

Normalizing Opposition to Labor Unions

The Impact of the 1981 PATCO Strike on Union Organizing

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Abstract

In the 1981 strike by the Professional Air Traffic Controllers Organization (PATCO), U.S. President Ronald Reagan fired more than 11,000 striking controllers and hired replacement workers. The study examines whether this highly visible act of employer opposition in the public sector spilled over to affect union organizing in the private sector. Drawing on social information processing theory, I exploit geographic proximity to striking controllers as a source of variation in exposure to the anti-union information conveyed by Reagan's response. Using a difference-in-differences design and administrative data on union certification (RC) elections, I find that counties with PATCO locals experienced a 34 percent decline in RC elections and a 3 percentage point increase in the union win rate after 1981, consistent with selective organizing in an increasingly hostile environment. The decline was driven primarily by reduced organizing propensities within industries rather than shifts in industry composition. The effects were also stronger in labor markets with greater occupational investment, suggesting that PATCO's defeat signaled the economic feasibility of replacing highly trained workers. Together, the findings show how a prominent act of employer opposition can diffuse across organizational boundaries and contribute to broader union decline.

Keywords: Union organizing, employer opposition, strike replacement, diffusion

JEL Codes: J51, J52, J53

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1 Introduction

Labor unions in the U.S. have undergone a marked decline over the past several decades. Union density—the percentage of workers who are union members—has dropped from more than 30% in the 1950s to less than 10% in 2024. This long-run erosion of organized labor has far-reaching implications, as research has shown that union decline is associated with rising economic inequality (Card 2001; DiNardo et al. 1996; Farber et al. 2021; VanHeuvelen 2018; Western and Rosenfeld 2011), weaker democracy (Budd and Lamare 2021; Flavin 2018; Leighley and Nagler 2007; Sojourner 2013), poorer health (Hagedorn et al. 2016; Han et al. 2024; Li et al. 2022; Malinowski et al. 2015; Sojourner and Yang 2022), greater poverty (Brady et al. 2013; VanHeuvelen and Brady 2022), more discrimination (Frymer and Grumbach 2021; Kerrissey and Meyers 2022), and other social challenges. Many observers have thus called for revitalizing the labor movement as a step toward addressing these pressing issues.

But how can the labor movement be rebuilt? The answer depends, in part, on understanding why unions have declined. In one telling, employer opposition or resistance to unions is an important cause of union decline (Bronfenbrenner 2009; Budd 2025; Farber 1990; Freeman and Medoff 1984; Kleiner 2001; Kochan et al. 1994, 2019; Kreisberg and Wilmers 2022; Logan 2002, 2006; Mishel et al. 2020). In the U.S., many employers are hostile toward unions and deploy various tactics to block new organizing efforts or undermine existing unions, often due to concerns over labor costs, managerial control, and flexibility. Although employer opposition has been cited as a critical factor for union decline, existing research has mainly examined its consequences within the specific employment relationship in which the opposition occurs. For example, when an employer resists an organizing campaign, research typically considers how that resistance affects the workers targeted by the campaign and their subsequent decisions about union representation (e.g., Freeman and Kleiner 1990). This perspective largely treats the consequences of employer opposition as contained within the workplace where the opposition occurs.

Yet employer opposition may have consequences that extend well beyond the workers and employers directly involved. Highly visible acts of opposition can provide information to other employers about how unions can be resisted while also shaping other workers' expected benefits and costs of unionization. The influence of employer opposition may therefore diffuse across organizational boundaries, altering the behavior of otherwise unrelated employers and workers and contributing to union decline on a much broader scale. In the present study, I investigate this diffusion or spillover effect of employer opposition through the 1981 strike of federal air traffic controllers, led by their union the Professional Air Traffic Controllers Organization (PATCO). In response to the strike, U.S. President Ronald Reagan fired more than 11,000 striking controllers and replaced them with non-union workers—an action that not only crushed PATCO but also was viewed as a strong signal to the private sector that aggressive opposition to unions could be both acceptable and effective ([McCartin 2011](#)).

In particular, I examine whether Reagan's harsh response to the PATCO strike spilled over to union organizing in the private sector, where workers and employers were not directly involved in the PATCO dispute but could nevertheless respond to the anti-union message it conveyed. As institutional background, private-sector unionization in the U.S. is achieved primarily through the union certification (RC) elections administered by the National Labor Relations Board (NLRB), in which a union is certified to represent workers if it receives a majority of votes cast. While designed to provide a fair and democratic process for determining union representation, union organizing in practice is often subject to employer opposition, as management can threaten, intimidate, and fire workers to discourage them from supporting unionization. Private-sector union organizing therefore provides a particularly relevant context for studying whether a prominent act of employer opposition, such as Reagan's aggressive response to the PATCO strike, can have an spillover effect and shape the behavior of other employers and workers.

Empirically, I bring together two sources of data to examine this spillover effect. First, the NLRB maintains detailed administrative records of RC elections, providing a rare source

of high-quality data to study private-sector union organizing (for examples, see [Farber and Western 2002](#); [Lee and Mas 2012](#); [Schaller 2023a](#); [Sojourner and Yang 2022](#)).¹ Second, I manually collect historical records on the geographic distribution of PATCO local unions and membership as of April 1981—four months before the strike—from the Southern Labor Archives and supplemental sources ([Southern Labor Archives 2025](#); [Holmes and Walrath 2007](#); [FAA 2023](#)). To study the spillover effect of the PATCO strike, I use a difference-in-differences (DID) design to compare changes in private-sector union organizing between counties with and without PATCO local unions before and after 1981. Two features of this setting make the geographic distribution of PATCO locals particularly useful for identifying the spillover effect. First, the presence of PATCO locals provides geographic variation in exposure to the anti-union information conveyed by Reagan’s response to the strike. Social information processing theories suggest that geographic proximity can increase exposure to information and social cues from nearby people, organizations, and events ([Morgeson et al. 2015](#); [Rice and Aydin 1991](#); [Salancik and Pfeffer 1978](#)). Counties with PATCO locals should therefore have been more exposed to the anti-union information surrounding the strike and, if the spillover effect exists, more strongly affected by it. Suggestive evidence of differential information exposure comes from local news coverage, which rose 65 percent more from 1980 to 1981 in counties with PATCO locals than in other counties.

Second, and importantly for causal identification, the geographic distribution of PATCO locals was shaped by institutional factors largely unrelated to private-sector union organizing. PATCO locals were generally at Federal Aviation Administration (FAA) air traffic facilities, whose locations reflected the demand for air travel and the feasibility of aviation infrastructure rather than local unionization dynamics ([FAA 2024](#)). Moreover, because federal-sector unions enjoyed agency-wide representation, controllers at individual FAA facilities could not choose whether to be represented by PATCO or not ([Masters 2004](#)). In other words, the presence of PATCO locals did not reflect controllers’ decisions to select into PATCO

¹[Kamphorst et al. \(2026\)](#) provide access to a cleaned and harmonized version of the NLRB election data.

representation based on local preferences toward unionization.

My baseline DID estimates indicate that counties with PATCO locals experienced a 34 percent decline in the number of RC elections and a 3 percentage point increase in the union win rate after 1981—consistent with a pattern of selective organizing in a more hostile environment ([Farber 2015](#)). Event study estimates further show no evidence of pre-trends, and the results are robust to state-by-year fixed effects, county-level demographic and industry controls, alternative measures of union organizing outcomes, placebo treatment assignments, and county-month analyses. I also exploit variation in exposure to the PATCO strike using the number of PATCO members in each county and distance to the nearest county where controllers went on strike. Both analyses reveal a clear exposure gradient: counties with more PATCO members experienced larger declines in RC elections and greater increases in the union win rate, while these effects diminished with distance from strike locations. Together, these findings provide suggestive evidence of a broader spillover effect of the PATCO strike: Reagan’s opposition to one union had consequences that extended beyond the workers directly involved in the dispute, reshaping the dynamics of union organizing among otherwise unrelated workers and employers in the private sector.

To further understand how the spillover effect unfolded, I conduct several additional analyses. First, I decompose changes in RC elections into changes in workers’ propensities for union organizing, employment shifts across industries, and their interaction ([Schaller 2023b](#)). The decline associated with PATCO exposure is almost entirely explained by decreased propensities for organizing rather than changes in local industry composition, consistent with behavioral responses by workers, unions, and employers. Second, I examine whether the PATCO strike changed perceptions about the costs of strike replacement by demonstrating that even workers with substantial human capital investment—like the air traffic controllers—could be replaced. Using return to experience and vocational preparation time as measures of occupational investment ([Cramton and Tracy 1998](#); [Shaw 1987](#)), I find some evidence that the decline in organizing was larger in labor markets with more

investment-intensive occupations, consistent with PATCO lowering the perceived costs of replacing workers previously considered difficult to replace. Finally, a back-of-the-envelope calculation suggests that union membership would have been 9.4 to 12.7 percent higher by the end of the 1990s—corresponding to roughly a 1 percentage point increase in union density—absent the strong spillover effect due to direct exposure to the PATCO strike.

This study makes two main contributions. First, it contributes to research on the causes of union decline by highlighting the influence of employer opposition and, in particular, its potential to diffuse across organizational boundaries. Existing explanations for U.S. union decline have emphasized structural economic changes, including deindustrialization, deregulation, and globalization (Farber and Western 2016; Ahlquist and Downey 2023; Rose 1985; Schaller 2023a; Slaughter 2007); declining worker demand for union representation due to protective employment legislation and greater satisfaction with non-union jobs (Bennett and Taylor 2001; Farber 1990; Flanagan 2017; Neumann and Rissman 1984); and unions’ difficulties overcoming negative stereotypes and adapting to the needs of a changing workforce (Coombs and Cebula 2011; Goldsmith 2019; Lee and Tapia 2021). My findings reinforce the importance of employer opposition alongside these explanations, but also suggest that its consequences may be broader than previously recognized. Employer opposition need not affect only the workers against whom it is directly targeted. As the PATCO case demonstrates, a highly visible act of opposition to one union can affect otherwise unrelated employers and workers, shaping the dynamics of union organizing across organizational boundaries. This spillover effect provides a mechanism through which individual acts of employer opposition can be amplified, leading to broader changes in labor-management relations and ultimately contributing to union decline on a much larger scale.

Second, the study contributes to our understanding of the historical significance of the PATCO strike. Reagan’s response to PATCO has long been cited as a watershed moment in U.S. labor relations that accelerates subsequent union decline (McCartin 2011). Yet systematic evidence quantifying the impact of the PATCO strike has remained limited. By

examining private-sector organizing, I provide evidence that the PATCO strike results in a large and persistent negative effect on organized labor. Moreover, because my research design identifies the effect associated with differential exposure to the PATCO strike, the estimates likely capture only part of its broader influence: A nationally prominent event could also have affected workers and employers in areas without PATCO locals or many PATCO members. In this sense, the estimates may only represent a lower bound of the broader impact of the PATCO strike on private-sector union organizing.

The findings also carry implications for labor policy. The substantial decline in private-sector organizing following the PATCO strike highlights how one act of employer opposition can be amplified by an organizing system in which employers have considerable opportunities to influence workers' decisions about union representation. Reagan's response may have signaled to other employers that aggressive opposition to unions was both acceptable and effective, while the incumbent organizing system provided them with opportunities to act on that signal. To the extent that maintaining a balance of power between workers and employers remains an important objective of U.S. labor policy, reforms that limit employers' ability to interfere unionization may be needed. Such reforms could include facilitating union recognition through the use of authorization cards, restricting captive-audience meetings by management, and limiting the use of strike replacements during labor dispute—efforts that could reduce both employers' opportunities to directly resist unionization and the broad spillover effect such opposition may have ([Cramton and Tracy 1998](#); [McNicholas et al. 2021](#); [Farber and Western 2002](#); [LeRoy 1995](#)).

2 Historical Background and Related Literature

The Professional Air Traffic Controllers Organization (PATCO) was a public-sector labor union representing air traffic controllers employed by the Federal Aviation Administration (FAA). On August 3, 1981, more than 13,000 PATCO members walked off the job after negotiations with the FAA reached an impasse. Unlike most private-sector workers, federal

employees were prohibited from striking under federal law. In response, President Ronald Reagan declared the strike illegal and announced that controllers who failed to return to work within 48 hours would be discharged. When most striking controllers defied the order, Reagan fired more than 11,000 PATCO members. The FAA subsequently relied on newly trained controllers, military personnel, supervisors, retirees, and other non-union replacement workers to restore the nation’s air traffic system ([Northrup 1984](#)). The consequences for PATCO were devastating: The union lost the strike and was decertified on October 22, 1981, while its leaders and members faced substantial legal and financial penalties ([Fox 1985](#)). Public opinion also largely supported Reagan’s prompt response, reflecting the illegality of the strike and concerns about prioritizing wage over public safety ([Rosentiel 2011](#)).

For many observers, PATCO’s defeat marked a watershed in U.S. labor relations. Reagan’s unprecedented response is seen as sending a strong anti-union message that emboldened employer offensives against unions on a much large scale. As historian Joseph A. McCartin writes, “This event shocked rank-and-file unionists, frightened union leaders, and encouraged private sector employers to emulate Reagan in their own dealings with unions ... Declining labor militancy in turn exacerbated the continuous decline in union membership after 1981, leaving the union movement in a deepening crisis by the early 21st century” ([McCartin 2021](#), p. 1). In line with this view, a number of studies have documented important changes in U.S. labor relations in the early 1980s. Notably, union wage growth slowed following the PATCO strike ([Traynor and Fichtenbaum 1997](#)), and the long-standing positive relationship between strikes and wages vanished ([Rosenfeld 2006](#); [Massenkoff and Wilmers 2024](#)). Unionized workers also became less likely to strike when collective bargaining agreements expired ([Cramton and Tracy 1994](#)), and those who went on strike faced a higher risk of being replaced ([Cramton and Tracy 1998](#); [LeRoy 1995](#); [Minchin 2006](#)). Additionally, employer unfair labor practices surged by almost 30% from 1981 to 1982 ([Farber 1990](#)).

Yet whether and to what extent the PATCO strike actually contributed to the broader decline of U.S. unions remains uncertain. [Figure 1](#) plots long-run trends in union density and

membership from 1930 to 1995 and reveals no obvious break at the time of the PATCO strike. Instead, union density has been falling since the mid-1950s (see [Farber and Western \(2016\)](#) for a more detailed account). While union membership fell in the early 1980s, this change began two years before the PATCO strike. Most relevant to the present study, [Farber and Western \(2002\)](#) analyze the NLRB election data and document a nearly 50 percent decline in RC elections during the early 1980s, but their spline regression results similarly suggest that this decline began before the PATCO strike. However, this analysis is mostly descriptive and may be sensitive to functional forms and sample period choices.

Taken together, the existing literature leaves an important puzzle: PATCO is perhaps the most prominent historical case in which the effect of employer opposition is believed to have spilled over beyond the workers directly involved and contributed to broader union decline, yet systematic evidence identifying such a spillover effect remains limited. The present study addresses this gap by exploiting variation in differential exposure to the PATCO strike to examine whether Reagan’s response affected subsequent private-sector union organizing among otherwise unrelated employers and workers.

3 Spillover, Differential Exposure, and Union Organizing

Although the PATCO strike was a nationally prominent event, private-sector employers and workers were unlikely to have been equally affected by the anti-union message it conveyed. Social information processing theory emphasizes that individuals form attitudes, beliefs, and behavior partly by processing information from their social environment ([Morgeson et al. 2015](#); [Rice and Aydin 1991](#); [Salancik and Pfeffer 1978](#)). In particular, the social environment shapes how individuals understand events by directing their attention toward certain information, making that information more salient, and providing social cues through which its meaning is interpreted. These processes are especially important when the implications of an event open to multiple interpretations ([Salancik and Pfeffer 1978](#)). Applied to the PATCO strike, Reagan’s response could be understood simply as the resolution of an unusual dispute

involving federal air traffic controllers, or more broadly as a signal about the feasibility and acceptability of aggressive opposition to unions. Greater exposure to information and social cues surrounding the strike should have made PATCO more salient and increased the likelihood that employers and workers interpreted the event in terms of its broader implications for labor relations.

The geographic distribution of PATCO locals provides a useful measure of differential exposure to the anti-union message contained in Reagan’s response to the strike. Social information processing theory suggests that the social context shapes attitudes and behavior by making certain information more available and salient and by providing social cues through which individuals construct and interpret its meaning. This framework implies that the same event can have different effects across social contexts depending on the information to which individuals are exposed. Applied to the PATCO strike, employers and workers in counties with PATCO locals were likely to encounter more information about the strike through local media coverage, everyday discussions, direct observation of its consequences, and interactions with individuals affected by it. These differences in exposure should have made Reagan’s response more salient, particularly its implications for the feasibility and acceptability of aggressive opposition to unions. Thus, if the influence of employer opposition can spill over beyond the employment relationship in which it occurs, its effects on other employers and workers should be greater where exposure to that opposition is stronger. Although Reagan’s response was visible throughout the country, I expect a larger spillover effect of the strike on private-sector union organizing in counties with PATCO locals relative to those without. ²

Validating this argument is challenging because the perceived salience and interpretation of Reagan’s anti-union message are not directly observed. However, it is possible to show whether the presence of PATCO locals was associated with more information about

²In fields outside industrial relations, variants of this exposure-based approach have been used, explicitly or implicitly, to examine how nationally prominent events produce differential effects across local areas. For examples, see [Enos et al. \(2019\)](#); [Homola et al. \(2020\)](#); [Lepage \(2023\)](#).

the strike. [Figure 2](#) plots the cumulative number of PATCO-related news reports published in counties with and without PATCO locals, using data collected from Newspaper Archive (newspaperarchive.com).³ The figure indicates that counties with PATCO locals already had more PATCO-related news coverage before 1981. Both groups then experienced a sharp increase in coverage from 1980 to 1981, consistent with the national prominence of the strike. Crucially, however, the increase was substantially larger in counties with PATCO locals: PATCO-related news coverage rose by 65 percent more in these counties than in counties without PATCO locals. This pattern provides suggestive evidence that the geographic distribution of PATCO locals generated meaningful variation in exposure to information about the strike. News coverage captures only one source of such information; everyday discussions, social interactions, and direct observation of the strike’s consequences are more difficult to quantify but could have further reinforced these differences in exposure.

What implications should this differential exposure have for subsequent private-sector union organizing? The union organizing target selection model developed by [Farber \(2015\)](#) provides a useful framework for deriving concrete predictions. In this model, the expected value to a union of organizing target i through an RC election is

$$E(V_i) = \pi_i(V_i - C_{ai}) - C_{oi}$$

where V_i denotes the benefit to the union of winning the right for representation, π_i denotes the probability of a union victory in contesting an RC election, C_{oi} denotes the costs to the union of organizing effort, and C_{ai} denotes the costs to the union of negotiating and administering a collective bargaining agreement at target i .

A rational union will pursue an RC election at target i when $E(V_i) > 0$, which implies the following condition:

³See the *Data and Variables* section for a more detailed explanation about the relationship between striking air traffic controllers and PATCO local unions.

$$\pi_i > \frac{C_{oi}}{V_i - C_{ai}}.$$

That is, a union will organize at target i only when the probability of a victory exceeds a certain threshold given by the right-hand side of the formula. If Reagan’s response to the PATCO strike spilled over to embolden broader employer opposition toward unions, and if greater exposure to the PATCO strike (e.g., geographic proximity) reinforced this spillover effect, two sets of parameters would change in the model. First, greater exposure would shift the distribution of π_i to the left, suggesting that there would be fewer good targets for organizing. Second, greater exposure would increase both the costs of organizing effort C_{oi} and the costs of negotiating and administering a collective bargaining agreement C_{ai} . In addition, greater exposure may reduce the benefit of winning an RC election V_i if employers became more active in seeking decertification. These changes would raise the threshold for unions to pursue RC elections. The model therefore yields two observable predictions about the spillover effect of the PATCO strike: greater exposure to the strike should reduce the number of RC elections pursued by unions while increasing union success among the elections that are actually held.

4 Data and Variables

4.1 Data Sources

I construct a unique dataset that combines information on private-sector union organizing with measures of exposure to the PATCO strike. Data on union organizing come from NLRB records of union certification (RC) elections. RC elections are the primary legally recognized process through which private-sector workers obtain union representation: A union is certified as the workers’ representative if it receives a majority of the votes cast. Although unions can also obtain representation through voluntary employer recognition, this route

was much less common. I use the consolidated NLRB election data from [Morgeson et al. \(2015\)](#), who harmonized election records compiled by different authors and conducted extensive cleaning to improve their accuracy. I aggregate these records to the county-year level, covering 105,360 RC elections from 1974 to 1999. Approximately 5 percent of the election records are dropped during the aggregation process because they lack uniquely identifiable geographic information. The starting year, 1974, marks the point at which PATCO became a fully established union after securing its first collective bargaining agreement. The end year, 1999, provides a sufficiently long post-strike period to examine both the short- and long-run spillover effects of the PATCO strike on private-sector union organizing.

To measure exposure to the PATCO strike, I collect historical information on PATCO local unions from Georgia State University’s digital PATCO collection ([Southern Labor Archives 2025](#), item ID 181428). I identify 457 PATCO local unions listed in the union’s April 1981 Annual Convention Handbook—four months before the strike—after excluding locals in overseas territories and on military installations. I geolocate approximately two-thirds of these locals using registration and annual reports mandated by the federal government, including G-1, G-4, and LM-3 forms archived in the digital collection (e.g., Item ID 148246). For the remaining locals, I supplement this information with the 1980 Labor Organization Reporting System data compiled by [Holmes and Walrath \(2007\)](#) and, in a small number of cases, the FAA’s list of air traffic facilities ([FAA 2023](#)). Whenever possible, I cross-validate locations across multiple sources to ensure accuracy. I also obtain the number of members in each PATCO local from the 1981 Annual Convention Handbook, where membership counts were reported for official union elections and dues adjustments. These records allow me to construct multiple measures of exposure to the strike based on the presence, size, and proximity of PATCO locals.

4.2 Outcome Variables

For private-sector union organizing, two outcome variables are of interest. The first is union organizing intensity, measured as the natural logarithm of one plus the number of RC elections held in a county-year. This measure captures the extent to which unions pursue new organizing through RC elections. The log-like transformation allows me to interpret the results approximately in percentage terms while avoiding the undefined value of $\log(0)$ (however, see the robustness checks for a caveat of this transformation). The second is union organizing success, measured as the percentage of RC elections won by unions in a county-year and coded as missing when no elections were held. This measure captures union success among the elections that are actually held. In the robustness checks, I also consider alternative measures of union organizing outcomes to ensure that the analysis is not sensitive to particular measurement and scaling choices.

[Figure 3](#) plots the raw number of RC elections at the monthly level from 1977 to 1986. The figure shows a sharp decline in union organizing activity around the PATCO strike, with the number of RC elections falling from about 570 per month before the strike to fewer than 300 per month afterward. Meanwhile, union success increased over time, with the union win rate in RC elections rising from 47.8 percent in the 1970s to 48.7 percent in the 1990s. These aggregate patterns are consistent with the predictions of the target selection model discussed above: In a more adverse organizing environment, unions may pursue fewer RC elections while having greater success as they become more selective about the targets they organize ([Farber 2015](#)).

4.3 Treatment Variables

I construct several treatment variables to capture differential exposure to the PATCO strike and the anti-union message conveyed by Reagan’s response. The baseline treatment variable is a binary indicator equal to one if any PATCO local union was located in the county as of April 1981. As discussed above, the presence of a PATCO local should have increased

employers' and workers' exposure to information and social cues surrounding the strike, making Reagan's response and its implications for opposition to unions more salient. The baseline treatment variable therefore provides a simple measure of differential exposure to the PATCO strike across counties. Although it is not possible to determine whether particular PATCO locals participated in the strike, the baseline treatment variable is a reasonable proxy for the presence of striking controllers since PATCO was a highly organized and militant union. More than 90 percent of controllers were voluntary dues-paying members and 82 percent of them voted for the illegal strike. Even after Reagan's threat of dismissal, over three quarters of PATCO members remained on strike ([Northrup 1984](#)). It was also unlikely that non-striking controllers were concentrated in a small number of locals. Rather, historical accounts suggest that individual characteristics such as race and gender were important in shaping strike participation, as PATCO—a predominantly white, male-dominated union—had less success in organizing and mobilizing female and minority controllers ([McCartin 2011](#)). Thus, the distribution of PATCO locals should provide a reasonable approximation of exposure to striking controllers at the county level.

The baseline binary treatment variable has several limitations, however. In particular, it masks differences in the size of PATCO locals, which could similarly generate meaningful variation in exposure to the strike and the anti-union message it conveyed. The baseline treatment variable also imposes an arbitrary county boundary on the geographic reach of that exposure. To address these limitations, I construct two additional measures of treatment intensity. First, I exploit variation in the number of PATCO members in each county. Counties with more PATCO members had more controllers directly affected by the dispute, which should have increased the local salience of the strike and exposure to information about the strike. If the spillover effect exists, its impact on private-sector union organizing should therefore be larger in counties with more PATCO members.

Second, I use distance to the nearest county with a PATCO local as an additional measure of exposure. This measure allows exposure to extend beyond county boundaries and

to vary with geographic proximity to the strike. Employers and workers located closer to PATCO locals should have had greater exposure to information and social cues surrounding the strike through local media coverage, everyday discussions, social interactions, and other geographically concentrated channels. Accordingly, if the spillover effect exists, its impact on private-sector union organizing should diminish with distance from PATCO locals. Together, these measures allow me to examine not only whether counties with PATCO locals experienced different changes in union organizing after the strike, but also whether the magnitude of these changes varies systematically with the degree of exposure.

[Figure 4](#) visualizes the 345 counties in which 457 PATCO locals were located as of April 1981, along with 14,845 affiliated PATCO members.⁴ PATCO locals were distributed widely across the country rather than concentrated in areas where the labor movement was particularly strong. Two institutional features help explain this pattern. First, PATCO locals were generally located at FAA air traffic facilities, whose locations reflected the demand for air travel and the feasibility of aviation infrastructure rather than local private-sector union organizing dynamics ([FAA 2024](#)). Second, labor unions in the federal sector enjoyed agency-wide representation, as codified in the 1978 Civil Service Reform Act ([Masters 2004](#)). Air traffic controllers at individual FAA facilities therefore could not choose whether to be represented by PATCO based on local preferences toward unionization. Together, these institutional features reduce concerns that PATCO locals were systematically located in counties with stronger underlying preferences for union representation.

Consistent with this institutional account, [Table 1](#) reports summary statistics for private-sector union organizing, demographic characteristics, and employment by industry for counties with and without PATCO locals in 1980—one year before the strike. Counties with PATCO locals had substantially more union organizing activity than counties without PATCO locals, largely because counties with PATCO locals tended to have larger populations. Indeed, once population is taken into account, the difference in union organizing intensity

⁴Alaska and Hawaii are not shown in the figure for presentation purposes but are included in the analysis.

between the two groups becomes substantially smaller and statistically insignificant. The two groups also had similar union organizing success before the PATCO strike. Nevertheless, counties with PATCO locals differed from other counties along several demographic and industrial characteristics. For example, counties with PATCO locals tended to have a larger share of non-white and working-age residents, a smaller share of employment in manufacturing, and a larger share of employment in services. Some of the empirical specifications below therefore account for these observable differences.

5 Empirical Strategy and Results

5.1 Difference-in-Differences Design

The empirical strategy exploits variation in exposure to the PATCO strike to identify its spillover effect on private-sector union organizing. As discussed above, Reagan’s response to the strike was viewed as sending an anti-union message that could affect otherwise unrelated employers and workers. Although this message was visible nationwide, its influence should have been stronger in areas with greater exposure to the strike according to the social information processing theory. Based on this perspective, I begin with a standard difference-in-differences (DID) specification to compare changes in union organizing between counties with and without PATCO locals after 1981:

$$Y_{ct} = \beta_1 PATCO_c \times Post_t + \gamma_c + \delta_t + \epsilon_{ct}. \quad (1)$$

where c indexes county and t indexes year. Y_{ct} denotes either union organizing intensity or union organizing success in a county-year. $PATCO_c$ is the baseline treatment indicator, equal to one for counties with at least one PATCO local as of April 1981 and zero otherwise. $Post_t$ is an indicator equal to one for the post-strike period, 1981—1999. The specification also includes county fixed effects, γ_c , which absorb time-invariant differences across counties, and year fixed effects, δ_t , which absorb shocks common to all counties in a given year. The

coefficient of interest, β_1 , captures the differential change in private-sector union organizing after the PATCO strike between counties with PATCO locals and those without. Note that the treatment indicator captures differential geographic exposure rather than exposure to the strike per se, β_1 identifies the spillover effect associated with greater exposure to the PATCO strike rather than the overall spillover effect.

Identifying assumptions.—The validity of the DID design first depends on the parallel trends assumption: Absent the PATCO strike, private-sector union organizing in counties with and without PATCO locals would have followed similar trends. As discussed in the previous section, the geographic distribution of PATCO locals was shaped largely by institutional factors unrelated to private-sector union organizing. PATCO locals generally reflected the demand for air travel and the feasibility of aviation infrastructure, while agency-wide representation meant that controllers at individual facilities could not self-select into PATCO representation. These features reduce concerns that PATCO locals were systematically located in counties experiencing different underlying trends in private-sector union organizing before the strike. To further strengthen the case for parallel trends, I take two additional steps. First, I augment equation (1) with state-by-year fixed effects, δ_{st} , which absorb state-specific shocks that may have affected union organizing over time. I further control for time-varying county demographic characteristics and industry employment shares to account for observable changes in local economic and demographic conditions. Second, I estimate the following event-study specification:

$$Y_{ct} = \sum_{\substack{\tau=1974 \\ \tau \neq 1980}}^{1999} \alpha_{\tau} PATCO_c \mathbb{1}\{t = \tau\} + \gamma_c + \delta_t + \epsilon_{ct}. \quad (2)$$

This specification replaces the single post-strike interaction with a full set of interactions between $PATCO_c$ and indicators for calendar years, with 1980 serving as the reference year. The pre-1981 coefficients provide a direct assessment of whether union organizing in counties with and without PATCO locals was evolving differently before the strike. The

post-1981 coefficients trace the dynamic treatment effects associated with greater exposure to the PATCO strike over time.

A second identifying assumption is no anticipation: Private-sector employers, workers, and unions should not have adjusted their organizing behavior before the strike in anticipation of Reagan’s response. Although tensions between PATCO and the federal government were known before August 1981, the strike’s occurrence and the response that followed were not widely expected. Historical accounts indicate that PATCO operated as a relatively independent union and did not consult the AFL-CIO before launching the illegal strike ([McCartin 2011](#)). Reagan’s harsh response to the strike was also shocking, as PATCO was one of the few unions that endorsed Reagan in the 1980 presidential election, who in return promised to improve the working conditions of air traffic controllers.

A final consideration is the possibility of interference across counties. The standard DID framework implicitly treats a county’s outcome as depending on its own treatment status rather than on the treatment status of surrounding counties. This condition may not hold perfectly in the present setting because information and social cues surrounding the PATCO strike were unlikely to stop at county boundaries. Employers and workers in counties without PATCO locals, particularly those located near counties with PATCO locals, could also have been exposed to the strike through local media, social interactions, commuting patterns, and other geographically connected channels. Such cross-county exposure would reduce the contrast between counties classified as treated and untreated under the baseline binary measure. In other words, to the extent that counties without PATCO locals were also exposed to information from nearby counties with PATCO locals or other sources, the baseline DID estimates are likely to understate the effect associated with greater exposure to the strike, resulting in attenuation bias. The estimated effect due to differential exposure should therefore be interpreted as a conservative, lower-bound estimate of the overall spillover effect of the PATCO strike on private-sector union organizing.

5.2 Baseline Estimates

I present the baseline DID estimates derived from equation (1) in [Table 2](#). Columns 1–3 report the results for union organizing intensity, measured as the natural logarithm of one plus the number of RC elections held in a county-year. The three columns reflect different model specifications. Column 1 includes county and year fixed effects, accounting for time-invariant differences across counties and shocks common to all counties in a given year. Column 2 adds state-by-year fixed effects to account for time-varying shocks specific to each state. Column 3 further includes controls for county demographic characteristics and the share of employment by industry. Across all three specifications, the DID estimates are negative and statistically significant, indicating that counties with PATCO locals experienced a larger decline in union organizing activity after the strike. For example, the point estimate in column 1 is -0.419 , indicating that the number of RC elections declined by approximately 34 percent after the strike in counties with PATCO locals relative to their counterfactuals in the absence of direct exposure to the PATCO strike (i.e., the presence of PATCO locals at the county level). The estimates in columns 2 and 3 are similar in magnitude and statistical significance.

Columns 4–6 of [Table 2](#) report the results for union organizing success, measured as the percentage of RC elections won by unions in a county-year. Across all three specifications, the DID estimates are positive and statistically significant, suggesting that counties with PATCO locals experienced a relative increase in union success after the strike. The estimates are highly similar across specifications and indicate a relative increase in the union win rate of approximately 3 percentage points in counties with PATCO locals. Compared to the pre-1981 union win rate of 48% in counties with PATCO locals, this effect represents an increase of approximately 6 percent. Taken together, the two results closely correspond to the predictions of the target selection model discussed above. Direct exposure to the PATCO strike was associated with fewer RC elections but greater union success among the elections that were actually held. This combination is consistent with unions becoming more selective

about where to pursue organizing in a more adverse environment. More broadly, the findings provide evidence consistent with the central argument of this study: Reagan’s opposition to PATCO had a spillover effect that extended beyond the employment relationship directly involved in the strike, with larger impact on private-sector union organizing occurring in areas more exposed to the strike.

Event study results.—To further validate the baseline results and explore the dynamic effects over time, [Figure 4](#) and [Figure 5](#) present the event-study estimates derived from equation (2) under varying model specifications. For union organizing intensity, [Figure 4](#) shows no evidence of pre-trends across specifications. The point estimates for the years prior to 1981 are close to zero and statistically insignificant, indicating that counties with and without PATCO locals followed similar trends in RC elections before the strike. Beginning in 1981, however, the estimates become negative, with larger and statistically significant effects emerging in subsequent years. The relatively small estimate for 1981 is consistent with the timing of the PATCO strike in August, which left much of that year’s union organizing activity unaffected. The decline becomes substantially larger in the following years and shows no clear sign of reversal through the end of the 1990s. Thus, the decline in organizing activity emerged around the time of the PATCO strike and persisted long after the immediate dispute had ended.

For union organizing success, [Figure 5](#) similarly shows little evidence of differential trends prior to the PATCO strike, with estimates close to zero in the years leading up to 1981. Unlike organizing activity, however, union organizing success did not increase immediately after the strike. The estimates remain relatively small and statistically insignificant from 1981 through 1984 before becoming increasingly positive after the mid-1980s. One possible explanation for this delayed increase in union organizing success is that reducing organizing activity was relatively straightforward for unions, whereas identifying viable organizing targets in a substantially more adverse environment was more much difficult and only possible in the relatively long run.

This delayed increase is nevertheless consistent with the target-selection mechanism described above. A deterioration in the organizing environment can immediately reduce the set of targets for which organizing is worthwhile, while the resulting increase in observed win rates depends on how strongly unions select among the remaining potential targets. The gradual increase in union success therefore suggests that the decline in organizing activity was followed by increasingly selective organizing, with the elections that continued to be pursued concentrated among targets with relatively higher probabilities of union victory.

5.3 Robustness Checks

Alternative outcome measures.—In the appendix, I examine whether the results are sensitive to alternative measures and transformations of union organizing outcomes. [Chen and Roth \(2024\)](#) shows that log-like transformations of outcomes containing zeros, such as the number of RC elections, can produce estimates whose percentage interpretation depends on the implicit weight placed on changes along the extensive margin. To address this issue, [Figure A1](#) presents the dynamic effects on union organizing intensity under alternative weights assigned to the extensive margin. For example, a weight of 0.1 assigns the change from zero to one RC election the same value as a 10 percent increase in the number of elections. The estimated effects remain similar to those in the main analysis across different weights placed on the extensive margin.

In addition, [Figure A2](#) and [Figure A3](#) present the dynamic effects using the raw number of RC elections and the raw number of RC elections won by unions, respectively. [Figure A4](#) and [Figure A5](#) further present results using the number of RC elections and the number of union victories normalized by county population, respectively. Across these alternative measures, the results remain consistent with the baseline findings, indicating that the estimated decline in organizing activity and increase in union success are not driven by particular measurement or scaling choices.

Placebo tests.—Because counties with PATCO locals tended to be more populous, a

potential concern is that the baseline DID estimates capture differential changes in private-sector union organizing experienced by larger counties after 1981 rather than effects associated specifically with direct exposure to the PATCO strike. To assess this possibility, I perform a series of placebo tests. Specifically, I randomly assign 345 counties from the set of counties with 1980 populations above the median to a placebo treatment group and re-estimate the baseline DID specification in equation (1). I repeat this procedure 1,000 times. [Figure A6](#) and [Figure A7](#) plot the distributions of the placebo estimates for union organizing intensity and union organizing success, respectively. In both cases, the placebo estimates are centered around zero, while the baseline DID estimate lies far in the tail of the placebo distribution. These results indicate that randomly selecting similarly large counties does not reproduce the changes in union organizing observed in counties with PATCO locals, reducing concerns that the baseline findings simply reflect differential trends associated with county size.

County-month level analysis.—Finally, I examine the timing of the decline in union organizing activity more precisely using county-month level data. [Figure A8](#) presents event-study estimates for the year before and after the PATCO strike. The estimates indicate that counties with PATCO locals first experienced a statistically significant decline in RC elections in November 1981, approximately three months after the strike. Importantly, the NLRB data record the date on which an election was held rather than the date on which the organizing petition was filed. Because RC elections were typically held two to three months after a petition was filed, the decline in elections beginning in November 1981 corresponds closely to a decline in petitions initiated after the August 1981 PATCO strike. This timing strengthens the interpretation that the decline in private-sector union organizing emerged following, rather than preceding, the PATCO strike.

5.4 Treatment Intensity

The baseline analysis has relied on a binary treatment variable that compares changes in private-sector union organizing between counties with and without PATCO locals. This approach implicitly assumes that exposure to the PATCO strike due to the presence of PATCO locals is uniform, and that the treatment effects are confined by county boundaries. These assumptions may be too restrictive in practice. Some counties have much more PATCO members and are arguably more exposed to the strike than other counties. Meanwhile, employers and workers near PATCO locals could also have been exposed to information and social cues surrounding the strike even if no PATCO locals were in their own counties. To address these issues, this section introduces more flexible measures of treatment intensity to assess the spillover effect of the PATCO strike on private-sector union organizing.

Intensity based on PATCO membership.—I first replace the binary treatment indicator in equation (1) with the number of PATCO members in each county as of April 1981. Counties with more PATCO members had more controllers directly affected by the strike, which should have increased local exposure to information and social cues surrounding the event and made the strike’s implications more salient. As a result, the decline in private-sector union organizing should be larger in counties with more PATCO members if the spillover effect exists. Since this relationship may not be linear in the number of PATCO members, I also estimate a more flexible specification that uses dummy indicators for membership size (i.e., below the 25th percentile, between the 25th and 75th percentiles, and above the 75th percentile).

Table 3 reports the results. Columns 1 and 2 present the estimated coefficients on union organizing intensity based on the linear specification and dummy indicators for membership size, respectively. Both specifications show a clear exposure gradient: Counties with more PATCO members experienced larger declines in the number of RC elections after 1981. In the more flexible specification, the estimated decline increases from approximately 17 percent among counties with 1–8 PATCO members to 20 percent among counties with 9–

30 members and to 31 percent among counties with more than 30 members. Columns 3 and 4 report the corresponding estimates for union organizing success. The coefficients are positive across membership levels, and the increase in the union win rate is statistically significant only among counties with more than 30 PATCO members. Taken together, these findings suggest that the spillover effect of the PATCO strike was stronger in counties with larger PATCO membership. This pattern is consistent with the social information processing argument that the presence of more PATCO members should have increased the availability and salience of information and social cues surrounding the strike, thereby strengthening its influence on otherwise unrelated employers and workers.

Intensity based on distance to the nearest PATCO local.—I next use geographic distance to the nearest PATCO local as an alternative measure of exposure to the strike. Unlike the county-level binary treatment indicator, this measure allows exposure to extend beyond county boundaries. Employers and workers near PATCO locals could have encountered more information and social cues surrounding the strike through local media, social interactions, and other geographically connected channels. If the effects of PATCO increased with exposure, changes in private-sector union organizing should therefore become weaker as distance from the nearest PATCO local increases.

Table 4 reports the results using both a linear measure of distance and dummy indicators for distance groups (i.e., below the 25th percentile, between the 25th and 75th percentiles, and above the 75th percentile). Columns 1 and 2 show that distance to the nearest PATCO local is positively associated with union organizing intensity after 1981, indicating that the decline in RC elections was larger in counties near PATCO locals. Columns 3 and 4 show the opposite pattern for union organizing success. Distance is negatively associated with the union win rate, indicating that the increase in union success was larger in counties closer to PATCO locals. Thus, the combination of fewer RC elections and greater union success in elections held becomes more pronounced with greater proximity to PATCO locals, as would be expected given that geographic proximity likely increased exposure to information and

social cues surrounding the strike.

Taken together, the membership- and distance-based analyses reveal a consistent exposure gradient. The decline in organizing activity and increase in union success were largest where more PATCO controllers were directly affected and where employers and workers were geographically closer to PATCO locals. These patterns go beyond the binary distinction between counties with and without PATCO locals and provide additional evidence that the changes in private-sector union organizing varied systematically with exposure to the PATCO strike. These findings thus support the central argument that the effect of a prominent act of employer opposition can spill over to otherwise unrelated employers and workers, while further showing that the magnitude of this spillover varies with exposure to the event.

6 Additional Analyses

6.1 Decomposing the Decline in RC Elections

The baseline DID analysis shows that counties with greater exposure to the PATCO strike experienced a larger decline in the number of RC elections after 1981. This decline could reflect changes in workers' propensities to organize within industries or changes in the industrial composition of employment toward industries in which organizing was less common. Distinguishing between these channels is important for causal identification. If the decline reflects the spillover effect of the PATCO strike on otherwise unrelated employers and workers, it should operate primarily through changes in organizing behavior rather than through shifts in local industry composition. To investigate this, I follow [Schaller \(2023b\)](#) and decompose the decline in RC elections using the following equation:

$$\Delta RC_{ct} = \underbrace{\sum_{j=1}^J \Delta p_{cjt} Emp_{cjt^0}}_{\text{Within}} + \underbrace{\sum_{j=1}^J p_{cjt^0} \Delta Emp_{cjt}}_{\text{Across}} + \underbrace{\sum_{j=1}^J \Delta p_{cjt} \Delta Emp_{cjt}}_{\text{Covariance}} \quad (3)$$

where c indexes county, t indexes year (t^0 denotes the base year and is set to 1975), and j indexes industry. RC_{ct} is the raw number of RC elections in county c at time t , Emp_{cjt} is the number of workers employed in industry j in county c at time t , and p_{cjt} denotes the propensity of workers in industry j in county c to pursue RC election at time t . The operator Δ indicates the difference in a variable between time t and t^0 .

This decomposition isolates three channels through which the number of RC elections can change. The first, the *within* component, captures changes in propensities for organizing within industries over time, holding employment by industry fixed at its base year level. The second, the *across* component, captures changes resulting from shifts in employment across industries, holding industry-specific propensities for organizing fixed at their base year levels. The third, the *covariance* component, captures the interaction between changes in organizing propensities and changes in industry employment. Based on this decomposition, I construct three counterfactual measures of RC elections, each allowing the number of elections to change through only one of these channels:

$$RC_{c,t}^{within} = RC_{c,t^0} + Within \quad (4)$$

$$RC_{c,t}^{across} = RC_{c,t^0} + Across \quad (5)$$

$$RC_{c,t}^{cov} = RC_{c,t^0} + Covariance \quad (6)$$

I then re-estimate the event-study specification in equation (2) using either the observed number of RC elections or each of the three counterfactual measures. This exercise helps distinguish whether the decline in RC elections due to differential exposure to the PATCO strike primarily reflected changes in organizing behavior within industries or changes in local industry composition. [Schaller \(2023a\)](#) finds that the broader decline in NLRB elections largely reflected declining propensities for organizing within industries and suggests the PATCO strike as one potential contributor to this change. By contrast, explanations emphasizing structural shifts in employment from traditionally more unionized toward less unionized in-

dustries imply changes in the across component (Farber and Western 2016). Because there is little reason to expect PATCO exposure itself to generate such industry-composition changes, a differential post-1981 trend in the across component would instead raise concerns that the baseline estimates capture broader changes in local economic structure.

Figure 7 presents the results. The gray line shows the event-study estimates based on observed RC elections, while the black, orange, and blue lines report estimates based on $RC_{c,t}^{within}$, $RC_{c,t}^{across}$, and $RC_{c,t}^{cov}$, respectively. The estimates based on the within component closely track those based on observed RC elections after 1981, indicating that the differential decline in RC elections was driven almost entirely by declining propensities for organizing within industries. By contrast, the estimates based on the across component remain close to zero and exhibit little systematic change after 1981, providing little evidence that differential shifts in industry composition account for the baseline results. Finally, the estimates based on the covariance component are also negative but substantially smaller than those based on the within component, suggesting that changes in organizing propensities were only modestly related to concurrent changes in industry employment. Taken together, the decomposition indicates that the decline in RC elections associated with greater exposure to the PATCO strike primarily reflected changes in organizing behavior within industries rather than changes in the industrial composition of local employment. This finding strengthens the causal interpretation of the baseline DID results.

6.2 Heterogeneity by Occupational Investment

Reagan’s response to the PATCO strike may have been particularly consequential because of the characteristics of the workers involved. Air traffic controllers were highly trained workers with substantial occupational investment, yet more than 11,000 striking controllers were dismissed and ultimately replaced. The event therefore provided a highly visible demonstration that aggressive opposition to unions could succeed even when the workers involved had substantial skills and occupational investment. The replacement of highly trained controllers

may have been especially salient for private-sector employment relationships involving workers who would otherwise have been considered relatively costly to replace. As such, the spillover effect of the PATCO strike should have been more pronounced in labor markets characterized by greater occupational investment. In these settings, Reagan’s response conveyed particularly relevant information about the feasibility of replacing workers during labor disputes. I therefore examine whether the spillover effect of the PATCO strike varies with the level of occupational investment in the local labor market.

Following the literature, I use two measures of occupational investment. The first is the return to experience, where a steeper wage–experience profile indicates a higher rate of job training (Cramton and Tracy 1998). The second is vocational preparation time, which captures the time required for a typical worker to achieve average performance in an occupation (Shaw 1987). I aggregate both measures to the commuting-zone (CZ) level using local occupational composition, thereby approximating the level of occupational investment in the labor markets from which employers source workers. Using these measures, I estimate the impact of exposure to the PATCO strike on private-sector union organizing across different levels of occupational investment using the baseline DID specification in equation (1).

Figure 8 presents the results. When occupational investment is measured by the return to experience, the estimated effects on both union organizing intensity and organizing success are significantly larger in magnitude for counties in labor markets characterized by greater occupational investment. When occupational investment is measured by vocational preparation time, the estimated effects are also larger in magnitude in more investment-intensive labor markets, although the differences are not statistically significant. Together, these results provide suggestive evidence that the spillover effect of the PATCO strike was more pronounced in labor markets characterized by greater occupational investment. This pattern is consistent with the argument that the PATCO strike conveyed particularly important information about employers’ ability to replace workers who had traditionally been viewed as costly to replace during labor disputes. Thus, beyond signaling the acceptability

of aggressive opposition to unions, the PATCO strike may also have shaped perceptions of the economic feasibility of using replacement workers when employees possessed substantial occupational investment.

6.3 Impact on Private-Sector Union Membership and Density

The NLRB records also include data on the number of workers eligible to vote in each RC election. Using this information, I calculate the number of workers newly unionized through RC elections in each county-year and estimate the impact of differential exposure to the PATCO strike on this outcome using the binary treatment specification in equation (1). [Figure 9](#) plots the DID estimates from this analysis. Across specifications, the estimates are negative, similar in magnitude, and statistically significant. The results indicate an approximately 25 percent decline in the number of workers newly unionized through RC elections after 1981 in counties with PATCO locals relative to their counterfactual trend. Translating this effect into implications for private-sector union membership and density, however, requires additional assumptions. In the baseline calculation, I assume that all workers newly unionized through successful RC elections would become dues-paying union members, although attrition and free riding may reduce membership in practice. Hence, for a more conservative estimation, I alternatively assume that only workers who voted for union representation would become dues-paying members.

Two additional caveats are important for interpreting these calculations. First, the analysis focuses exclusively on RC elections and therefore does not capture other organizing channels, such as voluntary recognition, or any potential effects of the PATCO strike on established unions. Second, because the empirical design identifies changes associated with differential geographic exposure to the PATCO strike, the counterfactual does not represent a world in which the PATCO strike never occurred. Rather, it represents what union organizing in counties with PATCO locals would have looked like had these counties followed the counterfactual trend implied by counties less exposed to the strike.

With these caveats in mind, I report the average number of workers newly unionized and voting for unions in RC elections, together with private-sector union membership and density, in the top-right corner of [Figure 9](#). Combining these statistics with the DID estimates, I estimate that private-sector union membership would have been approximately 884,832 to 1,194,523 higher by the end of the 1990s, corresponding to an increase of 9.4 to 12.7 percent. This translates into a 0.9 to 1.2 percentage point increase in private-sector union density relative to the observed level of 9.4 percent in 1999. Taken together, these findings suggest that the spillover effect of a prominent act of employer opposition can accumulate into economically meaningful changes in union membership and density.

7 Discussion and Conclusion

The present study examines whether the effect of employer opposition can extend beyond the employment relationship in which that opposition occurs by analyzing the impact of the 1981 PATCO strike on private-sector union organizing. Although Reagan’s response to the strike was nationally visible, I draw on social information processing theory to argue that its spillover effect should be stronger where employers and workers were geographically closer to the striking controllers, due to the greater availability and salience of information and social cues surrounding the strike. Consistent with this view, PATCO-related newspaper coverage increased substantially more after the strike in counties with PATCO locals than in counties without them. Using a difference-in-differences design and NLRB election data, I find that counties with PATCO locals experienced an approximately 34 percent decline in the number of RC elections after 1981 relative to their counterfactual trend, accompanied by a 3 percentage point increase in the union win rate among elections held—consistent with a pattern of selective organizing in a more adverse environment. The findings thus support the argument that the effect of a prominent act of employer opposition can spill over to otherwise unrelated employment relationships, while further suggesting that the magnitude of this spillover effect increases with exposure to the originating event.

Additional analyses shed light on the nature and broader significance of these effects. The decline in RC elections associated with greater exposure to the PATCO strike was driven primarily by declining propensities for organizing within industries rather than by shifts in the industrial composition of employment. The estimated effects were also more pronounced in labor markets characterized by greater occupational investment, consistent with the argument that the replacement of highly trained air traffic controllers conveyed particularly important information about the economic feasibility of using replacement workers even when employees possessed substantial occupational investment. Finally, a back-of-the-envelope calculation suggests that private-sector union membership would have been approximately 9.4 to 12.7 percent higher by the end of the 1990s, corresponding to an increase of roughly 1 percentage point in union density, had counties with PATCO locals followed the counterfactual organizing trend implied by counties with lower exposure to the strike.

Overall, this study provides rare causal evidence that the 1981 PATCO strike or, more broadly, employer opposition contributed to the decline of U.S. unions by discouraging organizing in the private sector—the very first step in the unionization process. The decline of organized labor in the U.S. thus reflects not only the legacy of de-industrialization and other structural changes, but also a power imbalance that allows employers to deliberately undermine workers’ collective action. This finding carries important implications for legislative and policy reforms. One possible reform is to establish a less contentious process for unionization that would limit employers’ opportunities to interfere with the organizing process, such as by allowing for card recognition or outlawing captive audience meetings, (McNicholas et al. 2021). Another possible reform is to restrict the use of strike replacement by employers, which could undermine the perceived instrumentality of unionization and discourage workers from organizing (Cramton and Tracy 1998; Farber and Western 2002; LeRoy 1995). Imposing new restrictions or an outright ban on this practice can possibly restore workers’ bargaining power and strike a balance in labor relations.

Moreover, from a methodological perspective, the exposure-based approach used in this

paper could also be applied to study other industrial relations events often claimed to be important. For example, one may use this strategy to answer questions such as whether the 1997 strike by the United Parcel Service workers encouraged workers to unionize, whether union busting by a particular employer (e.g., Walmart) motivated other employers in the same area to be more offensive in their dealings with unions, and whether the recent mass firing of federal workers led to more layoffs by in the private sector by increasing the social acceptability of the practice.

Several limitations should be acknowledged. First, the empirical strategy identifies the spillover effect associated with differential exposure to the PATCO strike rather than its total effect. Because information and social cues surrounding the strike were unlikely to stop at county boundaries, employers and workers in counties classified as having lower exposure may nevertheless have been influenced by the event. Such cross-county exposure reduces the contrast between treated and comparison counties and is likely to attenuate the estimated effect. Second, the analysis focuses on RC elections and therefore does not capture other channels of union organizing, such as voluntary recognition, or effects on already unionized workplaces. Third, although the newspaper evidence and exposure gradients support the proposed interpretation, the analysis does not directly observe employers' or workers' beliefs about the PATCO strike. The study therefore cannot separately identify the specific behavioral responses of employers and workers through which the estimated spillover effect emerged. Finally, the analysis focuses on private-sector organizing. Whether a similar spillover effect occurred in public-sector labor relations, where the institutional environment governing unionization, bargaining, and strikes differs substantially, remains an important question for future research.

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Table 1. Summary Statistics (County Level, 1980)

	Mean		Difference	
	PATCO (1)	No PATCO (2)	Unconditional (3)	Conditional (4)
<i>Private-Sector Union Organizing</i>				
Union organizing intensity	2.95	0.98	1.97***	0.07
Union organizing success	49.69	49.97	−0.27	−2.69
<i>Demographic Characteristics</i>				
Log population	13.44	11.18	2.27***	
Female population (%)	51.66	51.15	0.50***	
Non-white population (%)	16.36	10.75	5.61***	
Population aged 15 or below (%)	21.84	23.46	−1.62***	
Population aged 16-64 (%)	18.94	18.25	0.69***	
Population aged 25-39 (%)	23.34	21.66	1.67***	
Population aged 40-54 (%)	15.28	15.11	0.17	
Population aged 55-64 (%)	9.59	9.62	−0.03	
Population aged 65 or above (%)	11.01	11.92	−0.91***	
<i>Employment by Industry (%)</i>				
Mining	0.46	2.23	−1.77***	
Construction	6.90	6.56	0.34	
Manufacturing	22.92	30.70	−7.78***	
Transportation, communications, and utilities	7.87	6.33	1.54***	
Wholesale trade	6.21	5.07	1.15***	
Retail trade	14.10	16.73	−2.63***	
Finance, insurance, and real estate	7.36	4.95	2.41***	
Service	34.18	27.48	6.70***	
Observations	345	2798		

Notes: This table presents summary statistics for variables used in the main analysis. Columns 1 and 2 display mean values in 1980 for counties with and without PATCO local unions, respectively. Column 3 reports unconditional mean differences between the two groups of counties. Column 4 reports mean differences for union organizing outcomes conditional on county population. *, **, and *** indicate significance at the 0.1, 0.05, and 0.01 levels, respectively. Results are weighted by county population for precision.

Table 2. The PATCO Strike and Union Organizing: Baseline DID Estimates

	Union Organizing Intensity			Union Organizing Success		
	(1)	(2)	(3)	(4)	(5)	(6)
PATCO $\times$ Post	−0.419*** (0.046)	−0.389*** (0.034)	−0.319*** (0.035)	2.950*** (0.739)	2.934*** (0.868)	2.780*** (1.015)
County FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
State-by-Year FE		Yes	Yes		Yes	Yes
Controls			Yes			Yes
Observations	81718	81702	81702	23808	23800	23800
Within R-Squared	0.0432	0.0339	0.0450	0.0005	0.0005	0.0021

Notes: This table reports the baseline DID estimates from equation (1), where the treatment variable is the presence of PATCO local unions as of April 1981. The dependent variable in columns 1 and 2 is union organizing intensity, measured as the natural logarithm of one plus the number of RC elections held in a county–year. The dependent variable in columns 3 and 4 is union organizing success, measured as the percentage of RC elections won by unions in a county–year (conditional on at least one RC elections). Specifications vary by the inclusion of fixed effects and control variables (i.e., demographic characteristics and share of employment by industry). Standard errors clustered at the state level are reported in parentheses. *, **, and *** indicate significance at the 0.1, 0.05, and 0.01 levels, respectively. All regressions are weighted by county population.

Table 3. The PATCO Strike and Union Organizing: Treatment Intensity by Membership

	Union Organizing Intensity		Union Organizing Success	
	(1)	(2)	(3)	(4)
PATCO membership $\times$ Post	-0.001*** (0.0002)		0.005* (0.003)	
1-8 members $\times$ Post		-0.181*** (0.041)		1.551 (1.807)
9-30 members $\times$ Post		-0.225*** (0.038)		0.969 (1.161)
30+ members $\times$ Post		-0.377*** (0.046)		3.768*** (1.410)
County FE	Yes	Yes	Yes	Yes
State-by-Year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Observations	81702	81702	23800	23800
Within R-Squared	0.0363	0.0464	0.0019	0.0023

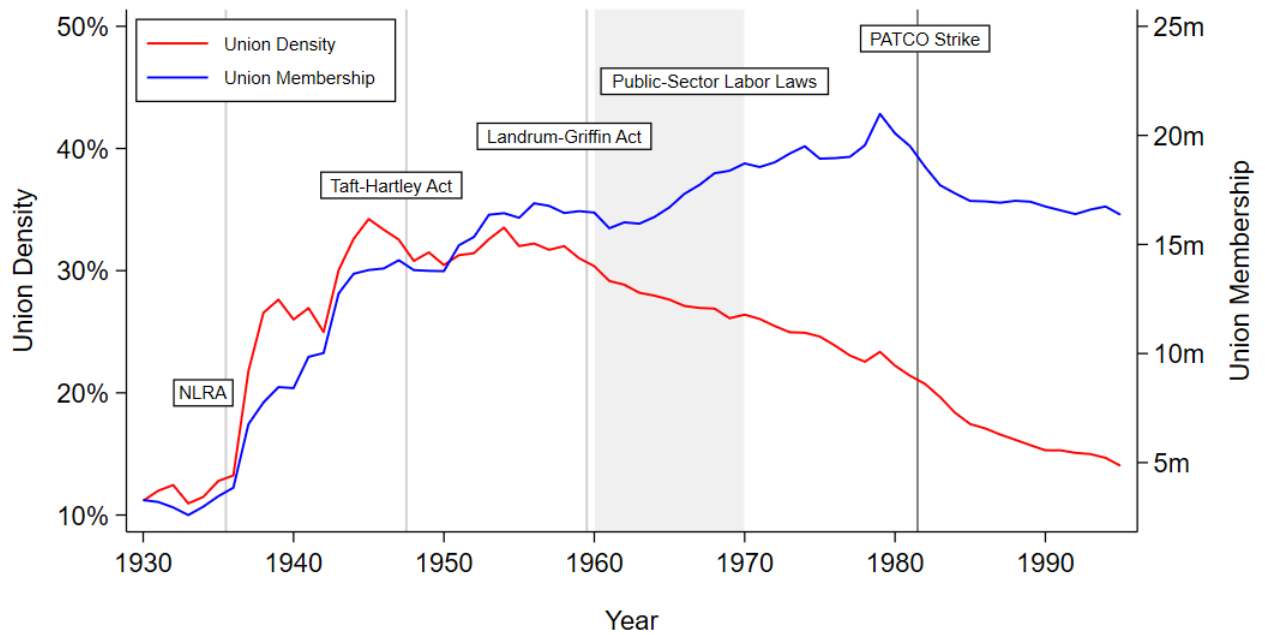
Notes: This table reports the impact of the PATCO strike on private-sector union organizing, using treatment intensity measures based on the number of PATCO members in a county as of April 1981. The dependent variable in columns 1 and 2 is union organizing intensity, measured as the natural logarithm of one plus the number of RC elections held in a county-year. The dependent variable in columns 3 and 4 is union organizing success, measured as the percentage of RC elections won by unions in a county-year (conditional on at least one RC elections). Control variables include demographic characteristics and share of employment by industry. Standard errors clustered at the state level are reported in parentheses. *, **, and *** indicate significance at the 0.1, 0.05, and 0.01 levels, respectively. All regressions are weighted by county population.

Table 4. The PATCO Strike and Union Organizing: Treatment Intensity by Distance

	Union Organizing Intensity		Union Organizing Success	
	(1)	(2)	(3)	(4)
Nearest distance $\times$ Post	0.005* (0.003)		-0.128*** (0.038)	
Less than 17 miles $\times$ Post		0.304*** (0.043)		-2.295 (2.061)
Between 17 and 26 miles $\times$ Post		0.310*** (0.034)		-2.282* (1.270)
More than 26 miles $\times$ Post		0.353*** (0.048)		-4.832** (1.992)
County FE	Yes	Yes	Yes	Yes
State-by-Year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Observations	81702	81702	23800	23800
Within R-Squared	0.0324	0.0450	0.0023	0.0022

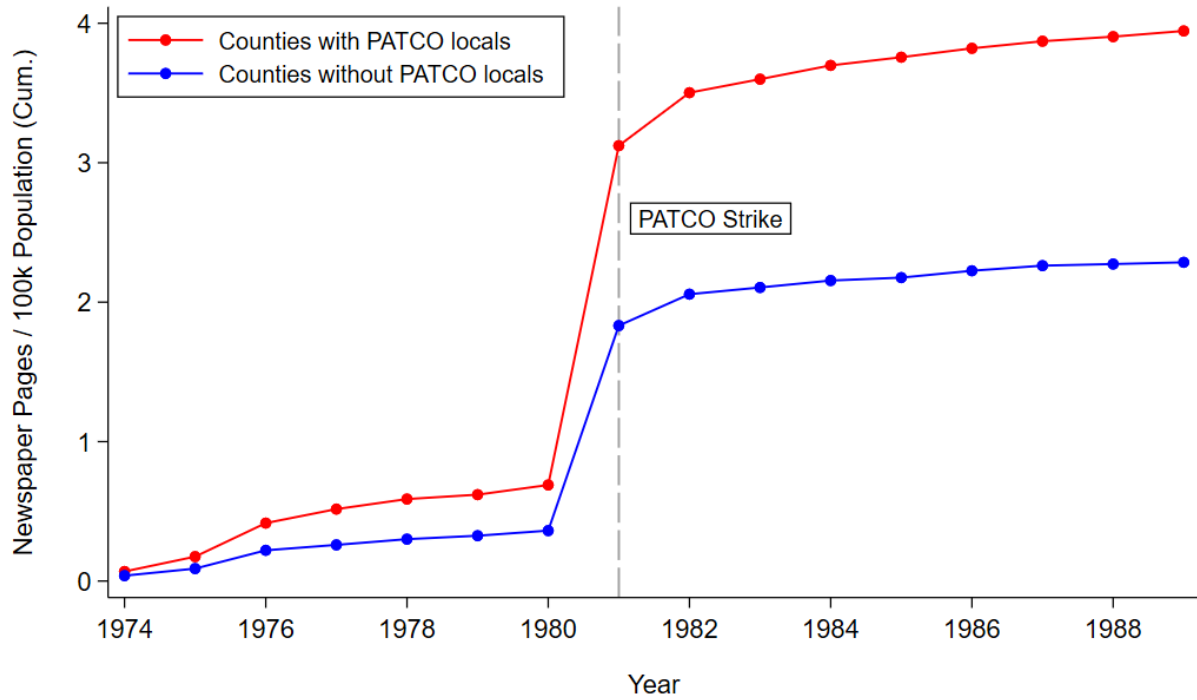
Notes: This table reports the impact of the PATCO strike on private-sector union organizing, using treatment intensity measures based on the distance to the nearest PATCO local union as of April 1981. The dependent variable in columns 1 and 2 is union organizing intensity, measured as the natural logarithm of one plus the number of RC elections held in a county-year. The dependent variable in columns 3 and 4 is union organizing success, measured as the percentage of RC elections won by unions in a county-year (conditional on at least one RC elections). Control variables include demographic characteristics and share of employment by industry. Standard errors clustered at the state level are reported in parentheses. *, **, and *** indicate significance at the 0.1, 0.05, and 0.01 levels, respectively. All regressions are weighted by county population.

Figure 1. Trends in Union Density and Membership, 1930-1995



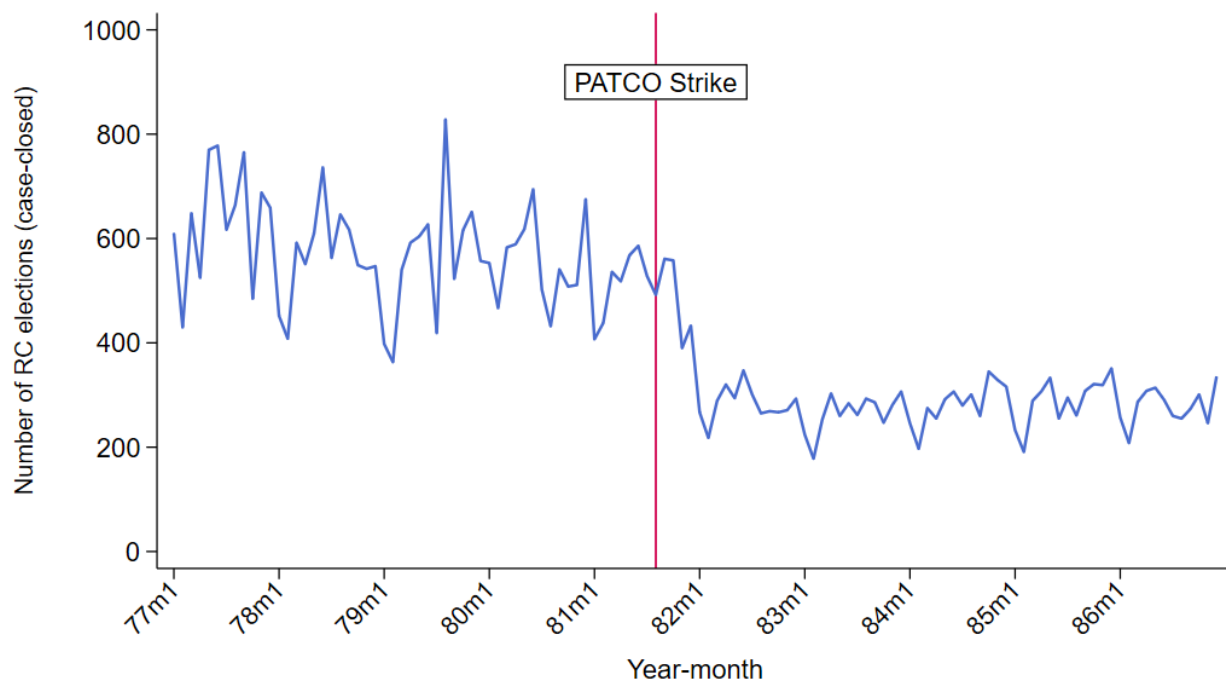
Notes: This figure plots the long-run trends in U.S. union density (red line) and membership (blue line) from 1930 to 1995, covering both private and public sectors. Data are based on [Freeman \(1997\)](#). Key developments in labor relations are annotated, including the passage of the 1935 National Labor Relations Act (NLRA) and its two major amendments—the 1947 Taft-Hartley Act and the 1959 Landrum-Griffin Act, and the expansion of public-sector labor laws across many states in the 1960s. The 1981 PATCO strike is also highlighted.

Figure 2. Cumulative Number of News Reports on PATCO, 1974-1989



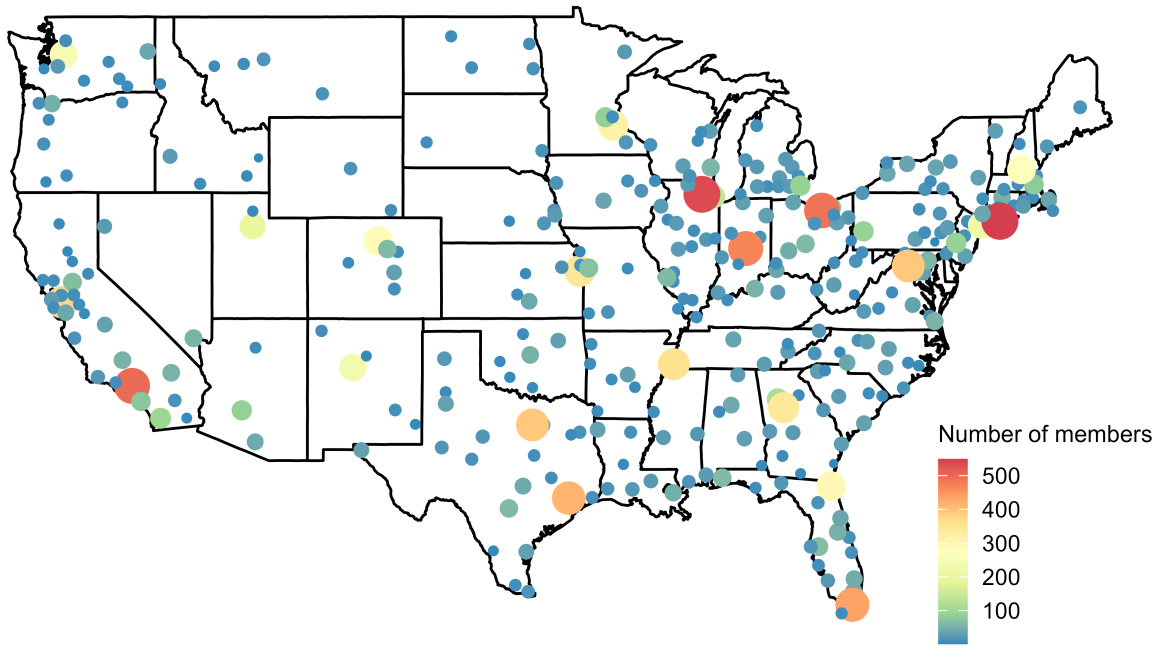
Notes: This figure plots the cumulative number of news reports (normalized by population) containing the key word “Professional Air Traffic Controllers Organization” from 1974 to 1989. The red line indicates the average number of newspaper pages published in counties with PATCO local unions as of April, 1981. The blue line indicates the average number of newspaper pages published in other counties. The vertical dashed line indicates the timing of the PATCO strike. Data on news reports are collected from the Newspaper Archive (newspaperarchive.com), and data on PATCO local unions are collected from [Southern Labor Archives](#) (2025) and described in detail in the *Data and Variable* section.

Figure 3. Monthly Number of the NLRB RC Elections, 1977-1986



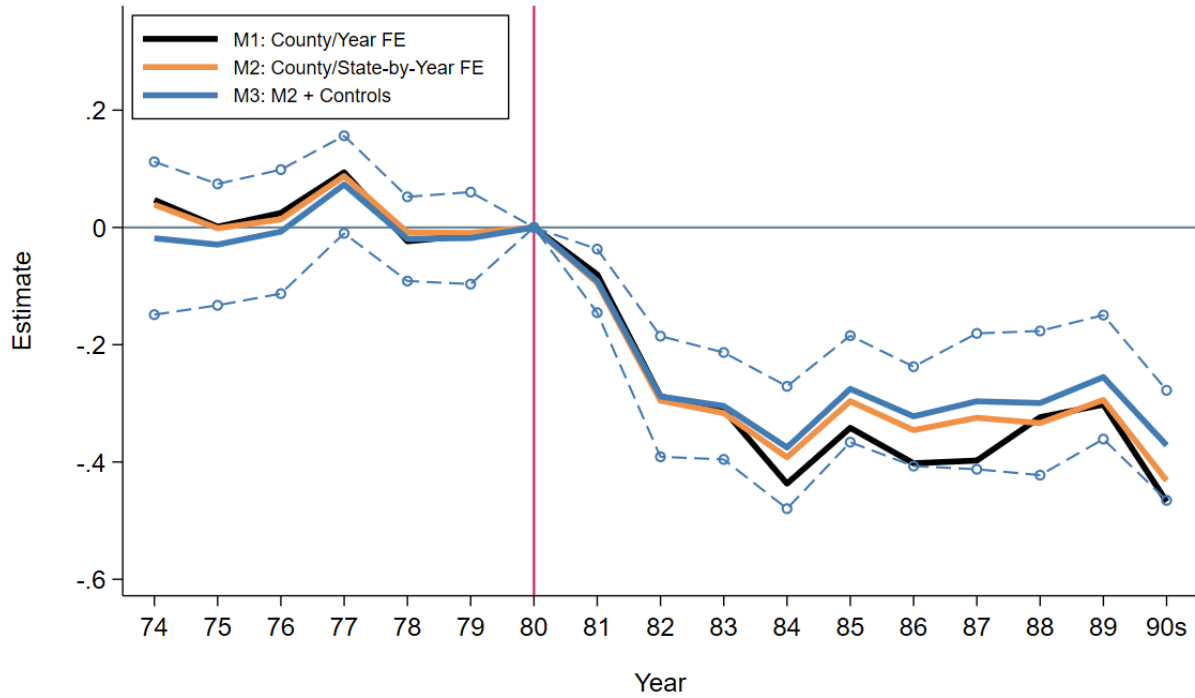
Notes: This figure plots the monthly number of NLRB RC elections from January 1977 to December 1986. The vertical line marks August 1981, the month of the PATCO strike. The figure shows a sharp decline in union organizing activity following the PATCO strike, with the number of RC elections falling from about 570 per month before the strike to fewer than 300 per month afterward.

Figure 4. Geographic Distribution of PATCO Local Unions and Membership, April 1981



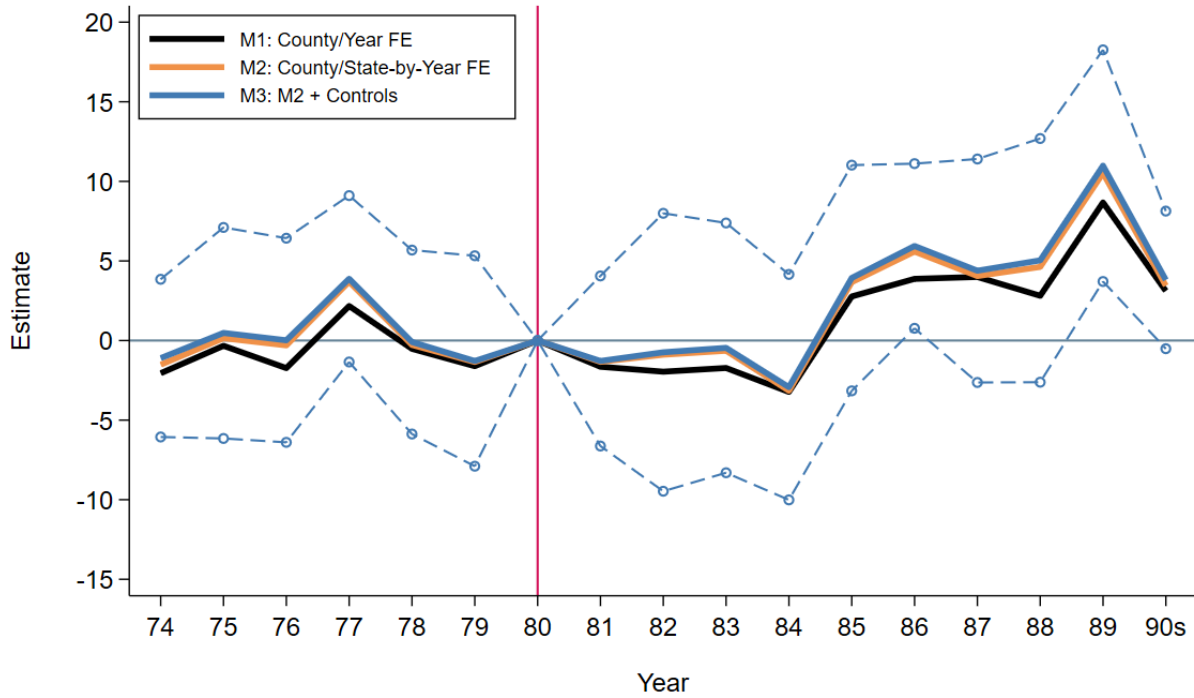
Notes: This figure shows the geographic distribution of 345 counties in which 457 PATCO local unions were located, along with 14,845 affiliated members as of April 1981. Each circle is centered on the county centroid, with the size proportional to the number of PATCO members in that county. The universe of PATCO local unions is identified based on information from the union's 1981 Annual Convention Handbook ([Southern Labor Archives 2025](#)), geocoded using government-mandated union filings (e.g., LM-3) and cross-validated with the Labor-Management Reporting System data compiled by [Holmes \(2006\)](#).

Figure 5. Dynamic Impact of the PATCO Strike on Union Organizing Intensity



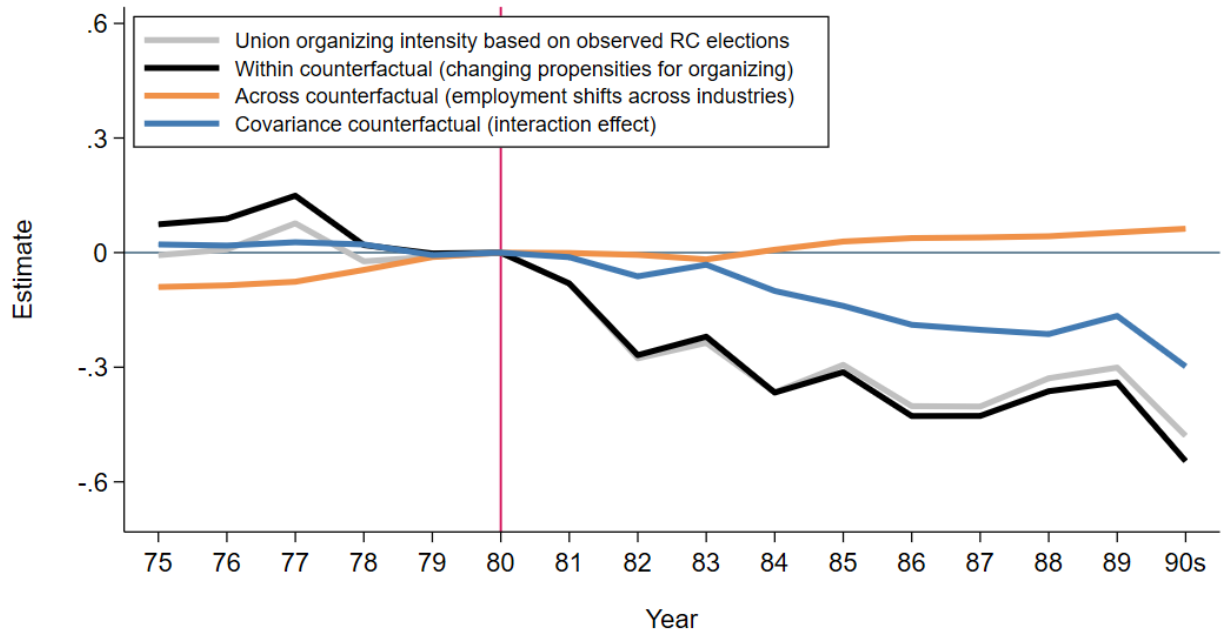
Notes: This figure shows the event-study estimates derived from equation (2). The dependent variable is union organizing intensity, measured as the natural logarithm of one plus the number of RC elections in a county-year. The vertical line marks the reference period 1980, one year prior to the PATCO strike. Estimates are reported from specifications with county and year fixed effects (black line), county and state-by-year fixed effects (orange line), and additional control variables including demographic characteristics and share of employment by industry (blue line). Dashed lines indicate the 95% confidence intervals from the most comprehensive specification using standard errors clustered at the state level. All regressions are weighted by county population.

Figure 6. Dynamic Impact of the PATCO Strike on Union Organizing Success



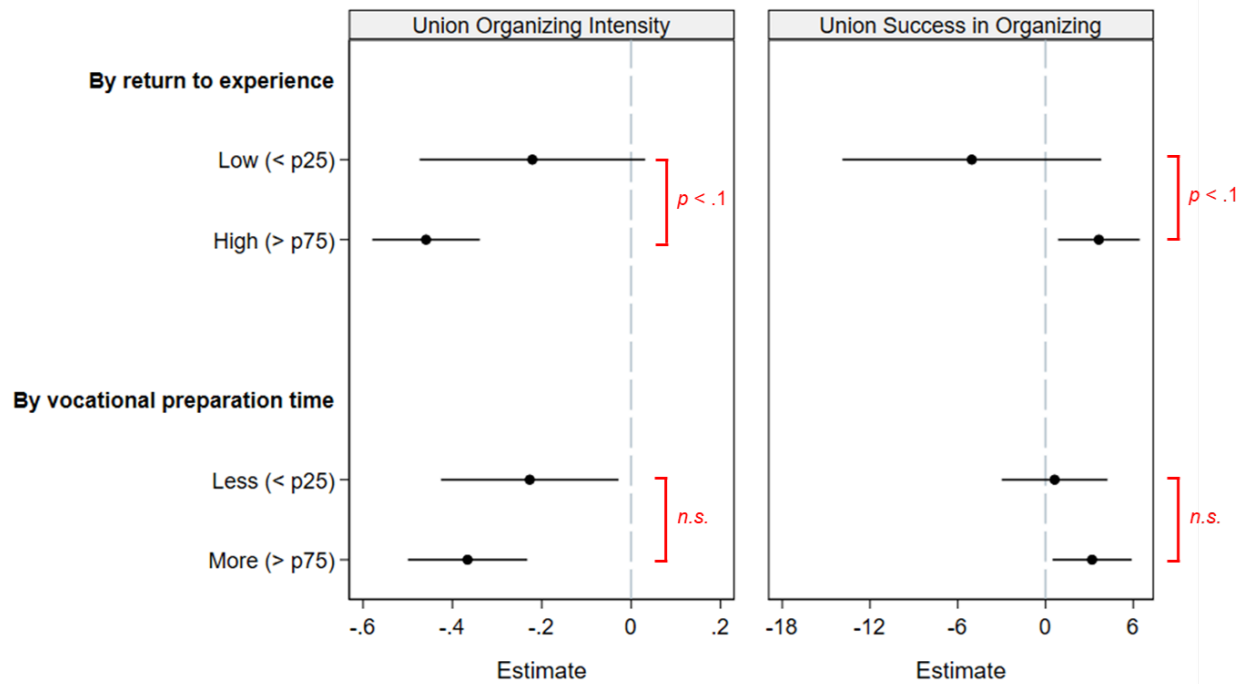
Notes: This figure shows the event-study estimates derived from equation (2). The dependent variable is union organizing success, measured as the percent of RC elections won by unions in a county-year. The vertical line marks the reference period 1980, one year prior to the PATCO strike. Estimates are reported from specifications with county and year fixed effects (black line), county and state-by-year fixed effects (orange line), and additional control variables including demographic characteristics and share of employment by industry (blue line). Dashed lines indicate the 95% confidence intervals from the most comprehensive specification using standard errors clustered at the state level. All regressions are weighted by county population.

Figure 7. Dynamic Impact of the PATCO Strike on Union Organizing Intensity based on Observed and Counterfactual Measures of RC Elections



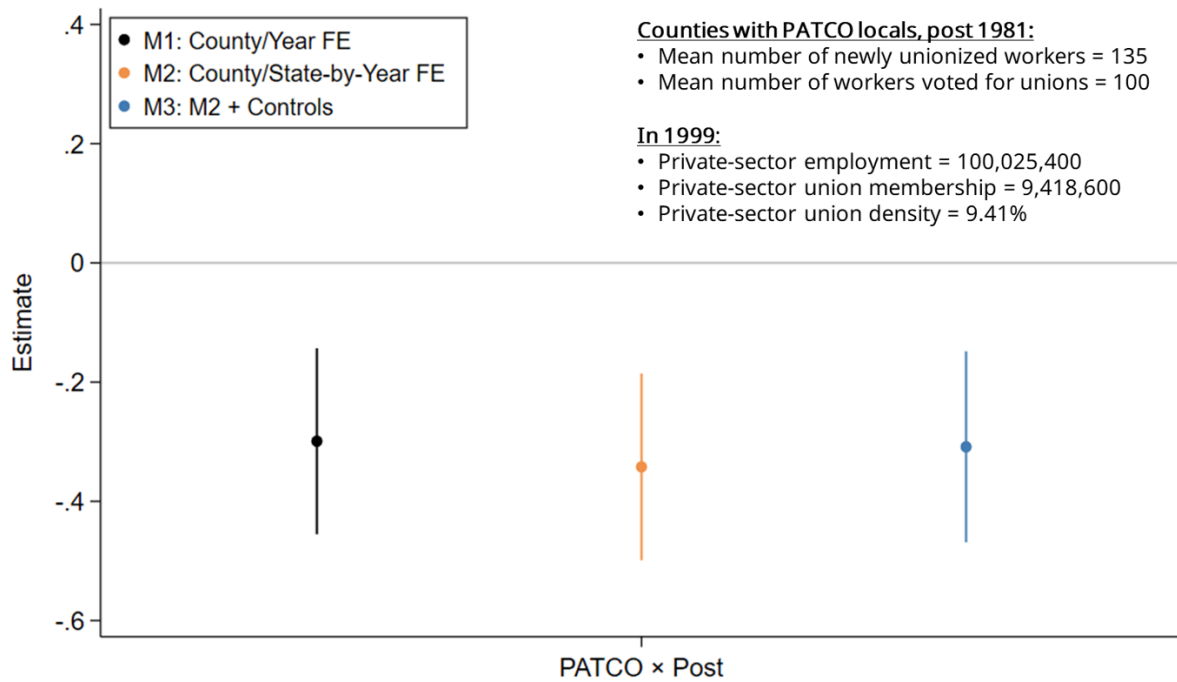
Notes: This figure plots the event-study estimates of the impact of the PATCO strike on union organizing intensity based on either observed or counterfactual measures of RC elections (all dependent variables are log-transformed as the in baseline analysis). The gray line shows the estimates based on the observed data. The black line shows the estimates based on the counterfactual that allows the number of RC elections to change only through variation in workers' propensities for organizing. The orange line shows the estimates based on the counterfactual that allows the number of RC elections to change only through employment shifts across industries. The blue line shows the estimates based on the counterfactual that captures the interaction effect between variation in organizing propensities and employment shifts across industries. The specification controls for county and year fixed effects. The vertical line marks the reference period 1980, one year prior to the PATCO strike. Confidence intervals are omitted for presentation purposes. All regressions are weighted by county population.

Figure 8. Heterogeneity Impact of the PATCO Strike on Union Organizing by Occupational Investment



Notes: This figure plots the DID estimates of the impact of the PATCO strike on union organizing intensity (left panel) and union organizing success (right panel) by the level of occupational investment. Two measures of occupational investment are used. The first is return to experience, where a steeper wage–experience profile indicates a higher rate of job training (Cramton and Tracy 1998). The second is vocational preparation time, which captures the time required for a typical worker to achieve average performance in a job (Shaw 1987). Both measures are aggregated to the commuting zone (CZ) level using occupational composition to approximate the local labor markets from which employers source labor. Estimates are reported separately for local labor markets composed of more training-intensive occupations (below the 25th percentile) and less training-intensive occupations (above the 75th percentile). Bars indicate the 95 percent confidence intervals using standard errors clustered at the state level. All regressions are weighted by county population.

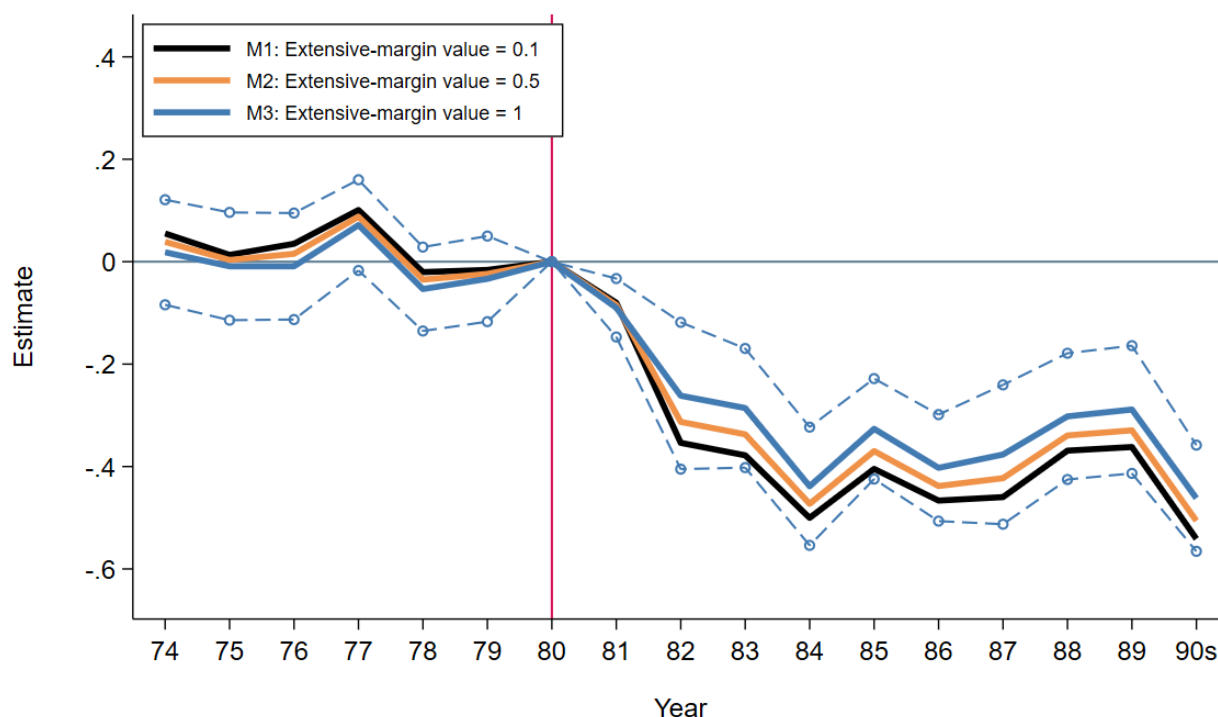
Figure 9. The Impact of the PATCO Strike on the Number of Newly Unionized Workers



Notes: This figure reports the baseline DID estimates from equation (1), where the the dependent variable is the natural logarithm of one plus the number of workers unionized through RC elections in a county–year. The treatment variable is the presence of PATCO local unions as of April 1981. The three coefficients reflect estimates from models with different specifications. Bars indicate the 95 percent confidence intervals using standard errors clustered at the state level. All regressions are weighted by county population.

Appendix

Figure A1. Alternative Measure of Union Organizing Intensity:
Log-Like Transformation with Calibration on the Extensive Margin



Notes: This figure plots the event-study estimates of the impact of the PATCO strike on union organizing intensity derived from equation (2), with explicit weights placed on the extensive margin. An extensive-margin value of 0.1/0.5/1 represents that one would value the effect of moving from 0 to 1 RC elections the same as a 10/50/100 percent increase in the number of RC elections. The vertical line marks the reference year 1980, one year prior to the PATCO strike. Dashed lines indicate the 95 percent confidence intervals from the specification with the largest extensive margin weight, with standard errors clustered at the state level. All regressions are weighted by county population.

Figure A2. Alternative Measures of Union Organizing Intensity:
Raw Number of RC Elections

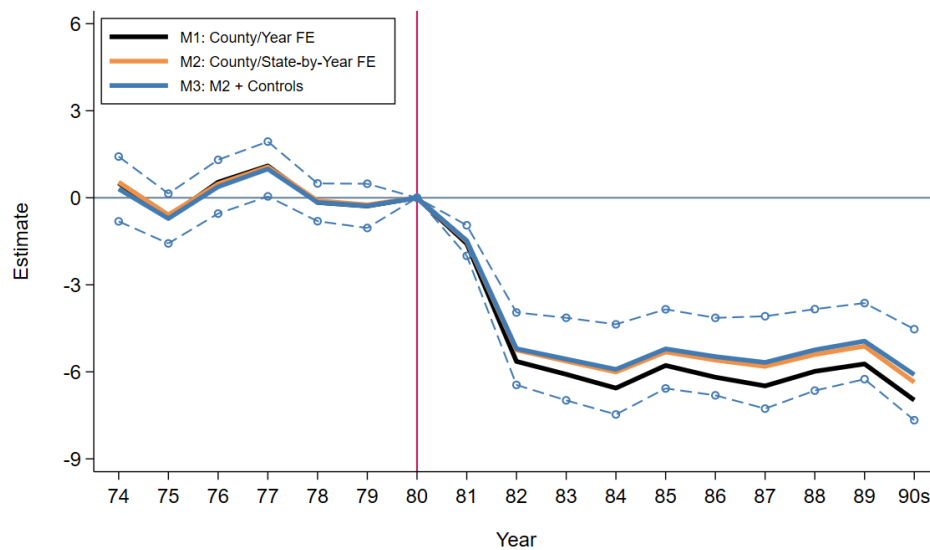
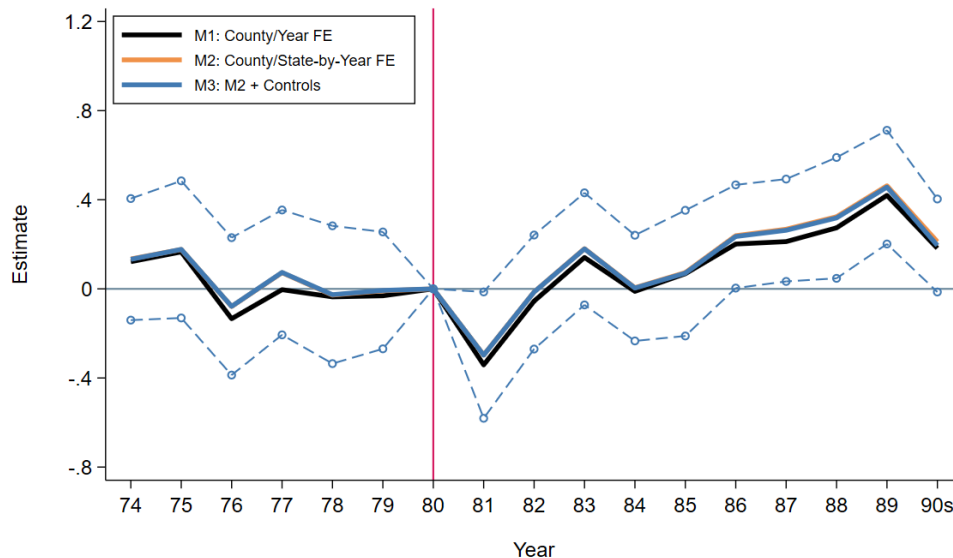


Figure A3. Alternative Measures of Union Organizing Success:
Raw Number of RC Elections Won by Unions



Notes: These figures plot the event-study estimates of the impact of the PATCO strike on union organizing using alternative measures of the outcome variables. In Figure A2, union organizing intensity is measured as the raw number of RC elections. In Figure A3, union success in organizing is measured as the raw number of RC elections won by unions (conditional on the raw number of RC elections in regression). Estimates are derived from specifications with county and year fixed effects (black line), county and state-by-year fixed effects (orange line), and additional control variables including demographic characteristics and share of employment by industry (blue line). The vertical line marks the reference period 1980, one year prior to the PATCO strike. Dashed lines indicate the 95 percent confidence intervals from the most comprehensive specification using standard errors clustered at the state level. All regressions are unweighted.

Figure A4. Alternative Measure of Union Organizing Intensity:
Number of RC Elections per 100,000 Population

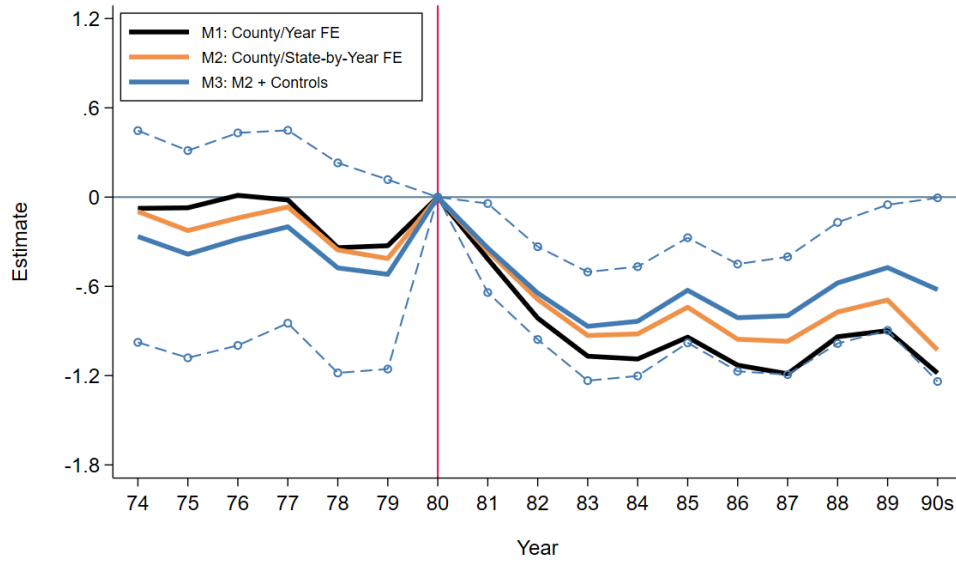
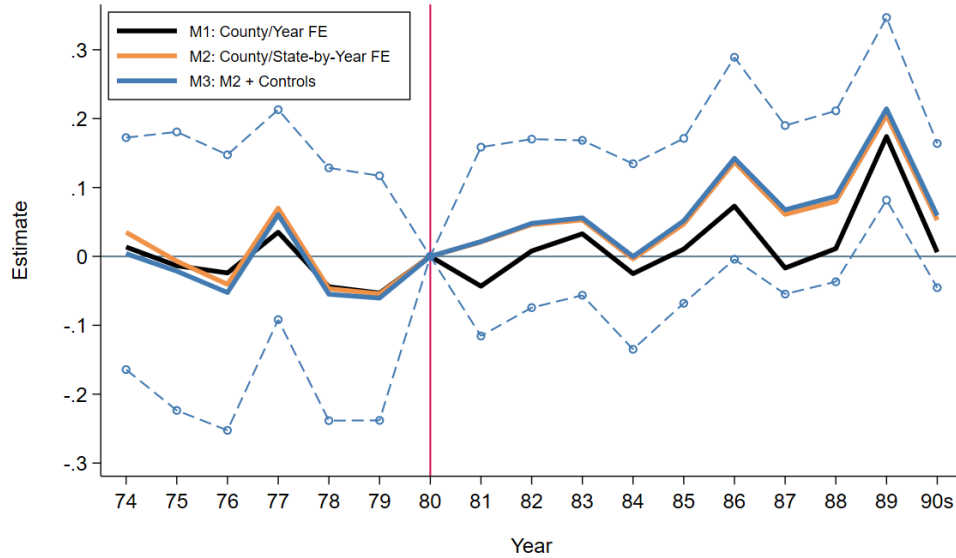


Figure A5. Alternative Measure of Union Organizing Success:
Number of RC Elections Won by Unions per 100,000 Population



Notes: These figures plot the event-study estimates of the impact of the PATCO strike on union organizing using alternative measures of the outcome variables. In Figure A4, union organizing intensity is measured as the number of RC elections per 100,000 population. In Figure A5, union organizing success is measured as the number of RC elections won by unions per 100,000 population (conditional on the number of RC elections per 100,000 population in regression). Estimates are derived from specifications with county and year fixed effects (black line), county and state-by-year fixed effects (orange line), and additional control variables including demographic characteristics and share of employment by industry (blue line). The vertical line marks the reference period 1980, one year prior to the PATCO strike. Dashed lines indicate the 95 percent confidence intervals from the most comprehensive specification using standard errors clustered at the state level. All regressions are unweighted.

Figure A6. Distribution of Placebo Coefficients on Union Organizing Intensity

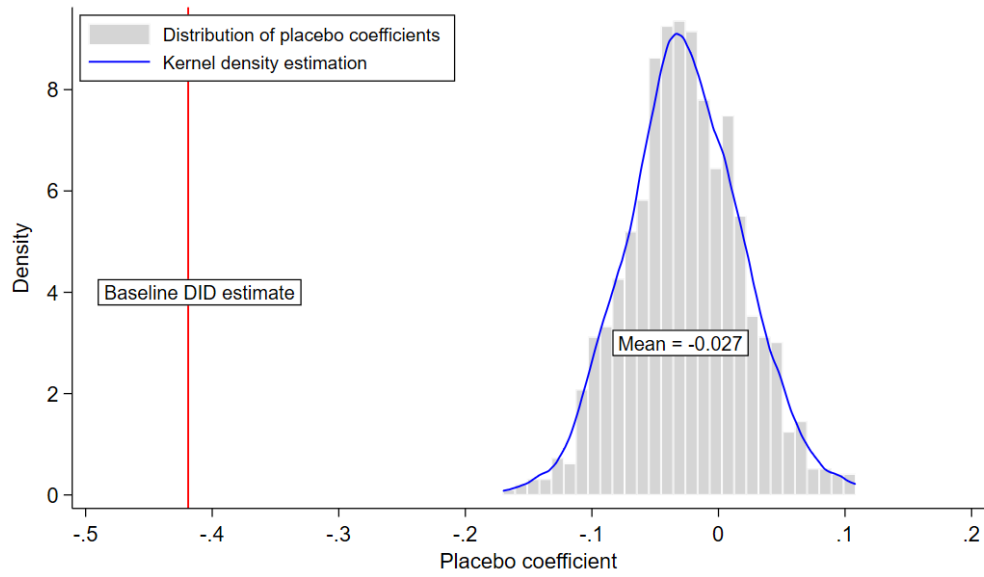
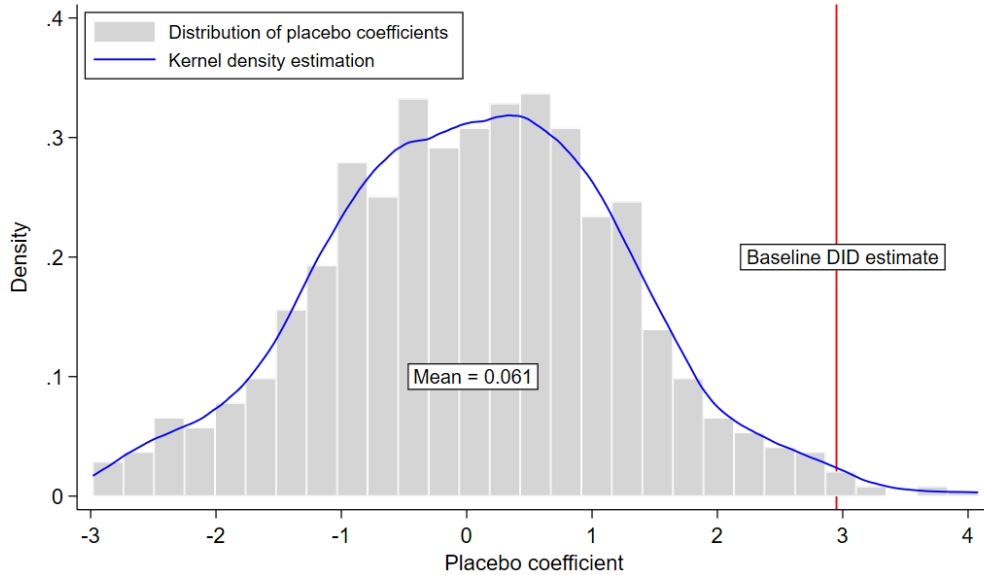
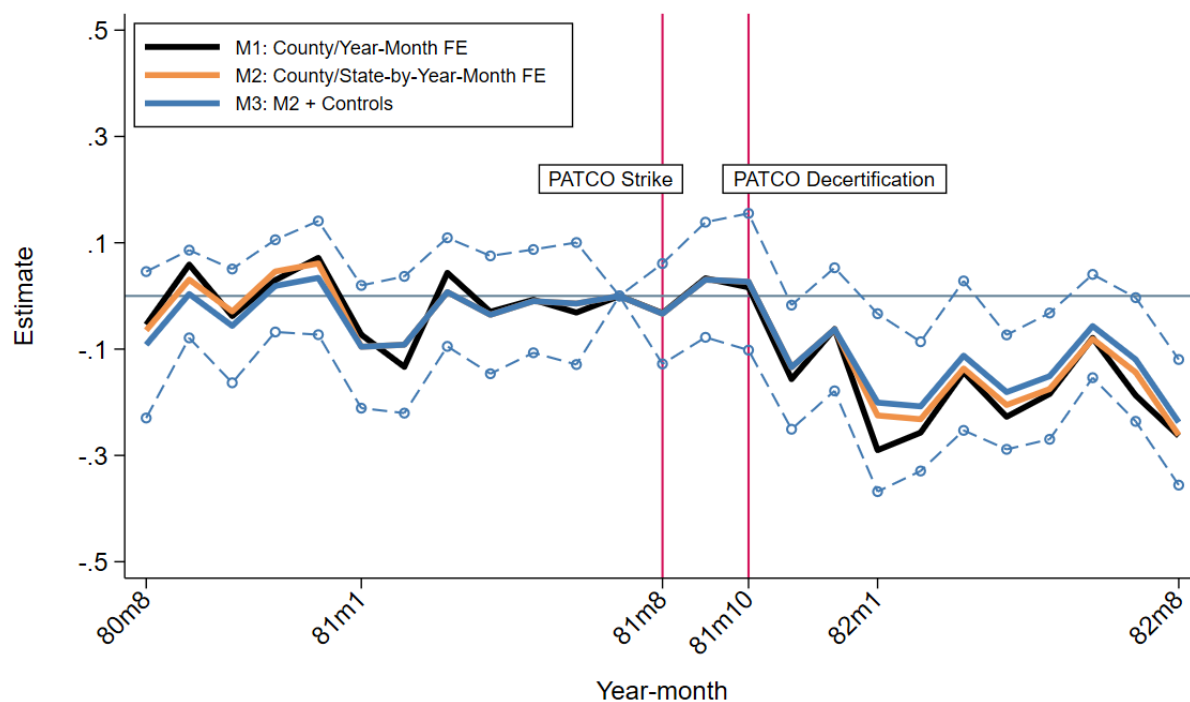


Figure A7. Distribution of Placebo Coefficients on Union Organizing Success



Notes: These figures plot the distribution of DID estimates from 1000 placebo tests. In each test, 345 counties are randomly sampled from a set of large counties (defined as those with a population size above the 50th percentile in 1980) and assigned to the treatment group. The dependent variables in Figures A6 and A7 are union organizing intensity and union organizing success, respectively. The blue line shows the kernel density estimation of the distribution of placebo coefficients. The red vertical line shows the baseline DID estimate based on the presence of PATCO local unions derived from equation (1). All regressions are weighted by county population.

Figure A8. Dynamic Impact of the PATCO Strike on Union Organizing Intensity
(County-Month Level Data)



Notes: This figure plots the event-study estimates of the impact of the PATCO strike on union organizing intensity at the county-month level. The two vertical lines mark August 1981 (the PATCO strike) and October 1981 (decertification of PATCO), respectively. Estimates are derived from specifications with county and year-month fixed effects (black line), county and state-by-year-month fixed effects (orange line), and additional control variables including demographic characteristics and employment by industry (blue line). Dashed lines indicate the 95 percent confidence intervals from the most comprehensive specification. All regressions are weighted by county population.