agreements—workers still decide whether to join the union. In this context, even as coverage has remained high, union *membership* has declined: membership density in the OECD fell from about 30% in 1985 to 15% by 2023 (OECD, 2025). At the same time, within-industry inequality has also been increasing in the United Kingdom (Faggio, Salvanes and Van Reenen, 2010) and continental Europe (Zwysen, 2022). Moreover, we find a negative relationship between within-occupation wage inequality

and union membership across most developed countries, especially those with strong sectoral bargaining such as Sweden (Figure E.7).[40] This result indicates that the negative relationship is not unique to the U.S.

VII Conclusion

This paper provides evidence on how wage inequality among workers affects the labor movement. Using three complementary research designs—a vignette experiment with union organizers, a natural experiment among teachers, and an information intervention during the 2023 WGA strike—we document that rising wage inequality undermines union strength through several distinct mechanisms.

Consistent with the theoretical predictions of Acemoglu, Aghion and Violante (2001), the first mechanism operates through weakening solidarity among high individual bargaining power workers as inequality rises. We find evidence of this pattern across multiple settings. In Wisconsin, teachers who experienced above-average wage gains in districts affected by an inequality shock were significantly more likely to stop paying union dues. In Hollywood, high-productivity writers who received information about member pay disparities were 20.5 percentage points more likely to express doubts about solidarity around union demands during a high-stakes strike, while expressions of solidarity among low-productivity writers remained unchanged.

Beyond workers' response, we show that union organizers facing hypothetical choices about their campaign adapt to inequality in ways that may preserve institutional viability but potentially undermine redistribution. Facing greater dispersion in outside options, organizers report they would shift campaign focus away from wages toward less divisive non-wage amenities and advocate for smaller bargaining units that separate workers with different outside options. Under budget constraints, the majority of organizers decide to allocate fewer resources to high-inequality environments despite acknowledging greater potential impact there. These strategic responses represent rational adaptations to rising inequality but may reduce unions' ability to compress wages at scale.

Our results offer a fresh perspective on the joint evolution of inequality and unionization in the United States. While prior research documents a strong negative correlation between these trends (Freeman, 1980; DiNardo, Fortin and Lemieux, 1996; Card, 2001), the prevailing interpretation emphasizes unions' role

[40] We use data from the International Social Survey Programme Work Orientations Survey in years 1997, 2005, and 2015, which surveys workers about their occupation, union membership, and earnings. See Section E.4 for more details.

in reducing inequality. Our results suggest a complementary dynamic: rising inequality may also weaken unions. Indeed, in AFL-CIO News, we find that the labor movement shifts focus to non-wage amenities when inequality rises, and a corresponding negative relationship between industry inequality and the size of bargaining units as well as success negotiating pay scales. This suggests the possibility for "inequality traps"—self-reinforcing dynamics where growing wage dispersion undermines the institutions designed to contain it, thereby making collective action increasingly difficult as earnings gaps widen within occupations.

Important questions remain for future research. First, within-occupation inequality accounts for much of the growth in labor market inequality, but other forms of inequality have also grown, including inequality between workers and employers. Other forms of inequality likely affect labor organizing through different channels and are equally deserving of attention. Second, the mechanisms we identify—withdrawal of high-types, strategic adaptation by organizers, and the redirection of resources away from unequal environments—may operate beyond labor markets in other contexts, such as political organizing and civic society.

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Tables and Figures

Table I
Summary of Organizer Survey Results

	(1)	(2)	(3)	(4)
Panel A: Choice of Scarce Resource Allocation				
Unequal Environment (=1)	0.33***			
	(0.03)			
Panel B: Effect of Unequal Environment on Outcomes				
		High OO	*Medium OO*	*Low OO*
Perceived Union Support				
Median Vote Share	-0.09***			
EE Median: 0.80	(0.02)			
Mean Vote Share	-0.05***			
EE Mean: 0.76	(0.01)			
Hourly Wage Demands ($)		6.00***	-0.01	-4.33***
		(0.38)	(0.22)	(0.33)
Share Applying Elsewhere During Campaign		0.13***	0.02*	-0.07***
		(0.01)	(0.01)	(0.01)
Difficult to Agree on Payscale (=1)	0.47***			
EE Mean: 0.37	(0.04)			
Pay Transparency				
Publish During Campaign (=1)	-0.24***			
EE Mean: 0.95	(0.03)			
Publish After Campaign (=1)	0.10***			
EE Mean: 0.02	(0.03)			
Never Publish (=1)	0.13***			
EE Mean: 0.03	(0.03)			
Campaign Priority				
Raising Pay (=1)	-0.10***			
EE Mean: 0.41	(0.04)			
Predictable Hours (=1)	0.10**			
EE Mean: 0.52	(0.04)			
Open to All Pledge (=1)	0.01			
EE Mean: 0.07	(0.02)			
Bargaining Units				
Smaller (=1)	0.15***			
EE Mean: 0.09	(0.03)			
N	182	182	182	182

Notes. This table summarizes results from the organizer survey. In Panel A, we report the share of organizers who choose to allocate scarce resources to the unequal environment; the p-value corresponds to a two-sided test of the null hypothesis that the choice rate equals 0.50, or random allocation (Section III.C). In Panel B, we show the effect of moving from the equal environment to the unequal environment on outcomes, with standard errors clustered at the organizer level in parentheses. Each estimate corresponds to a single regression. Column (1) reports general outcomes, while columns (2)-(4) report outcomes specific to high, medium, and low outside option workers. Outcomes on *Perceived Union Support* (Section III.D; Figure II) include the predicted share of workers who vote in favor of ratifying a contract, expected hourly wage demands by position, the share of workers expected to apply elsewhere during the union campaign by position, and whether organizers expect it would be difficult to agree on a pay-scale. Remaining outcomes report choices about organizer strategies (Section III.E; Figure III). *EE Mean* refers to the mean value in the equal environment. * $p < .1$; ** $p < .05$; *** $p < .01$.

Figure I
Market Wages

Panel A: Equal Environment (Factory A)

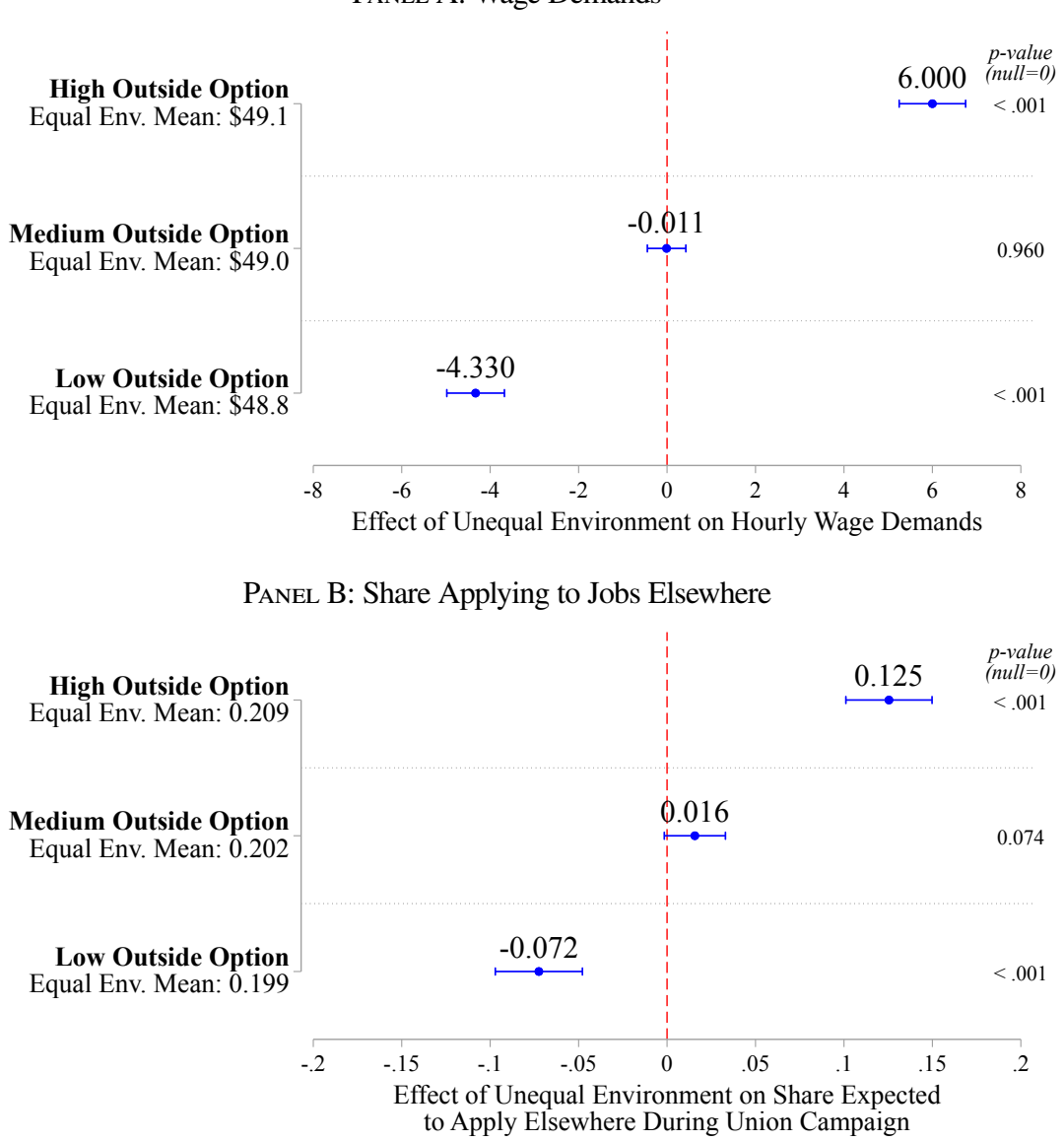
Assignments	Hourly Wage	Research on Market Wage
Quality control (1/3rd)	$40	$48
Metal Worker (1/3rd)	$40	$48
Pipefitter (1/3rd)	$40	$48

Panel B: Unequal Environment (Factory B)

Assignments	Hourly Wage	Research on Market Wage
Quality Control (1/3rd)	$40	$30
Metal Worker (1/3rd)	$40	$48
Pipefitter (1/3rd)	$40	$66

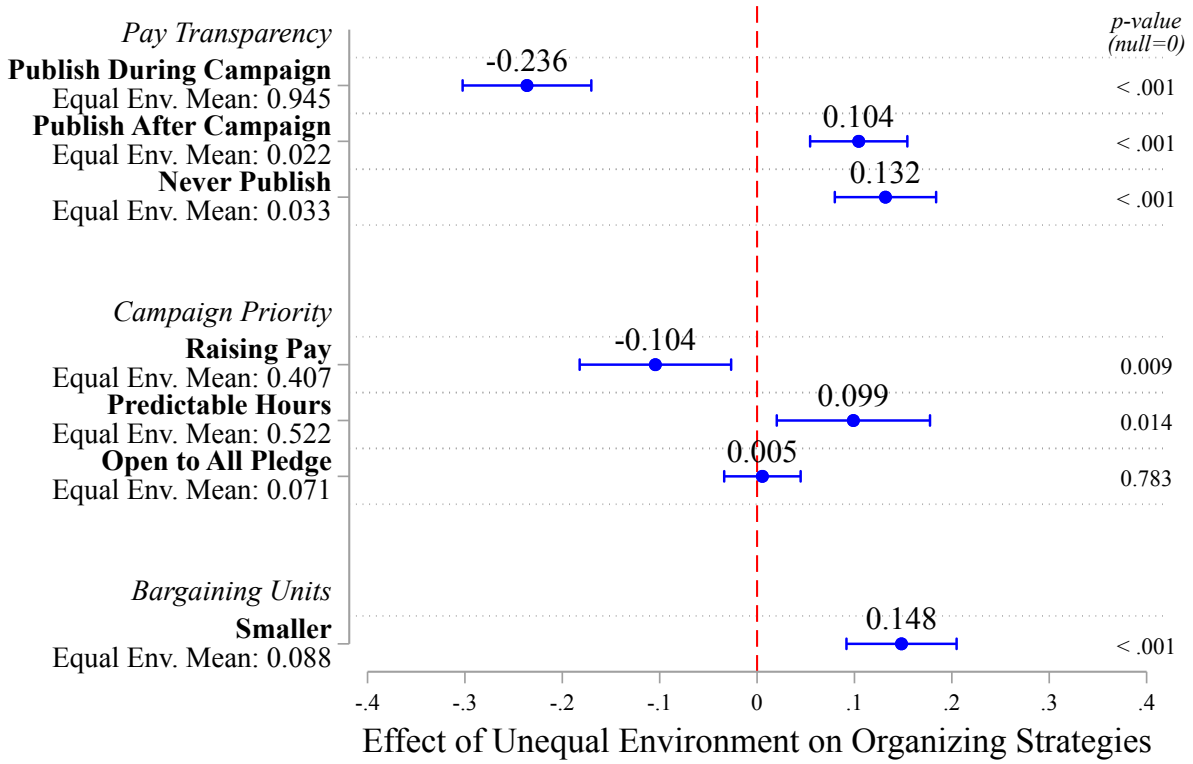
Notes. This figure shows the information on internal and market wages in each vignette from the organizer survey described in Section III. We randomize the order in which organizers see the two environments. Based on Panel B, we refer to Quality Control workers as having "Low Outside Options," Metal Workers as "Medium Outside Options," and Pipefitters as "High Outside Options." For the full text of the vignette, see Appendix Section H.1.

Figure II
Worker Actions by Outside Option



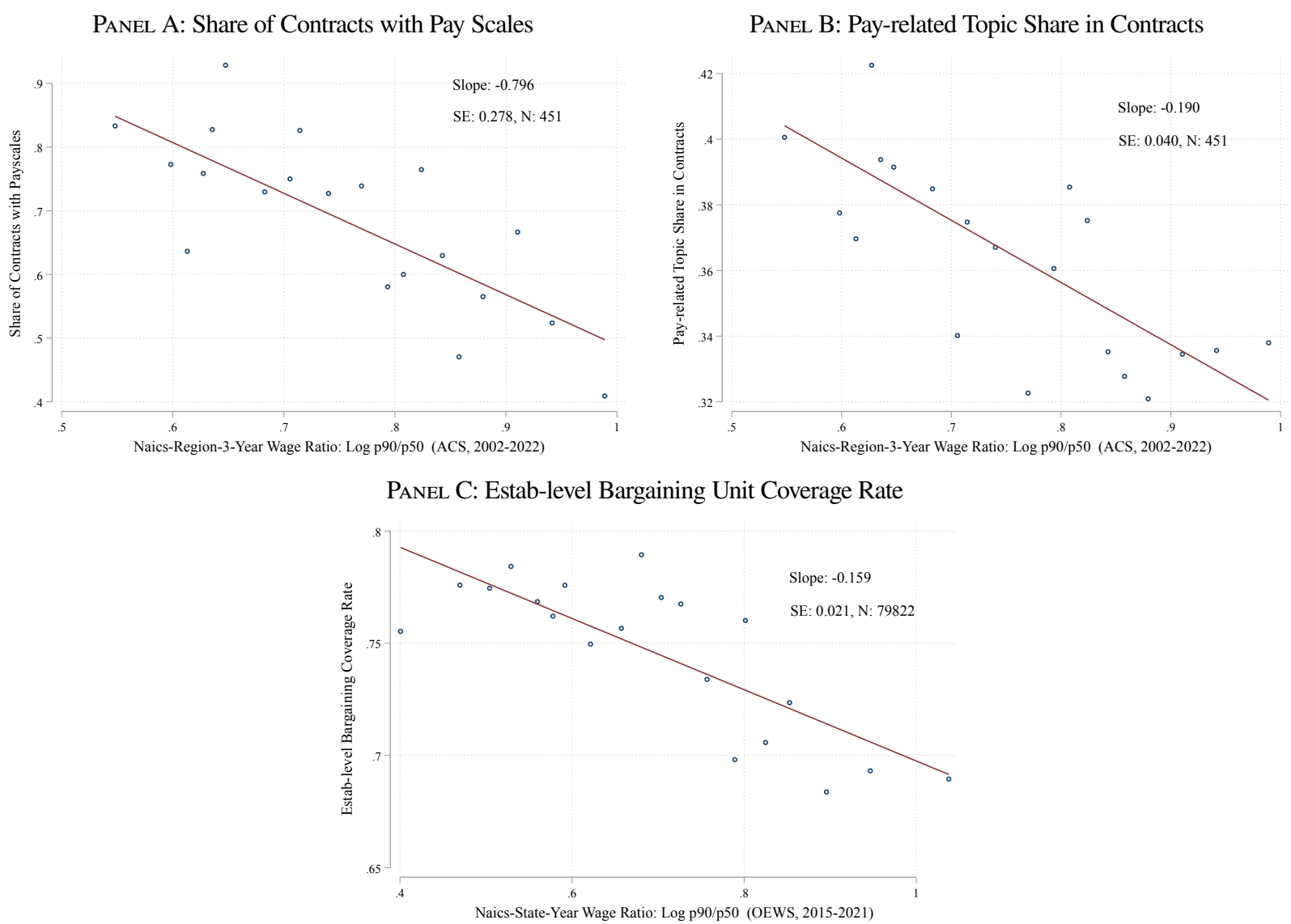
Notes. This figure shows how predicted worker actions vary across workers with different outside options when market wage inequality increases, from the organizer survey described in Section III. In Panel A, *Equal Env. Mean* reports the average predicted wage demands by group in the equal environment. In Panel B, *Equal Env. Mean* reports the average share of workers, by group, that organizers expect to apply for jobs elsewhere during the union campaign in the equal environment. Estimates show the effect of moving from the equal environment to the unequal environment on each outcome by group. The market wage for all three groups in the equal environment is $48; in the unequal environment, they are $66 for the high outside option group, $48 for the medium group, and $30 for the low group. Point estimates are shown with 95% confidence intervals, using standard errors clustered at the organizer level. We test the null hypothesis that each coefficient equals zero and report p-values to the right of the plots. Sample size is 182 organizers.

Figure III
Organizing Strategies



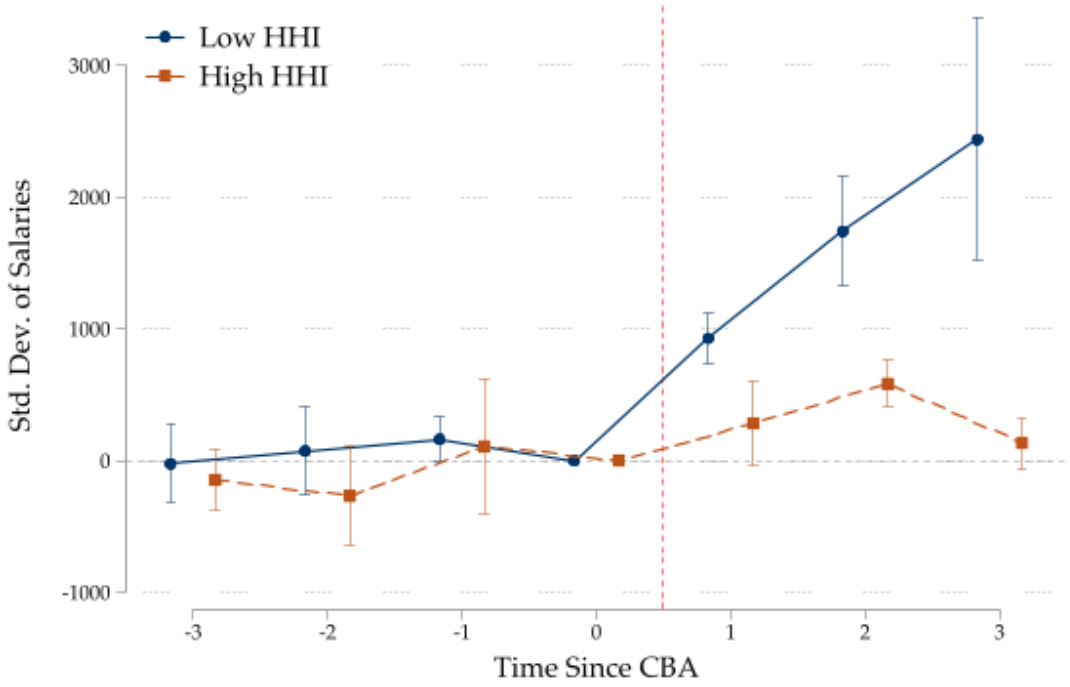
Notes. This figure shows how organizers adapt their campaign strategies when market wage inequality increases, from the organizer survey described in Section III. Under each outcome specified on the y-axis, *Equal Env. Mean* reports the average outcome in the equal environment, while plotted estimates show the effect of moving from the equal environment to the unequal environment. Specifically, coefficients under header *Pay Transparency* report whether organizers would publish market wage information from Figure I; coefficients under header *Campaign Priority* report which of the three issues organizers would prioritize during the campaign; the coefficient under header *Bargaining Units* reports whether organizers would pursue separate, smaller bargaining units for different worker types. Point estimates are shown with 95% confidence intervals, using standard errors clustered at the organizer level. We test the null hypothesis that each coefficient equals zero and report p-values to the right of the plot. Sample size is 182 organizers.

Figure IV
Cross-sectional Relationships between Industry-Region Inequality and Union Organizing Strategies



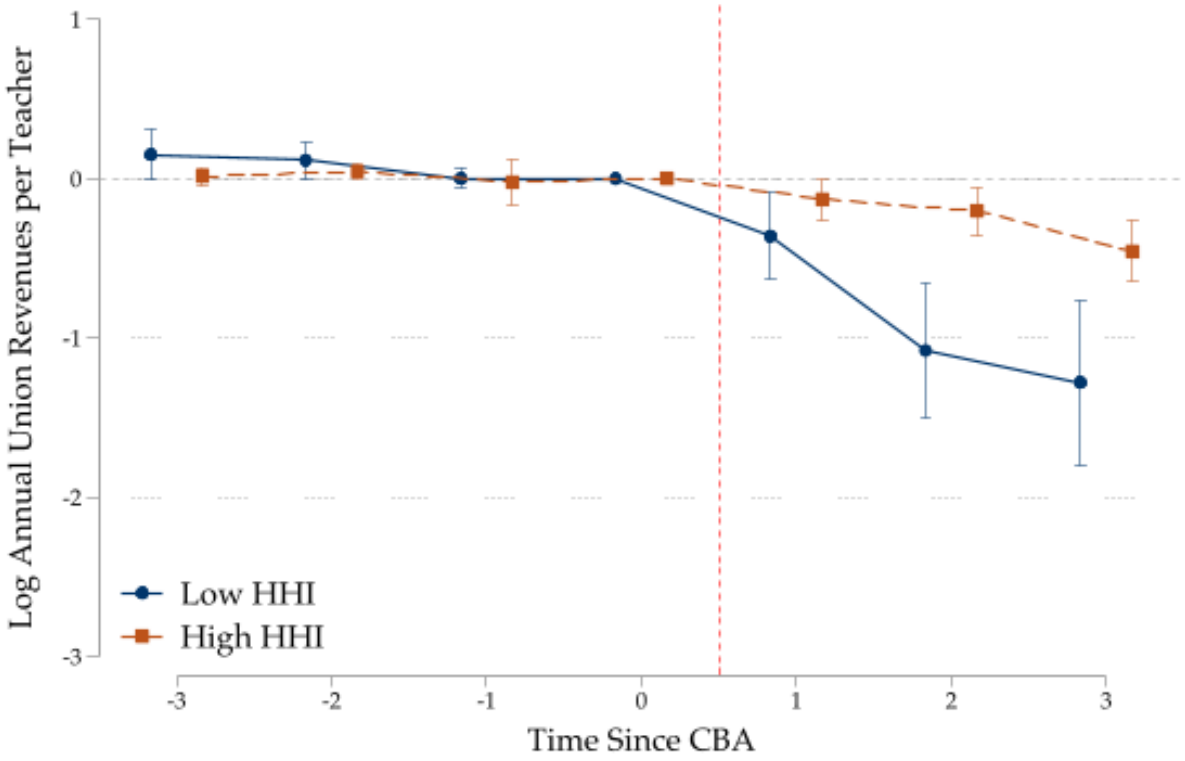
Notes. This figure explores cross-sectional relationships between wage inequality and union organizing strategies. Each panel plots a binscatter of a union outcome against industry-state-year log p90-p50 wage ratios. Panel A shows the pay scale status of 451 contracts between 2002–2022, using data from the Office of Labor-Management Standards (OLMS) Online Public Disclosure Room. Panel B shows the "pay-related" topic share (out of pay, benefits, and conditions) computed using the CorEx model in the same 451 contracts. Panel C shows the size of 79,822 bargaining units as a share of establishment-level employment, using Collective Bargaining Notice (F-7) data from the Federal Mediation and Conciliation Service (FMCS) between 2015–2021. Industry wage ratios (x-axis) are estimated using the best available data for each time range and aggregated at the BEA region × 3-year level in Panels A and B, and state × year level in Panel C (see Appendix E.1 for details). Standard errors are twoway clustered at the union and employer levels.

Figure V
Wage Inequality and Labor Market Concentration, Over Time



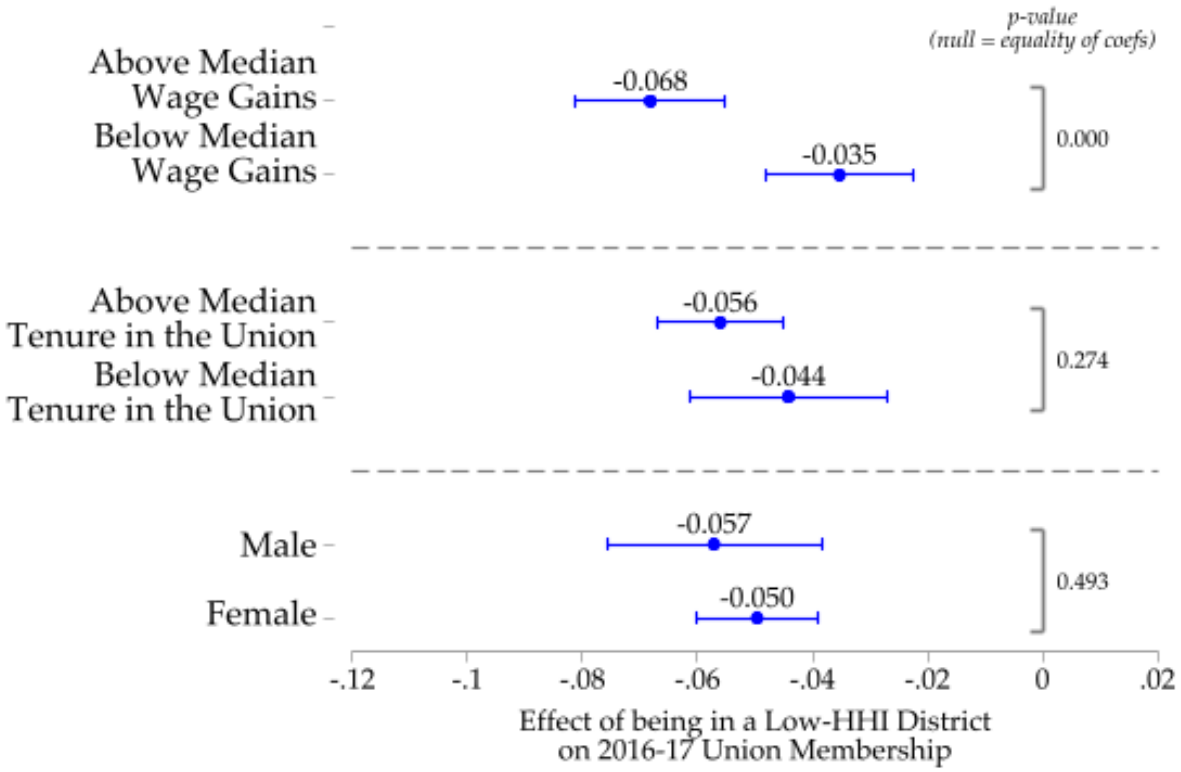
Notes. This figure shows how the within-position standard deviation of salaries evolved in districts with above and below median HHI by time since CBA expiration, from the Wisconsin study described in Section IV. Estimates represent coefficients β_k from equation (7), obtained regressing the average within-position standard deviation of salaries in each district and year on event-year dummies (relative to expiration of collective bargaining agreements) with district and year fixed effects. We obtain and display separate coefficients for districts with a commuting zone-level Herfindahl-Hirschman Index below the state median (blue series, "Low HHI") and those with an HHI above the median (orange series, "High HHI"). Observations are weighted by the number of workers. Estimates are displayed with 95% confidence intervals, using standard errors clustered at the district level.

Figure VI
Union Revenues



Notes. This figure shows how wage inequality affects union revenues at the school district level, from the Wisconsin study described in Section IV. Estimates represent coefficients β_k from equation (7), which regresses log annual union revenues per teacher on event-year dummies (relative to expiration of collective bargaining agreements) with district and year fixed effects. We obtain and display separate coefficients for districts with below median HHI (blue series, "Low HHI") and those with above median HHI (orange series, "High HHI"). We classify districts based on whether they have a commuting zone-level Herfindahl-Hirschman Index below or above the state median. Estimates are displayed with 95% confidence intervals, using standard errors clustered at the district level.

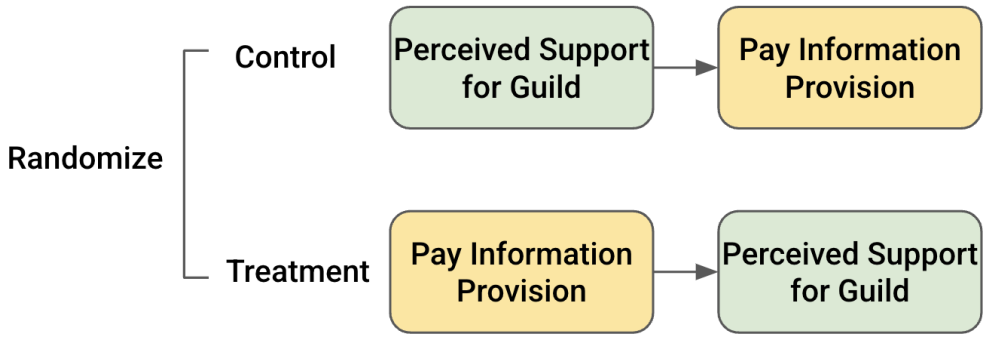
Figure VII
Wage Inequality and Union Membership: Bargaining Power vs. Other Demographics



Notes. This figure explores heterogeneity in the effect of wage inequality on union membership at the teacher level, from the Wisconsin study described in Section IV. Coefficients show the effect on union membership of working in low HHI districts, defined as having a commuting zone level HHI below the state median, relative to high HHI districts. Respondents are grouped by three characteristics: (1) *Above Median Wage Gains* vs. *Below Median Wage Gains*, based on having above/below district-level median 2010–2016 changes in salaries; (2) *Above Median Tenure in the Union* vs. *Below Median Tenure in the Union*, based on having above/below the state median of 13 years of experience; (3) *Male* vs. *Female*. Each regression is estimated using membership data for 2016/17 and controls for the other two pictured characteristics not being directly tested as well as year fixed effects. Point estimates are shown with 95% confidence intervals, using robust standard errors. We test the null hypothesis that coefficients are equal across the split and report the difference-in-difference p-values to the right of the plot.

Figure VIII
Follow-up Survey Pay Report and Design

Panel A: Research Design



Panel B: Pay Report

At present, our responses suggest the following compensation among WGA writers:

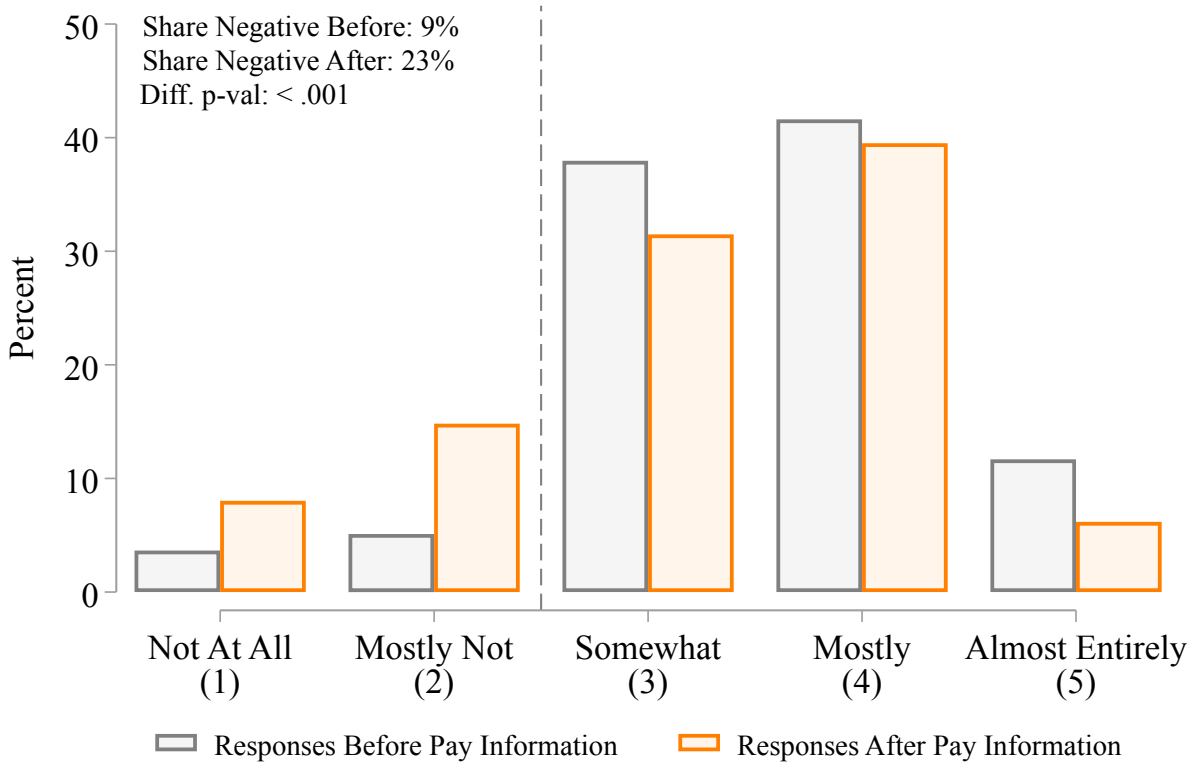
	Male	Female
Median	Scale + 10%	Scale + 3%
Mean	Scale + 25%	Scale + 14%
Maximum	Scale + 100+%	Scale + 100+%

Note: Standard errors on means are 2.2% for men and 2.0% for women.

We expect to add position-level statistics soon.

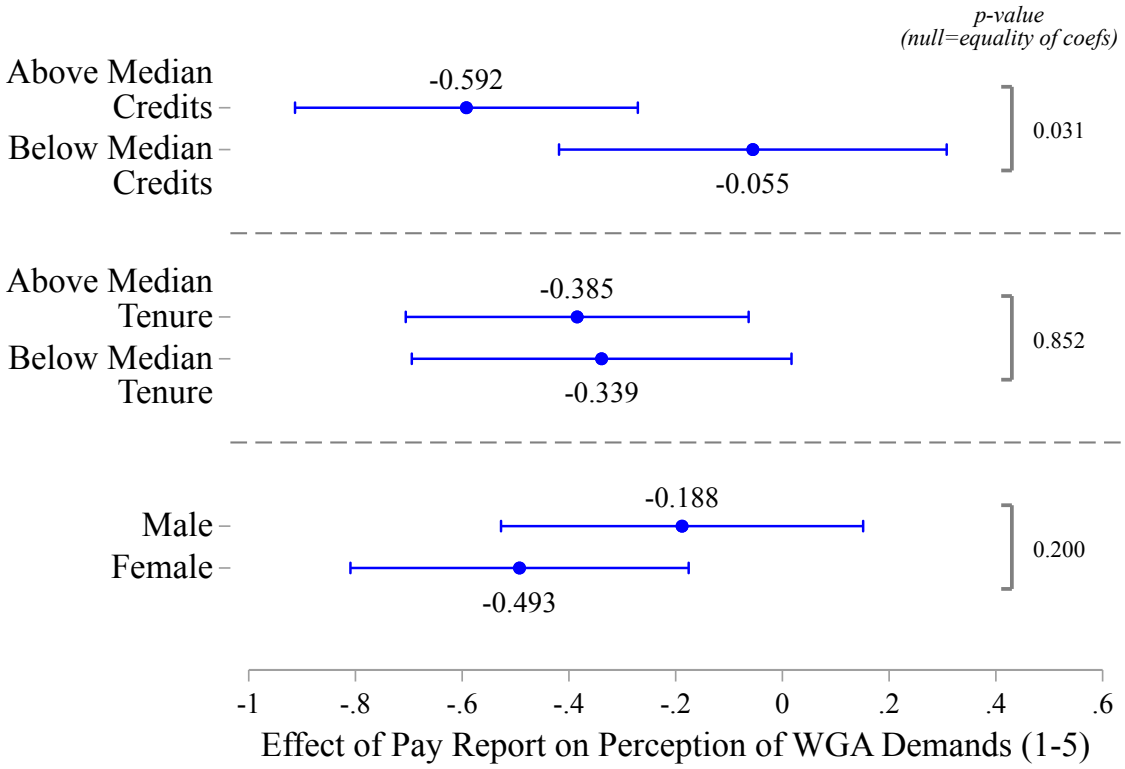
Notes. This figure illustrates the experimental design used to test how pay transparency affects union support among WGA writers, from the Hollywood experiment described in Section V. Panel A sketches our research design, where we randomize the order in which respondents see pay information and express perceived support for the Guild. *Perceived Support* is measured by asking: "Do most writers think the WGA demands will meet the needs of all WGA members?" Panel B displays the pay report that respondents see in the follow-up (the content of the *Pay Information Provision*). We compute pay statistics based on self-reported pay among WGA members in the baseline survey.

Figure IX
Writers' Perceptions of Whether WGA Demands Serve Everyone



Notes. This figure shows how pay transparency affects writers' perceptions of whether the WGA's demands serve all members, from the Hollywood experiment described in Section V. On a 5-point scale, respondents answer the question "Do most writers think the WGA demands will meet the needs of all WGA members?" either before (gray bars) or after (orange bars) they saw the pay report in Figure VIII. The shares of negative responses (defined as "Mostly not" or "Not at all") before vs. after seeing the pay report are displayed and their difference tested in the top left corner. Sample size is 299 WGA members. Of the 310 responses in our follow-up survey sample, 11 respondents report that they do not know the WGA demands and are excluded from the analysis.

Figure X
Heterogeneity in Perception of WGA Demands



Notes. This figure explores heterogeneity in the effect of the pay report on writers' perceptions of the WGA's demands, from the Hollywood experiment described in Section V. Coefficients report the effect of having seen the pay report on answers to the question "Do most writers think the WGA demands will meet the needs of all WGA members?", using the 1-5 scale shown in Figure IX (1 = Not at all, 5 = Almost entirely). The sample is 251 WGA members with available credit, experience, and gender data. Respondents are grouped by three characteristics: (1) *Above Median Credits* vs. *Below Median Credits* based on median IMDb credits among individuals from our WGA contact list with the same most recent credit title (e.g., "Story Editor"); (2) *Above Median Tenure* vs. *Below Median Tenure*, based on median years since first IMDb credit among individuals from our WGA contact list with the same most recent credit title; (3) *Male* vs. *Female*, self-reported or otherwise imputed based on first names as described in Section G.1. Each regression controls for the other two characteristics, out of the three, that are not being tested. Point estimates are shown with 95% confidence intervals, using robust standard errors. We test the null hypothesis that coefficients are equal across groups and report the difference-in-difference p-values to the right of the plot.