

# Organized Labor and Managerial Opportunism

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May 2022

Lilian Ng  
York University and ECGI

Man Duy (Marty) Pham  
Monash University

Jing Yu  
University of Sydney

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We thank Elizabeth Berger, Utpal Bhattacharya, Paul Brockman, Lili Dai, Wayne Landsman, Aneesh Raghunandan, David Reeb, Kelvin Tan, Dragon Yongjun Tang, and participants at the University of Sydney, Massey University, AFAANZ, FIRN Corporate Finance Meetings, FMA Asia/Pacific Meetings, UTS Emerging Accounting Researcher Consortium for helpful comments. The earlier version of this study was circulated under the title, “Labor Voice in Corporate Governance: Evidence from Opportunistic Insider Trading.” We are grateful to the Accounting & Finance Association of Australia and New Zealand for the 2020 Best Paper Award in Corporate Governance.

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## Abstract

This study examines whether organized labor plays a role in deterring managerial opportunistic behavior. Results suggest that firms with organized labor experience statistically significant declines in opportunistic insider trading and other managerial misbehavior, including illegal insider trading, corporate accounting fraud, and stock option backdating, consistent with the disciplinary effect of organized labor on managerial opportunism. We provide evidence that good employee-management working relationships and organized labor monitoring efforts are two economic mechanisms that explain the influence of organized labor. Finally, the deterrent effect of organized labor on managerial opportunism has real economic consequences. Mitigated opportunism is associated with better labor contract renegotiation outcomes and improved firm productivity and performance.

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Keywords: Managerial Opportunism; Labor Unions; Employees; Insider Trading; Accounting Fraud

JEL Classifications: G14, G31, J51, M54

Lilian Ng\*

Professor of Finance  
York University, Schulich School of Business  
4700 Keele Street  
North York, Ontario M3J 1P3, Canada  
phone: +1 416 736 2100 77944  
e-mail: lng@schulich.yorku.ca

Man Duy (Marty) Pham

Lecturer  
Monash University Malaysia  
Jalan Lagoon Selatan, Bandar Sunway  
Subang Jaya, Selangor, 47500, Malaysia  
e-mail: pham.duyman@monash.edu

Jing Yu

Associate Professor In Finance  
University of Sydney Business School  
Abercrombie Building, Abercrombie Street and Codrington Street  
Darlington, NSW 2006, Australia  
e-mail: jing.yu@sydney.edu.au

\*Corresponding Author

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Lilian Ng, Man Duy (Marty) Pham, and Jing Yu\*

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# Organized Labor and Managerial Opportunism

## ABSTRACT

This study examines whether organized labor plays a role in deterring managerial opportunistic behavior. Results suggest that firms with organized labor experience statistically significant declines in opportunistic insider trading and other managerial misbehavior, including illegal insider trading, corporate accounting fraud, and stock option backdating, consistent with the disciplinary effect of organized labor on managerial opportunism. We provide evidence that good employee-management working relationships and organized labor monitoring efforts are two economic mechanisms that explain the influence of organized labor. Finally, the deterrent effect of organized labor on managerial opportunism has real economic consequences. Mitigated opportunism is associated with better labor contract renegotiation outcomes and improved firm productivity and performance.

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# 1. Introduction

The last two decades have witnessed dire consequences of managerial opportunism, which results in some of the worst corporate scandals, including Enron (2001), Worldcom (2002), the Volkswagen emissions scandal (2015), and the Wells Fargo fake account scandal (2016). Such scandals not only destroy firm value and sometimes lead to bankruptcy but also impact the lives of rank-and-file employees, who are unlikely to orchestrate the scandal (Graham, Kim, Li, and Qiu, 2019; Choi and Gipper, 2021).<sup>1</sup> While all firm stakeholders bear the adverse consequences of managerial opportunism, much existing research focuses primarily on the role of shareholders in deterring managerial misbehavior. With the growing emphasis on stakeholder rather than shareholder primacy, employees who are internal stakeholders have become a powerful force in the current business environment. They have a significant stake in the company, gain access to inside information, and are most vulnerable to managers' wrongdoing. We, therefore, view employees as an effective internal control mechanism and examine the role of their collective voice, through unionization, in disciplining managers' behavior at the workplace.

The separation of ownership and control enables self-serving managers to opportunistically divert firm resources from shareholders. However, the extent to which such managers can divert resources is limited by their other sources of private benefits, such as a share of their firm's profits through cash bonuses and equity ownership (Nikolov and Whited, 2014). As resource diversions can erode firm profits and, in turn, hurt managerial private benefits, managers face a trade-off between the marginal benefit and cost of their opportunistic actions. We contend that the presence of organized labor raises the marginal cost of managerial opportunism and discourages opportunistic behavior through two channels. First, the employee-management relationship is typically viewed as an exchange of trust and commitment (e.g., Guiso, Sapienza, and Zingales, 2015). Employees form expectations of the treatment they receive at their workplace. They develop a sense of trust when they perceive that management will not exploit their vulnerability *ex post* and hence reciprocate by

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<sup>1</sup>Examining the worker-firm matched information from the US Census Bureau's Longitudinal Employer-Household Dynamics program, Graham, Kim, Li, and Qiu (2019) report that an employee's annual earnings fall by 10% when her firm files for bankruptcy and fall by a cumulative present value of 67% over seven years. Using the same data, Choi and Gipper (2021) document that employees of firms that commit fraudulent financial reporting lose about 50% of annual wages compared to a matched sample and the turnover is much higher after fraud periods.

engaging in firm-specific human capital investments and improving firm productivity. However, in the absence of trust, organized labor can incur significant economic costs to a firm, including costly labor contracting and even labor strife. This relationship-based employee governance will incentivize managers to foster a good relationship with their unionized employees and maintain integrity in the workplace.<sup>2</sup> We expect less managerial rent extraction in this work environment – the employee-management relationship channel. Second, the marginal cost of managerial opportunism increases when organized labor can use comparative information advantage and negotiation leverage against firm management (Dyck, Morse, and Zingales, 2010; Babenko and Sen, 2016). Given their firm-specific human capital investment, unionized employees are incentivized to monitor the management *ex ante* to prevent adverse consequences of their misbehavior. They can also leverage managerial misconduct as a bargaining chip to pursue their employment rights and benefits – the organized labor’s monitoring channel.

Notably, counter to the two channels, a competing view may argue that managers tend to withhold information from labor unions to improve the firm’s bargaining position (e.g., Bova, 2013). Hence, management themselves could exploit the increased information asymmetry in the presence of labor unions and indulge in opportunistic activities at low costs, predicting a positive relationship between managerial opportunism and unionization. Given the mixed views, we present empirical evidence of a unionization effect on managerial misconduct in US firms and unravel the underlying mechanisms driving the organized labor’s impact from the perspectives of managers and labor unions.

Our analysis uses opportunistic insider trading as a primary proxy for managerial opportunism because (1) it is a self-serving activity with an unambiguous impact on insiders’ personal wealth and the most direct mechanism through which managers expropriate other stakeholders (Baiman and Verrecchia, 1996; Chung, Goh, Lee, and Shevlin, 2018) and (2) important to our context, managers can exercise discretion over their personal trading accounts, independent of strategic firm policies that shareholders tend to endorse in preventing unions’ rent extraction. Based on a sample of 5,054 unique firms from 1996 to 2017, we find that the proportion of unionized employees

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<sup>2</sup>The emerging literature on corporate culture (e.g., Guiso, Sapienza, and Zingales, 2015) emphasizes that managerial integrity is the bedrock of mutual trust, on which working relationships depend, and imperative to establishing value-improving corporate culture.

is negatively related to insider trading profitability, even after controlling for various firm-specific variables that are good predictors of insider trading activity. In terms of economic significance, the return predictive power of net insider purchases in unionized firms is at least 40% less than that in non-unionized firms over one-, three- and six-month trading windows. Our base results are robust to other alternative opportunistic insider trading measures, including the short-term insider trading profitability, the frequency of opportunistic insider trading (Cohen, Malloy, and Pomorski, 2012), the proportion of insider trades prior to earnings announcements (Ali and Hirshleifer, 2017), and the unionization ratio at the industry level. Moreover, they remain materially unaffected when we employ alternative opportunism measures such as illegal insider trading, fraudulent financial reporting, and the extent of stock options backdating. Collectively, these results offer initial evidence suggesting the disciplinary role of organized labor in deterring managerial opportunism.

One might argue that our baseline finding is subject to an omitted-variables problem and/or the potential endogeneity of labor union status, making it challenging to disentangle causal effects from other unobserved confounding factors (Hirsch, 1997). We conduct two tests to address these concerns. First, we use a regression discontinuity design (RDD) that relies on exogenous variation generated by voting outcomes of firms' new unionization proposals that pass or fail by a small margin of votes around the actual threshold hurdle (e.g., Bradley, Kim, and Tian, 2016). Our findings suggest that winning a union election engenders a reduction in opportunistic trading gains. Second, we use the variation of whether states have adopted the Right-To-Work (RTW) laws as a quasi-natural experiment to examine labor power in opportunistic insider trading. RTW laws offer workers a choice to opt out of joining or paying dues to unions, and hence, such laws would weaken organized workers' voice. We find an increase in labor opportunistic insider trading among firms located in RTW-adopted states following the passage of the RTW law. Overall, the identification results reinforce our primary evidence that the attenuating impact of organized labor on opportunistic insider trading behavior is causal.

We then examine the two economic mechanisms through which organized labor influences management behavior. Our cross-sectional analysis suggests a pronounced effect of organized labor in restraining opportunistic managerial activity when firms face high costs of dismissing employee layoffs (i.e., in states with wrongful discharge laws) and when they must meet employees' demands



and compensate for their high exposure to unemployment risk (i.e., in states with low unemployment insurance benefits). The results also suggest that the labor deterrent effect is more robust when the return on employees' firm-specific investment is under threat, thereby provoking them to monitor the management more closely. Specifically, we find organized labor's mitigating managerial opportunism to be greater in firms with the tendency of employee mistreatment and those likely to underfund employee retirement benefits. Overall, the cross-sectional regression results support the underlying economic explanations for our primary findings, further reinforcing the causal relationship between organized labor and managerial misbehavior.

Additional analyses indicate that the negative effect of organized labor on insider trading profitability is stronger for firms located near National Labor Relations Board (NLRB) offices, firms operating in areas or industries with a strong labor union presence, and those that receive shareholder proposals from union pension funds. All this evidence suggests that unions wield influence over management via their accessibility to NLRB, peer unions, and shareholder activism, highlighting the different tactics unions employ to discipline self-serving managers.

Finally, we investigate the economic implications of the labor's role in curbing managerial opportunism. To the extent that financial markets reflect union negotiation outcomes promptly, we document greater stock market reactions around union contract renewals in firms with a low level of opportunistic insider trading. This result further supports the economic theory that managers strategically reduce opportunistic behavior to build good labor relations. Furthermore, our analysis shows favorable effects of unionized labor on total factor productivity and firm performance by restricting opportunistic insider trading and shaping corporate culture. Contrary to conventional wisdom on unions' rent-seeking behavior, our findings reveal a shareholder benefit of labor unions: unions play a disciplinary role in reducing managerial opportunism, leading to enhanced labor-manager relations and better firm performance.

Our study sheds new light on the bright side of labor power. We consider employees an integral part of corporate culture that can set social expectations of managerial behavior and monitor managers in their own interests. Our findings indicate that organized labor improves the information environment of the workplace and reduces financial reporting risk. In contrast, existing studies often portray labor unions as an implicit tax on corporate income (e.g., [Campello, Gao, Qiu, and](#)

Zhang, 2018; He, Tian, Yang, and Zuo, 2020). Consequently, managers tend to withhold firm financial information from unions by taking various strategic actions such as signaling a negative outlook (Bova, 2013), concealing good news but promoting bad news (Chung, Lee, Lee, and Sohn, 2015), and smoothing earnings (Hamm, Jung, and Lee, 2017), thereby worsening the information environment and facilitating managerial rent-seeking behavior.

Furthermore, our work identifies a crucial new determinant of informed insider trading. Past insider trading studies (e.g., Massa, Qian, Xu, and Zhang, 2015; Ellul and Panayides, 2018) show the roles of various stakeholders, including institutional investors, short sellers, and security analysts, in driving the informativeness of insider trading. Instead, we highlight a non-negligible effect of organized labor, an important internal stakeholder group that effectively constrains opportunistic and illegal insider trading.

The remainder of the paper is organized as follows. Section 2 discusses the related literature and develops our central hypothesis. In Section 3, we present the sample selection and research design. Section 4 discusses our results, and Section 5 explores the economic mechanisms through which organized labor deters insider trading activity and reduces insider profitability. Section 6 evaluates the economic consequences of the disciplining effect of labor unions, followed by a conclusion.

## **2. Related Literature and Hypothesis Development**

### **2.1. A Framework for the Impact of Labor on Managerial Opportunism**

The integrity of management is at the core of corporate value and is achieved by managers honoring their words and leading by example (Guiso, Sapienza, and Zingales, 2015; Graham, Grennan, Harvey, and Rajgopal, 2022). In an ideal world, ethical managers keep their words to earn and maintain the trust of others, promoting productive working relationships. However, this perception is inconsistent with the spirit of the agency problem. Managers are assumed to be self-serving and may behave opportunistically to advance personal benefits. Left unconstrained, counter-productive adverse behavior of managers can become a precursor of fraudulent corporate misconduct and even lead to the demise of a corporation.

While the economic literature relies on formal contracts such as incentive schemes to minimize agency costs, formal contracting is not always compatible with one critical aspect of personal traits – an inherent pursuit of opportunism. It is practically challenging for a contract to incorporate such unobservable characteristics or perfectly align managers’ and different stakeholders’ interests. Therefore, other informal agreements are required to complement traditional control systems and help alleviate a manager’s opportunism. In this study, we emphasize one important informal constraint – the labor force – that assists to promote ethical managerial conduct. Economic models (e.g., [Nikolov and Whited, 2014](#)) suggest that a manager derives private incentives from her share in firm profits through bonus pay, equity ownership, and opportunistic diversion of firm resources. However, resource diversions can reduce firm profits and, in turn, affect managers’ formal compensation components. Therefore, managers must balance the marginal benefit (self-dealing and outright stealing) and cost of opportunism (reduction in profit sharing and increase in reputational loss and litigation risk when getting caught) in equilibrium.

In our contextual framework, we expect that the labor force increases the marginal cost of managers’ opportunistic actions in two ways. First, such unethical behavior destroys mutual trust between employers and employees and results in an unproductive workforce and weak firm performance, raising the opportunity cost of opportunism. Second, the undiversified firm-specific human capital investment creates incentives for employees to monitor managers. [Choi and Gipper \(2021\)](#) show that when managerial misconduct (i.e., corporate fraud) is revealed, firms lay off workers, resulting in adverse wage consequences. Particularly, low-wage non-management employees suffer the most wage losses due to their high job search costs and low portability of skills. To avoid negative impacts on their employment, employees will validate and monitor managerial behavior *ex ante* as internal observers ([Babenko and Sen, 2016](#)).

We examine the labor influence on managerial behavior by focusing on their collective voice through unionization in the workplace. On the one hand, unions assume a primary role in protecting member employees’ collective interests. They are responsible for ensuring that firms develop and maintain viable businesses and adequately disclose any information about their ability to cover wages and other employee benefits ([Ogden and Bougen, 1985](#)). On the other hand, knowing that a breach of managerial integrity and trust may incur high costs to employees, unions will closely

watch managerial behavior and exploit any out-of-integrity conduct in labor contract negotiations (Matsusaka, Ozbas, and Yi, 2019). Labor unions, therefore, can act as a powerful internal monitor of managerial activity.

## 2.2. Managerial Opportunism

Given that managers' pursuit of opportunism is unobservable, we draw insights from the interaction of two distinct streams of literature and measure managerial opportunism through insider trading activity.

One strand of literature investigates the vital role of organized labor in corporate matters and provides some evidence of labor's influence on corporate governance-related issues. For example, Klasa, Maxwell, and Ortiz-Molina (2009) find less cash holding in more unionized industries as firms in such sectors safeguard corporate income from unions' demand. Chyz, Leung, Li, and Rui (2013) report reduced tax aggressiveness in unionized firms. However, they cannot infer whether their evidence is due to the increased unions' monitoring or decreased returns from tax aggressiveness that prevents labor unions' rent extraction. Huang, Jiang, Lie, and Que (2017) show evidence of lower executive pay in unionized firms, especially around labor contract negotiations as a strategic response to unions' demand for the benefit of shareholders. Despite these empirical results, the effect of organized labor on managerial behavior remains unclear. The reason is that any observed union effects on corporate decisions could arise from either shareholders' response to unions' rent-seeking behavior or increased labor monitoring of management. Nevertheless, this literature offers a useful guideline, i.e., the opportunism measure should embody a manager's personal choices, possibly independent of her firm policies which often require shareholder or board approval.

Another growing literature articulates the value impact of opportunistic managerial behavior and, more broadly, unethical corporate culture. It enlists several candidate measures of managerial opportunism, including the perceived managerial ethics from employee surveys/interviews (Guiso, Sapienza, and Zingales, 2015; Graham, Kim, Li, and Qiu, 2019), opportunistic insider trading (Ali and Hirshleifer, 2017), financial reporting frauds (Davidson, Dey, and Smith, 2015), and stock options backdating (Biggerstaff, Cicero, and Puckett, 2015). However, not all these measures are appropriate in our setting. Employee opinions expressed in the survey data are inherently

endogenous to the employees' monitoring effort and therefore are a weak opportunism measure. Corporate financial frauds only capture a small subset of unethical or illegal managerial behavior revealed in public, thus limiting the generalizability of our findings.<sup>3</sup> The revelation of the options backdating scandal in the 1990s (Lie, 2005) has led to the wide adoption of scheduled option awards, leaving managers less leeway to manipulate the timing of option grants.

In contrast, we argue that opportunistic insider trading activity is well suited to address the measurement issue. First, managers have more control over their personal trading accounts, whereas firm policies are subject to shareholder monitoring and influence. Ali and Hirshleifer (2017) find that, despite regulatory scrutiny, managers still exercise significant discretion to extract profits from insider trades on firm-specific information. They also show that opportunistic insider trading is a meaningful window into a manager's trait and helps identify unethical managerial opportunism in other domains, including earnings management, corporate accounting frauds, and executive compensation. Second, SEC Form 4 filings contain timely-reported information on insider trading activity, and these filings attract immediate attention from all market participants, including labor unions.<sup>4</sup> Given the mandated disclosure of corporate insider trading, managers have to harbor the fear of being publicly challenged by unions even if unions do not persistently observe their trades. Thus, our empirical analysis employs opportunistic insider trading activity as a primary measure of managerial opportunism and illegal insider trading, corporate financial frauds, and options backdating as alternative measures for robustness.

### 2.3. Hypothesis Development

Our conceptual framework implies that organized labor can positively influence a manager's ethical behavior, manifested in her insider trading activity, through at least two disciplinary mechanisms. The first mechanism stems from the manager's moral engagement with the labor force.

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<sup>3</sup>In our sample, there were only 1,915 firm-year observations (about 5% of the sample) involved in fraudulent financial reporting incidents based on the combination of three widely used financial frauds databases: (1) Accounting and Auditing Enforcement Releases (AAER), (2) Stanford Securities Class Action Clearinghouse (SSCAC), and (3) US Government Accountability Office (GAO) restatements by Hennes, Leone, and Miller (2008).

<sup>4</sup>For example, in October 2017, AFL-CIO, a labor union federation, urged the SEC to probe into purchases of a few large trades by Navient Corp.'s insiders. These trades occurred right before a congressional committee publicly released the information that the US Education Department would stop sharing information about the company with a regulatory agency, the Consumer Financial Protection Bureau, accusing Navient of wrongdoing.

Human capital is the most valuable intangible asset of the firm. [Erhard, Jensen, and Zaffron \(2009\)](#) postulate that managers operating with integrity are a necessary condition to establish a good working relationship with rank-and-file employees. However, opportunistic insider trading implicitly raises a manager's compensation and demoralizes employees by instilling a sense of unfair treatment ([Akerlof and Yellen, 1990](#); [Charness and Kuhn, 2007](#); [De Vito and Gomez, 2022](#)).<sup>5</sup> Also, when the manager profits from the withheld information, she is deemed to be lying to other employees, thereby undermining integrity as a corporate norm and losing trust in the workplace. In the presence of labor unions, a failed working relationship can result in employees withdrawing their contributions, such as work stoppages or tough labor contract negotiations, and jeopardizing productivity and firm performance ([Mas, 2008](#)). To stimulate employees' input, managers strategically act with integrity to maintain a harmonious relationship with organized labor (the employee-management relationship channel).

Second, labor unions naturally assume the role of scrutinizing and disciplining the management misbehavior to protect employee job security and advance labor interests (the organized labor's monitoring channel). For example, on the AFL-CIO's website, the "corporate greed" section exposes questionable corporate and management activities, including insider trading. Management misconduct, once exposed, imposes high personal costs on managers and, therefore, can be exploited as a bargaining chip to negotiate for employee benefits. In particular, labor unions can raise the personal cost of a manager's opportunistic activity through tactics such as condemning unethical management conduct in its political network ([Robbins, 1994](#)), exchanging information with peer unions, and influencing governance matters with equity ownership ([Schwab and Thomas, 1998](#)). Through these actions, unions also solicit more firm-specific information from external sources and further reduce the information advantage of corporate insiders.

The core tenet of our conceptual framework is that management refrains from unethical behavior to improve labor relations and boost employees' morale and engagement at the workplace. However, alternative arguments could justify a negative relationship between organized labor and

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<sup>5</sup>The equity theory in [Akerlof and Yellen \(1990\)](#) predicts a negative relation between within-firm pay inequality and firm performance based on workers' demotivation induced by sentiments of unfairness. [Charness and Kuhn \(2007\)](#) model a worker's effort as a function of her salary and her salary relative to coworkers and conclude that firms must design an optimal dispersion of salaries to induce workers' effort and maximize profits. [De Vito and Gomez \(2022\)](#) postulate that unionized workers show a stronger dislike for pay inequality than their non-unionized peers.

management opportunism. In particular, prior evidence suggests that managers tend to obstruct information from flowing to unions for fear of labor unions' rent-seeking behavior (Hilary, 2006; Bova, 2013). The resulting information asymmetry in the presence of labor unions could amplify the private information advantage of management, inflating their personal benefits of opportunistic insider trading. Despite the diverging views, we build upon organized labor's two disciplinary effects to formulate a directional link between managerial opportunism, proxied by opportunistic insider trading, and worker unionization in the following hypothesis:

Hypothesis: Unionized employees are associated with reduced opportunistic insider trading.

### 3. Data and Descriptive Statistics

#### 3.1. Sample Construction

This study employs data from several different sources: (i) firm-level unionization information from firms' 10-K filings; (ii) US insider trading data from the Thomson Reuters insider filings database; (iii) establishment-level union election data taken from NLRB; (iv) financial information from Compustat; (v) stock trading information from CRSP; (vi) financial analyst data from the I/B/E/S database; and (vii) data on institutional ownership from Thomson Reuters' Institutional Holdings (13F) database.

Our primary sample intersects these databases with non-missing values for our main variables of interest. We exclude financial and regulated utility firms (SIC codes 4900-4999 and 6000-6900). Our merging of databases yields a final sample of 414,737 transactions in 5,054 unique firms between 1996 and 2017. This sample period is bounded by the availability of firms' 10-K filings and insider trading information, and 1996 is the year where a substantial number of firms had their 10-K filings made available through SEC EDGAR. Appendix A depicts the definitions of all the key variables.

### 3.2. Measuring Collective Labor Voice

Our study employs a firm-level unionization ratio as a proxy for collective labor voice disciplining managerial opportunism. We parse this information from firms' 10-K filings filed to SEC EDGAR from 1996 to 2017. Following Hamm, Jung, and Lee (2017), our search algorithm first identifies the 10-K filings that contain several keywords or phrases describing firms as having a non-unionized workforce. Examples of these expressions include (i) "None of our employees are subject to/covered by/presented by labor unions;" (ii) "was/were not subject to/covered by/presented by a collective bargaining agreement;" (iii) "not a party to a collective bargaining/labor union;" and (iv) "no union/unionized employees/collective bargaining agreement." If any of these expressions are present in a firm's 10-K filings, we consider the firm as nonunionized. We further look into Item 1 of their filings for the remaining companies, which typically contain information on union memberships. In Item 1, we extract sentences that include variations of keywords such as "union," "collective(ly) bargain," "collective bargaining," "labor/employee/worker organization," and "work council."<sup>6</sup> We then locate the firm-level unionization ratio within these sentences. While most firms explicitly report the fraction of unionized employees, some firms disclose the number of unionized employees. In the latter case, we scale the number of unionized employees reported in the 10-K filing by the total number of employees; this information is downloaded from Compustat.

As shown in Table 1, labor unions are present in approximately 16% of our entire sample (66,190 insider transactions occur in unionized firms and 348,547 transactions in non-unionized firms), comparable to the statistics reported in Hamm, Jung, and Lee (2017). In addition, the fraction of unionized employees in the union firms is relatively high, with a mean (median) of 0.202 (0.133).

### 3.3. Measuring Managerial Opportunism

As discussed in Section 2.2, we use opportunistic insider trading as the key measure of managerial opportunism. We first retrieve information on insider trading from the Thomson Reuters insider filings database. Following prior literature, we focus on open-market insider transactions.

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<sup>6</sup>We exclude certain cases where the word "union" does not refer to labor unions. Examples are the European Union, Soviet Union, credit union, union squares, and union banks.



We then filter out the following types of transactions: (i) “large” shareholders with more than 10 percent of a firm’s stock, (ii) any traded price of less than \$2 or those with less than 100 shares, (iii) any traded price outside the range of daily highs and lows on the transaction date, and (iv) the number of shares traded exceeding the daily trading volume or the number of shares outstanding in CRSP. Our primary insider trading measure follows [Jagolinzer, Larcker, and Taylor \(2021\)](#) and assesses the opportunism based on insider traders’ abnormal returns following their company stock trading. Specifically, the insider trading abnormal returns are estimated using the risk-adjusted abnormal stock returns from Fama and French’s (2015) five-factor model estimated over the 180-day window following the insider transaction date. The 180-day window is chosen to accommodate the “short-swing” rule that prevents insiders from reversing their position and earning profits on a round-trip transaction within a six-month interval. We multiply *OpProfits* by  $-1$  for sale transactions; *OpProfits*, in essence, captures the capital gains after purchases and losses avoided by selling shares and thus reflects the information contained in the trades.

To ensure robustness, we also employ the following three alternative insider trading measures. The first measure, *OpProfits*<sub>20</sub>, estimates insider trading profitability over 20 trading days after the transaction date to account for the possibility that insiders could still earn abnormal returns in a shorter horizon despite the litigation risk (e.g., [Fidrmuc, Goergen, and Renneboog, 2006](#)). The second measure, *OpTrades*, assesses the frequency of opportunistic insider trades in a given firm. We follow [Cohen, Malloy, and Pomorski \(2012\)](#) and adopt an algorithm to compute the number of opportunistic trades at the firm level by stripping away trades executed by routine traders based on their predictable trading patterns in the past. Thus, *OpTrades* is computed as the natural log of one plus the number of insider trades executed by non-routine traders in a given firm-year. The third measure employs [Ali and Hirshleifer’s \(2017\)](#) approach that defines insiders as opportunistic managers if they make high profits from their trading prior to quarterly earnings announcements (QEA). We calculate the profits of pre-QEA insider trades during the 21 trading days but excluding the two days before QEA. Insiders are ranked into quintiles based on all their past pre-QEA trades’ average profitability, measured by market-adjusted abnormal stock returns in the five-day window centered at QEA. Our firm-level opportunism measure, *Quintile 5 Insiders*, is computed as the ratio of the number of insiders whose pre-QEA profits are in the top quintile (Quintile 5) to the

total number of insiders.

Table 1 reports the distribution of opportunistic insider trading profitability. *OpProfits* is 0.470% for unionized and 0.558% for non-unionized firms. The *p*-values associated with their mean and median differences (Columns (12)-(13)) suggest that opportunistic abnormal returns are significantly lower in unionized than in non-unionized firms. Online Appendix Table OA1 shows similar patterns in alternative opportunism measures, including *OpProfits*<sub>20</sub>, *OpTrades*, and *Quintile 5 Insiders*.

### 3.4. Control Variables

Drawn from prior insider trading literature (e.g., [Lakonishok and Lee, 2001](#); [Ke, Huddart, and Petroni, 2003](#)), we employ a list of firm-specific characteristics shown to affect insider trading of their company stock. For example, insiders can trade in liquid stocks and adopt a contrarian trading strategy based on their private information about mispricing errors. We use share turnover as a proxy for stock market liquidity (*Turnover*), computed as the daily trading volume divided by the number of shares outstanding in the previous year. We use the recent stock return (*Return*) to control for the contrarian belief of insider trades and compute *Return* as a buy-and-hold stock return over the 240-trading day period ending one day before the first insider transaction in a given calendar year. We also consider the variation in information asymmetry by controlling for institutional ownership (*IO*) and analyst coverage (*Analyst*). *IO* is the proportion of a firm's previous-year's shares held by institutional investors, whereas *Analyst* is the number of analysts following a company during the last year. Besides equity investors, debtholders can also monitor management and influence information asymmetry. Thus, we control for the implicit debt effect using financial leverage (*Leverage*), measured as the sum of long-term debt and current liabilities scaled by the previous year's total assets. Lastly, our analyses also control for firm size (*Size*, computed as the natural log of the previous year's stock market capitalization) and book-to-market equity ratio (*BM*, computed as the book value of common equity to market capitalization). To alleviate the concern of outliers, we winsorize all continuous variables at the top and bottom 1% of the sample distribution.

As seen in Table 1, unionized firms tend to be less liquid and have a lower past-year return than

non-unionized firms. However, unionized firms have higher analyst coverage, greater institutional ownership, more leverage, higher book-to-market ratio, and larger market capitalization than their non-unionized peers. We present the Pearson correlation coefficients between the main variables in Table OA2 of the Online Appendix. Two noteworthy observations emerge from the table. First, a statistically significant correlation between *Union* and insider trading profitability of -0.026 provides preliminary support for our hypothesis. Second, none of the other variable pairs are highly correlated. Except for the correlation between *Analyst* and *Size* of 0.789, the correlation coefficients are mostly below 50%, mitigating the multicollinearity concern.

## 4. Organized Labor and Managerial Opportunism

### 4.1. Baseline Evidence

In this section, we test the effect of labor unions on opportunistic insider trading activity by estimating the following baseline regression model,

$$\begin{aligned}
 Opportunism_{i,s,t} = & \alpha_0 + \beta_1 OrganizedLabor_{i,t-1} + \beta_2 Turnover_{i,t-1} + \beta_3 Return_{i,t-1} \\
 & + \beta_4 Analyst_{i,t-1} + \beta_5 IO_{i,t-1} + \beta_6 Leverage_{i,t-1} + \beta_7 Size_{i,t-1} \\
 & + \beta_8 BM_{i,t-1} + \epsilon_{i,t}
 \end{aligned} \tag{1}$$

where the subscripts  $i$ ,  $s$ , and  $t$  index firms, insider transactions, and year of insider transactions, respectively. *Opportunism* denotes the profitability of insider trading (*OpProfits*). *OrganizedLabor* <sub>$i,t-1$</sub>  is alternatively measured by a one-year lagged unionization ratio (*Union*) and a binary variable (*UDummy*) for whether a firm is unionized. We select an extensive set of control variables, including stock turnover (*Turnover*), previous stock return (*Return*), analyst coverage (*Analyst*), institutional ownership (*IO*), financial leverage (*Leverage*), firm size (*Size*), and book-to-market ratio (*BM*). All our specifications include two-digit SIC industry and year fixed effects, unless otherwise indicated, and their standard errors are adjusted for heteroskedasticity and firm-level clustering. Eq.(1) is estimated at the insider transaction level, and its results are shown in Table 2.

The table reveals our key finding that organized labor is negatively and strongly associated

with insider trading profitability. For example, the coefficient of *Union* is -0.243 ( $t$ -value = -2.84) without including any control variables except for industry and year fixed effects (Column (1)), and its magnitude becomes slightly smaller ( $\beta_1 = -0.208$  with  $t$ -stat = -2.60), while statistically significant, when we include firm-specific variables (Column (3)). The effect of *Union* on insider trading profitability remains materially unchanged even after we mitigate the concern of time-varying unobservable industry characteristics by controlling for Industry  $\times$  Year fixed effects (Column (5)). It is plausible that the presence of a union, rather than the extent of unionization, drives managerial behavior. Therefore, we assess the importance of the union presence by replacing *Union* with a dummy variable, *UDummy*. Columns (2), (4), and (6) continue to show a negative and statistically significant coefficient on *UDummy*, further confirming the negative effect of labor unions on insider trading profitability.

The effects of the control variables are broadly consistent with those of prior literature. *Turnover* is negatively correlated with *OpProfits*, suggesting that opportunistic insiders profit from thinly traded stocks. The lagged stock return is positively correlated with insider trading profits, consistent with prior evidence that insiders engage in contrarian trading strategies (Piotroski and Roulstone, 2005). Insiders trade more profitably in firms covered by fewer financial analysts and firms with high institutional ownership; these findings are in line with Fidrmuc, Goergen, and Renneboog (2006) that institutional investors are not effective managerial monitors but rather followers of information distilled from insiders. Opportunistic insiders earn lower profits from trading in firms with large borrowings, highlighting debtholders' disciplinary effect. Finally, the profitability of insider trades increases in larger firms and firms with lower book-to-market ratios, consistent with findings in Frankel and Li (2004) and Massa, Qian, Xu, and Zhang (2015).

In summary, the baseline regression results support our hypothesis that organized labor imposes a restraining effect on managerial opportunism, measured by insider trading profitability. Given the robust findings across various regression specifications, we only report results of regression models with industry and year fixed effects in subsequent analyses.

## 4.2. Economic Significance

This section explores the economic significance of our baseline findings drawing upon prior evidence that insider trades are informative and that such trades have the predictive power of future stock performance (Lakonishok and Lee, 2001; Cohen, Malloy, and Pomorski, 2012; Ali and Hirshleifer, 2017). Specifically, we evaluate the economic significance of the labor union's effect by comparing the stock return predictability of insider trades between unionized and non-unionized firms using the following model specification:

$$\text{Return}_{i,t+1 \rightarrow t+k} = \alpha_0 + \beta_1 \text{Union}_{i,t} \times \text{NPR}_{i,t} + \beta_2 \text{Union}_{i,t} + \beta_3 \text{NPR}_{i,t} + \gamma' X_{i,t} + \epsilon_{i,t}. \quad (2)$$

In Eq.(2), we regress future stock returns (i.e., future one-, three- or six-month returns) on insider net purchase ratio,  $\text{NPR}$ , and its interaction with  $\text{Union}$  along with other firm characteristic controls ( $X_{i,t}$ ). The observations are at the monthly interval.  $\text{NPR}$  is computed as the number of insider purchases minus sales, scaled by the total number of insider trades in the previous six months. Panel A of Table 3 summarizes the estimation results of Eq.(2). Columns (1)-(3) show that the coefficient of  $\text{NPR}$  is positive and statistically significant for future raw stock returns over one-, three-, and six-month horizons. This evidence confirms the predictive ability of insider net buys. Our main variable of interest is the interaction between  $\text{Union}$  and  $\text{NPR}$ . The  $\text{Union} \times \text{NPR}$  coefficient is negative and statistically significant at any conventional level, irrespective of how stock returns are computed and the investment horizon. This evidence confirms our baseline results that labor unions' presence significantly reduces return predictability of insider trades by tempering insiders' tendency and ability to trade on private information.

To facilitate the economic interpretation, we replicate the estimation of Eq.(2) by substituting  $\text{Union}$  with  $\text{UDummy}$  in Panel B. We find a sizable economic impact of unionization across all measures of future stock returns. For example, in Column (1), the coefficient of  $\text{NPR}$  is 0.005 ( $t$ -value = 11.92) and that of  $\text{UDummy} \times \text{NPR}$  is -0.002 ( $t$ -value = -3.37), indicating a 40% (-0.002/0.005) reduction in insider trades' return predictive power. Insider trades' predictive ability declines even further over longer horizons (i.e., three- and six-month periods) in unionized firms. For instance, for the six-month window, the return predictability of insider trades is 75% weaker in unionized

firms than in non-unionized firms. Furthermore, the economic significance of unionization's negating effect becomes even stronger in the excess stock returns analysis. For market-adjusted excess stock returns, insider trades' return predictability decreases by 50% to 94% in unionized firms as the return horizon extends from one month to six months. Similar magnitudes are observed for industry-adjusted excess stock returns. The overall evidence yields a valuable and economically significant effect of organized labor in mitigating opportunistic insider trading.

### 4.3. Additional Tests

In this subsection, we conduct a battery of robustness checks. In particular, we replicate the main analysis with three alternative measures of opportunistic insider trading, additional control variables, an industry-level unionization rate, and other managerial misconduct variables. Table 4 reports the estimation results of these tests.

#### 4.3.1. *Alternative measures of opportunistic insider trading*

We employ three alternative measures of opportunistic insider trading, as described earlier, namely *OpProfits<sub>20</sub>*, *OpTrades*, and *Quintile 5 Insiders*. As *Quintile 5 Insiders*, computed at the firm level, is bounded in nature, we re-estimate our baseline model using a Tobit regression. Columns (1)-(3) of Table 4 show that *Union* is consistently negatively associated with all the three different insider trading measures, reinforcing our baseline finding.

#### 4.3.2. *Additional Control Variables*

It is plausible that our key finding may capture the board of directors' governance role in ensuring the alignment of interests between management and shareholders. To rule out this possibility, we incorporate two widely studied board characteristics into our model: board size (*BoardSize*) and board independence (*BoardInd*). Both variables are available from the Institutional Shareholder Services (ISS) database. *BoardSize* is defined as the natural log of the number of directors in a given year, whereas *BoardInd* is the proportion of independent directors. Column (4) of Table 4 shows that the coefficient of *Union* remains negative and statistically significant even after con-

trolling for board size and independence, confirming that organized labor is a potent disciplining force in curbing opportunistic insider trading.

#### 4.3.3. *Alternative Measure of Organized Labor*

We also repeat our baseline analysis using the industry-level unionization data. We follow Hilary (2006) and Hamm, Jung, and Lee (2017) to generate the firm-level unionization rate from the product of the proportion of union members in a firm's industry and labor intensity, where labor intensity refers to the total number of employees scaled by total assets. The industry unionization ratio is available from the Union Membership and Coverage Database.<sup>7</sup> Column (5) of Table 4 shows a negative and statistically significant coefficient of  $Union_{Ind}$  on insider trading profitability, confirming our baseline findings.

#### 4.3.4. *Alternative Measures of Managerial Opportunism*

One possible concern is that some insider trading activities are motivated by managers' liquidity demand rather than their information advantage, thus not capturing managerial opportunism. We alleviate this concern by examining the effect of organized labor using a subset of firms with publicized managerial misconduct, including illegal insider trading and financial fraud, as well as in the context of stock option backdating. Specifically, *Illegal Insider Trades* is computed as the number of illegal insider trades according to Ahern (2017).<sup>8</sup> Column (1) of Table 5 shows a negative and significant relationship between *Union* and *Illegal Insider Trades*, albeit on a much smaller sample.

Corporate financial frauds are another adverse outcome of unconstrained managerial opportunism with ramifications on employee welfare. Following Liu (2016), we define *Financial Fraud* as a binary indicator that equals one if the firm experiences one of the following three events in a given year: (1) the firm receives an SEC Accounting and Auditing Enforcement Release (AAER) (May

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<sup>7</sup>The Union Membership and Coverage Database is constructed by Hirsch (1997). This database contains information on the industry-specific union membership obtained from the monthly Current Population Survey by the Bureau of Labor Statistics (BLS) (the details are available at [www.unionstats.com](http://www.unionstats.com)).

<sup>8</sup>We would like to thank Kenneth Ahern for making his illegal insider trading available at <http://faculty.marshall.usc.edu/Kenneth-Ahern/>.

1982 - Dec 2018);<sup>9</sup> (2) the firm-year is subject to a securities class-action lawsuit obtained from Stanford Securities Class Action Clearinghouse database (1995 - 2019); and (3) the firm announces a financial restatement according to the US General Accounting Office, and the restatement is classified as an irregularity by Hennes, Leone, and Miller (2008) (1996 - 2006). Column (2) of Table 5 reveals a significantly negative coefficient on *Union* in the logit regression when *Financial Fraud* is used as the dependent variable.

Finally, we use the presence of stock option backdating as another alternative opportunism measure. The variable, *Option Backdating*, is defined as a dummy variable that equals one if the strike price of at least one insider's option grant in a given year is the lowest price of the month and zero otherwise. Column (3) of Table 6 shows the robustness of our main finding.

#### 4.4. Identification Strategies

We have, thus far, established a negative relationship between opportunistic insider trading and unionized labor. Still, this relationship might arise from omitted confounding factors or a reverse causality from insider opportunism to unionization. For example, opportunistic insider trades could signal uneven information distribution between employees and management and create a sense of unfair treatment, prompting employees to join labor unions. In this section, we adopt three identification strategies to address endogeneity concerns.

##### 4.4.1. Close-Call Labor Union Elections

The first identification strategy relies on an RDD setting that utilizes a source of “locally” exogenous variation in firms' unionization generated by union elections (Lee and Mas, 2012; Bradley, Kim, and Tian, 2016). A simple majority (i.e., 50%) passing rule assigns a firm's unionization status during union elections. Given the percentage of votes for unionization in every union election, we can readily identify firms that pass or fail a small margin of votes around the 50% threshold. The original union elections data are hand-collected from the NLRB.<sup>10</sup> We set a 3-year time horizon in

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<sup>9</sup> AAER dataset is sourced from Dechow, Ge, Larson, and Sloan (2011).

<sup>10</sup> We first match employers' names in the NLRB database with names shown in the CRSP Master Name File. For those elections not matched with CRSP, we link the election data with the information on first-level subsidiaries in the Bureau van Dijk Osiris database. In the final step, we perform an internet search for the NLRB employer's parent



RDD tests. For firms that experience multiple elections over the 3-year window, we only retain the first election, resulting in a final sample of 1,107 unique union elections from 1996 to 2015. More than a third of these elections vote in favor of unionization.

Our RDD employs a nonparametric and local linear estimation approach as specified in the following estimation model:

$$\begin{aligned} OpProfits_{i,s,t+N} = & \alpha_l + \tau Pass_{i,t} + \beta_l (Vote_{i,t} - c) + (\beta_r - \beta_l) \times Pass_{i,t} \times (Vote_{i,t} - c) \\ & + \gamma' X_{i,t-1} + \epsilon_{i,t}, \end{aligned} \quad (3)$$

where  $i$  indexes firms,  $s$  indexes insider transactions,  $t$  indexes the year of insider transactions, and  $N = 1, 2, \text{ or } 3$  years.  $Pass$  is an indicator variable that takes the value of one if the union wins the election and zero if otherwise. The coefficient of interest is  $\tau$ , which captures the discontinuity at the majority threshold. The fraction of votes ( $Vote$ ) lies between  $(c - h)$  and  $(c + h)$  with  $c = 50\%$ , and  $h$  represents the optimal bandwidth based on [Calonico, Cattaneo, and Titiunik's \(2014\)](#) data-driven selection procedure. The interaction between  $Pass$  and  $(Vote_{i,t} - c)$  allows the slope to vary on either side of the cutoff.

An important assumption of RDD is that there should be no pre-existing discontinuity in other covariates at the cutoff threshold. The passage of union elections will not be viewed as a random assignment if it is somewhat associated with firm characteristics. We perform mean-comparison tests of the ex-ante covariates of firms that fall in a narrow band of vote shares (45%–55%) around the majority passing threshold in Panel A of Table 6. The  $t$ -tests for differences in means suggest that all covariates except  $BM$  are statistically indifferent between firms with close election wins and those with close election losses. We then conduct a joint test on the discontinuity in covariates by estimating each covariate's seemingly unrelated regressions on the unionization indicator ( $Pass$ ) and the voting share ( $Vote$ ). The Chi-square test for the hypothesis that the coefficients of  $Pass$  are jointly equal to zero reports a  $p$ -value of 0.339. Hence, we cannot reject the no-discontinuity hypothesis in other nonunion covariates, confirming that our election sample satisfies the randomness assumption.

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company from sources such as Bloomberg, Funding Universe, and Factiva to enlarge the universe of identifiable NLRB employers.

We test the difference in opportunistic insider trading activity between unionized and non-unionized firms over a three-year window in the wake of union elections in RDD under data-driven optimal bandwidths. Figure 1 provides visual confirmation of insider trading changes in response to the outcome of union elections in their firms. Columns (1)-(3) of Table 6 report the results of the local linear estimation model without including any control variables. The *Pass* coefficient is negative and statistically significant across all columns from one-year to three-year horizons following union elections. Since *BM* is different for unionized and non-unionized firms, we extend the local linear model with other firm-level covariates in Columns (4)-(6). This approach addresses the concern that the difference in the market valuation ratio may drive insider trading profitability, but our results remain unaffected. Our unreported results are qualitatively similar when performing RDD tests in higher-order (i.e., quadratic and cubic) polynomial regressions. The overall RDD results support unionization's negative and causal effect in deterring opportunistic insider trading.

#### 4.4.2. *The Adoption of the Right-to-Work (RTW) Law*

Motivated by Matsa (2010), our second identification strategy uses the adoption of the RTW law across states as an exogenous shock to firm-level unionization ratios. The RTW legislation outlaws contractual agreements between employers and labor unions, which require employees to join or pay for the costs of union representation. The passage of this legislation reduces the amount of funding available to support unionized employees. It also exposes unions to a free-rider problem, where non-unionized employees can still benefit from the actions of unions without paying union dues. Therefore, the RTW law makes union participation economically less attractive to employees, weakening labor unions' bargaining power and threat to management. We anticipate that this adoption would hurt union membership for firms in RTW-adopted states (the treatment group). In line with our hypothesis, one would expect an increase in opportunistic insider trading among treatment firms following the law's passage.

We empirically investigate our hypothesis using this natural experiment in a difference-in-differences (DiD) framework on our sample from 1996 to 2017. The states that adopted RTW laws include Oklahoma in 2001, Indiana in 2012, Michigan in 2012, and Wisconsin in 2015. We then implement a two-step matching procedure to select the control group. First, for each RTW-

adopted state, we match it with three control states that have not adopted the law during our sample period but have the closest labor force scale. State-level labor force statistics are retrieved from the US Department of Labor website. In the next step, each treatment firm is paired with five firms from the control states in the same industry and having the closest prior year's stock market capitalization. We also restrict our sample to three years before and after the corresponding RTW adoption year to better detect insider trading variation and test our hypothesis using the following DiD setting,

$$Opportunism_{i,s,t} = \alpha_0 + \beta_1 RTW_{i,t} \times Post_{i,t} + \beta_2 RTW_{i,t} + \beta_3 Post_{i,t} + \gamma' X_{i,t-1} + \epsilon_{i,t}. \quad (4)$$

$RTW_{i,t}$  is an indicator variable that takes the value of one if firm  $i$  is in the RTW-adopted state and zero if otherwise. The variable  $Post_{i,t}$  is a time indicator that equals one if the firm-year observation is after the RTW adoption and zero if otherwise.  $Post_{i,t}$  serves as a counterfactual variable for the control firm and is coded one if the state of the corresponding treatment firm adopted the RTW law and zero if otherwise.  $X_{i,t}$  is a vector of control variables as specified in our baseline Eq.(1). Our interest lies in the interaction between  $RTW$  and  $Post$ . Panel A of Table 7 compares the various firm characteristics between treatment and control firms and shows no fundamental differences, thereby validating our matching approach. Panel B shows the estimates of Eq.(4) and finds consistent evidence of a positive and significant coefficient on  $RTW \times Post$ , suggesting an increased opportunistic insider trading activity in treatment firms after the state adopted the union-weakening RTW law.

Finally, we also substantiate the above two endogeneity tests with an IV approach, where firm unionization is treated as endogenous and is instrumented with the industry-level proportion of female workers employed in heavy work occupations (*HeavyWork*).<sup>11</sup> Results, reported in Online Appendix Table OA3, indicate a positive and statistically significant coefficient on *Heavywork* in

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<sup>11</sup>The information on female participation by occupation and sector comes from the BLS and is available at <https://www.bls.gov/cps/tables.htm>. Heavy work occupations include those in natural resources, construction, and maintenance occupations, and in production, transportation, and material moving occupations. We aggregate the number of female employees in these occupations and divide it by the total number of employees in the corresponding industry. Our industry classification follows two-digit NAICS codes. This instrument's selection builds on the recent dominant position of women in the unionized workforce, especially those employed in occupations that require heavy work (Jones, Schmitt, and Woo, 2014). We anticipate a higher unionization ratio in firms operating in the heavy work sectors that employ more female employees.

the first-stage estimation, consistent with our prior. More importantly, after controlling for endogeneity in the first stage, the coefficient on  $\widehat{Union}$  remains negative and statistically significant.<sup>12</sup>

## 5. Economic Channels

In this section, we explore two economic channels through which organized labor can deter a manager's opportunistic behavior: (i) the employee-management relationship channel, and (2) the organized labor monitoring channel.

### 5.1. The Employee-Management Relationship Channel

Managers would engage with the labor force to build a better workplace to improve workers' efforts and productivity and maximize firm profits. However, managers trading opportunistically implicitly aggravates pay inequality within the firm and undermines the mutual trust underlying good employee-management relationships. Therefore, managers have more incentives to maintain good labor relations to avoid unions' costly actions in response to pay inequality or perceived managerial misconduct. Consequently, we expect the organized labor effect on insider trading profitability to be stronger in states that incentivize managers to maintain a good employee-management relationship. We identify such states as those that adopt wrongful discharge laws and offer less generous unemployment insurance (UI) benefits.

Since the 1970s, some US states have adopted common law exceptions to the employment-at-will doctrine, which are often referred to as "wrongful discharge laws" (WDLs), to protect employees against unjust dismissals by their employers (Bai, Fairhurst, and Serfling, 2020). There are three distinct WDLs: the public-policy exception, the good-faith exception, and the implied-contract exception. Dismissing employees appears to be more costly in states with WDLs. Hence, we introduce a dummy variable,  $WDL$ , that equals one if the firm is located in states that passed *all* three WDLs and zero if it is in a state that only passed one WDL or not at all.<sup>13</sup> As states had

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<sup>12</sup>The Hausman test's  $p$ -values are no higher than 5%, indicating that the 2SLS regression is more appropriate than the OLS regression.

<sup>13</sup>Alaska, Arizona, California, Connecticut, Idaho, Massachusetts, Montana, Nevada, New Hampshire, Oklahoma, and Utah adopted these three WDLs, whereas Alabama, Florida, Georgia, Louisiana, Maine, New York, North Carolina, Pennsylvania, and Rhode Island only adopted one WDL or not at all. The stringency of WDLs in other

implemented these laws prior to our sample period, *WDL* has no time variation in our test. Column (1) of Table 8 expands our baseline Eq.(1) to include an interaction term between *Union* and *WDL*. The estimated coefficient of  $Union \times WDL$  is negative and statistically significant, indicating a more pronounced deterrent effect of organized labor on opportunistic insider trading activity in states with WDLs.

Additionally, the state UI benefit laws could also affect managers' tendency to maintain a good labor relationship. One argues that employees in states with ungenerous UI benefits face greater exposure to unemployment risk and require employers to compensate for their high unemployment risk exposure. For example, [Berk, Stanton, and Zechner \(2010\)](#) find that labor unions induce firms to choose lower financial leverage to reduce workers' exposure to unemployment risk. [Agrawal and Matsa \(2013\)](#) show that in states with low UI benefits, firms tend to internalize workers' unemployment concerns and adopt conservative financial policies to lessen the unemployment risk. Consequently, to maintain a strong labor relationship in states with low UI benefits, managers must meet organized labor's demand and effectively reduce their heightened unemployment risk. We conjecture that in these states, managers will refrain from opportunistic behavior, recognizing that such behavior elevates employees' perceived unemployment risk and undermines the employee-management relationship. To test this conjecture, we capture a state's UI generosity using the natural log of the yearly average of weekly benefits paid to the unemployed labor force in a given state, using data from the US Department of Labor. We define the variable, *Low UI Benefits*, by multiplying the state's UI generosity by -1; a higher value indicates less generous UI benefits provided by the state. Column (2) of Table 8 documents a negative and statistically significant coefficient of  $Union \times Low\ UI\ Benefits$ , suggesting the more pronounced effect of organized labor in states with low UI benefits, consistent with the employee-management relationship channel.

## 5.2. The Organized Labor Monitoring Channel

Our tests on the labor monitoring channel are based on the notion that organized labor is more motivated to monitor the management when their firm-specific human capital investment is at risk. Prior literature ([Cohn and Wardlaw, 2016](#); [Caskey and Ozel, 2017](#)) suggests that low investments states that adopted two exceptions is unclear and, therefore, excluded from our analysis.

in workplace safety contribute to workplace injuries and labor law violations, thereby reducing employee welfare. Therefore, the monitoring effort of labor unions should be more pronounced in firms with low workforce investment. We measure labor investment as the natural log of selling, general, and administrative expenses per employee (*SG&A per employee*) following [Caskey and Ozel \(2017\)](#), and reestimate the expanded Eq.(1) with the workplace investment variable and its interaction with *Union* included. Column (3) of Table 8 shows a statistically significant and positive coefficient on  $Union \times SG\&A\ per\ employee$ , consistent with a stronger labor deterrent effect on opportunistic insider trading in firms cutting workforce investment.

We also look at firms' labor law violations as another employee (mis)treatment measure. These violations publicize employee mistreatment within a firm and require increased labor unions' monitoring efforts on managerial behavior and the firm's matters. Similar to [Li and Raghunandan \(2021\)](#), we employ the employee misconduct information from the Good Jobs First's Violation Tracker database covering a comprehensive list of labor sanctions on wage thefts and workplace safety hazards assessed by a variety of federal agencies.<sup>14</sup> Matching our sample with the labor sanctions data leads to 1,102 firms with 27,670 violations during our sample period. The employee mistreatment measure,  $\#Violations$ , is defined as the natural log of one plus the number of labor law violations in a given firm and year. Consistent with our prior, Column (4) of the table shows that the negative effect of organized labor on insider trading profitability is more pronounced in firms with a high number of labor law violations.

Finally, we measure the labor monitoring effort based on an employer's pension plan contributions, an integral part of employee benefits. There are two broad types of employer pension programs in the US: defined benefit (DB) and defined contribution (DC) pension plans. In a DB plan, the employer assumes the investment risk of the pension program and must set aside funds to meet employee retirement benefits, while in a DC plan, employees bear such investment risk ([Franzoni and Marín, 2006](#); [Merton, 2014](#)). Therefore, we expect a stronger monitoring incentive of organized labor in firms showing weaker funding status of DB pensions. To test this conjecture, we follow [Gaertner, Lynch, and Vernon \(2020\)](#) and estimate abnormal pension contributions in DB

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<sup>14</sup>Violation Tracker provides coverage of sanctions assessed by NLRB and other seven federal agencies, including the Employee Benefits Security Administration, Equal Employment Opportunity Commission, Federal Motor Carrier Safety Administration, Federal Railroad Administration, Mine Safety & Health Administration, Occupational Safety & Health Administration, and Department of Labor Wage & Hour Division.

firms as the annual employer contribution minus the expected contribution reported in the previous year's financial statement, scaled by the lagged value of total assets (*Pension Contribution*). For ease of interpretation, this variable is multiplied by 100. Column (5) of the table shows the expanded baseline regression results with *Pension Contribution* and its interaction with *Union*. The coefficient on the interaction term is negative and statistically significant, consistent with our expectation that organized labor exhibits a negative effect on managerial opportunism in firms that underfund DB pension plans.

Overall, the cross-sectional results provide consistent reinforcing evidence for the deterring organized labor effect on managerial opportunism, as stated in our hypothesis.

### 5.3. How Organized Labor Deters Managerial Opportunism

A natural question that arises is how organized labor reduces opportunistic insider trading. While labor movement within a firm is mainly unobservable, we perform some exploratory analyses to provide insights into the labor's influence over management through its external connections. Among others, unions' external connections can be manifest in (i) their accessibility to a federal agency that protects employee rights to improve their wages and working conditions; (ii) their collaboration with peer unionized firms; and (iii) union pension funds.

Labor unions can file grievances against their employers' unfair labor practices with NLRB, which oversees union activity and employee rights. It is plausible that the organized workforce in firms near NLRB representative offices could more conveniently bring their employee conflicts to the regulator's attention when they cannot entrust opportunistic managers to resolve the issues internally, raising the firm's litigation risk. To test this conjecture, we define a dummy variable, *NLRB*, which takes the value of one if a firm is headquartered within 100 miles from the NLRB's local office, and zero otherwise.<sup>15</sup> We expand our baseline analysis to include *NLRB* and its interaction with *Union* and report the results in Column (1) of Table 9. We find the coefficient of  $Union \times NLRB$  negative and marginally significant, suggesting a more pronounced deterrent effect of labor unions on opportunistic insider trading when managers face higher litigation risk.

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<sup>15</sup>There are 48 regional and sub-regional NLRB offices across the United States.

Our study also investigates the influence of communication and collaboration among labor unions in discouraging opportunistic managerial activity. The AFL-CIO and the Change to Win Federation are two prominent examples of cross-firm alliances between labor unions. Such collaborations provide organized labor an additional information channel and are more likely to occur between local or industry peers. We measure the extent of organized labor's information exchange with peers using the number of unionized firms in the same industry (*#Industry Peers*) and within 100 miles of a focal firm's headquarters (*# Local Peers*). In Columns (2) and (3) of the table, we observe that the coefficient estimate of the interaction between *Union* and the peer information exchange proxy is significantly negative, irrespective of how the peer information exchange is measured. Therefore, we interpret the evidence as consistent with the union's information exchange with their peers, limiting the information advantage of insiders and restraining their profitable trading activity.

Finally, labor unions can directly take an active role in corporate governance matters through union pension funds. For example, Schwab and Thomas (1998) show that union funds tend to align their interest with other shareholders' interest in disciplining unethical management practices.<sup>16</sup> We evaluate the union fund activism based on whether union funds file shareholder proposals at annual shareholder meetings. Specifically, we combine the proxy voting data of union-affiliated funds from the ISS database with our sample. The merged sample begins in 2006 due to the Institutional Shareholder Services (ISS) data availability. Accordingly, our baseline regression model includes a dummy variable, *Union Shareholder Activism*, which equals one if the union pension fund initiates a shareholder proposal in the previous year and zero if otherwise. Column (4) of Table 9 shows a negative and statistically significant coefficient on *Union* × *Union Shareholder Activism*. To the extent that raising shareholder proposals reflects labor unions' active participation in governance matters, our evidence aligns with organized labor's disciplining effect through union pension funds.

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<sup>16</sup>Notably, Agrawal (2012) documents evidence in support of a contradicting argument that union pension funds may advance worker interests instead of maximizing shareholder value. They report that AFL-CIO-affiliated shareholders are more opposed to directors when the AFL-CIO labor organization represents a firm's workers, and such union opposition is associated with adverse valuation effects. Our evidence, however, is more in line with Schwab and Thomas (1998) on the aligned interests between union funds and other institutional investors.



## 6. Economic Consequences

In this section, we explore several real economic consequences of organized labor’s disciplining role in mitigating managerial opportunism with respect to the labor relationship, firm productivity, and performance.

### 6.1. Labor Renegotiation Costs

Our conceptual framework assumes that managers in unionized firms can be incentivized to curtail opportunistic trading on inside information to earn trust and build a good working relationship with the workforce. Hence, one should observe an improved labor relationship accompanied by reduced opportunistic insider trading in firms with organized labor. While we cannot provide causal evidence for this hypothesis, the union contract negotiations offer us a potential opportunity to observe the quality of employee-management relations from stock market reactions during contract negotiation periods. We expect stronger stock market reactions associated with more favorable negotiation outcomes for a firm and its shareholders due to better labor relations.

We extract union contract expiration dates from the BNA Labor Plus database and identify 293 union contracts in 153 unique unionized firms during our sample period. Because a new labor contract’s start date is unavailable, we assume its start date to coincide with the expiration date of the previous labor contract. We then test the consequence of the organized labor effect on stock market reaction, a proxy for labor relationship, in the following model,

$$\text{Market Reaction}_{i,t} = \alpha_0 + \beta_1 \text{OpProfits}_{i,s,t} + \gamma' X_{i,t-1} + \epsilon_{i,t} \quad (5)$$

where *Market Reaction*, alternatively, represents the cumulative daily raw or abnormal stock returns (CAR) over the 11- and 21-day windows centered around the contract expiration date 0. We define the event windows based on the notion that negotiation outcomes are revealed to the market around contract expiration dates.<sup>17</sup> The abnormal return is computed as the difference between the raw

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<sup>17</sup>While prior studies (e.g., [Liberty and Zimmerman, 1986](#); [Matsusaka, Ozbas, and Yi, 2019](#)) often presume that the contract negotiation can take place between one quarter and one year before the expiration date, we believe that the stock market is unaware of the negotiation outcomes until closer to the contract approval date (<https://www.shrm.org/hr-today/news/hr-magazine/pages/0105tyler.aspx>).

stock return and expected return based on either the market model or the Fama-French five-factor (FF5) model estimated using daily stock returns from day -250 to day -30 relative to the labor contract expiration date. *OpProfits* measures the profitability of insider transactions made one year prior to the contract expiration date, and  $X$  represents a vector of control variables identical to those included in the base Eq.(1). Table 10 displays the estimation results.

We observe a consistently significant and negative coefficient on *OpProfits* across different event windows and return measures. For example, the coefficient estimate of *OpProfits* is -0.004 ( $t$ -stat = -2.18) in Column (1) when the stock market reaction is measured based on cumulative raw returns. It remains qualitatively similar when the market reaction is captured by market- and FF5-adjusted abnormal returns in Columns (2)-(3). Even when the event window expands to ten days before and after the contract expiration, we continue to observe a robust negative relation between opportunistic insider trading and stock market response to the union contract negotiation. This evidence suggests an improved labor relationship resulting from the reduced opportunistic behavior in unionized firms.

## 6.2. Firm Productivity and Performance

Early labor research (Chiles and Stewart, 1993; Vedder and Gallaway, 2002) tends to portray unions as an implicit tax because they demand wage increases without a compensating increase in productivity. This strand of literature implies a detrimental effect of organized labor on firm productivity and performance. Counter to the perception, we find reduced managerial opportunism and improved labor relationships induced by organized labor. Building on the evidence that good labor relations are conducive to better performance (Edmans, 2011; Welch and Yoon, 2021), we expect organized labor to improve firm productivity and performance through its disciplining effect on managerial opportunism.

To verify this hypothesis and examine the real effect of labor unions, we follow Faleye, Mehrotra, and Morck (2006) and estimate total factor productivity based on the following Cobb-Douglas production function:

$$Y_{i,t} = AL_{i,t}^{\alpha} K_{i,t}^{\beta}, \quad (6)$$

where  $Y_{i,t}$  is sales generated by firm  $i$  in year  $t$ ,  $L$  is the number of employees,  $K$  is net property, plant, and equipment, and  $A$ ,  $\alpha$ , and  $\beta$  are parameters. We take the log transformation on both sides of the equation to facilitate the regression analysis. Our measure of the firm-level total factor productivity is the resulting residual from estimating the log-transformed production function of Eq.(6). We then examine the effect of organized labor on total factor productivity conditional on restrained insider opportunism using the following model.

$$\begin{aligned} \text{Total Factor Productivity}_{i,t} = & \alpha_0 + \beta_1 \text{Union}_{i,t-1} \times \text{OpProfits}_{i,s,t-1} + \beta_2 \text{Union}_{i,t-1} + \\ & \beta_3 \text{OpProfits}_{i,s,t-1} + \gamma' X_{i,t-1} + \epsilon_{i,t} \end{aligned} \quad (7)$$

Column (1) of Table 11 reports the estimate of Eq.(7). First, the coefficient of *Union* is significantly negative, in line with the existing empirical evidence that labor unions could adversely affect firm productivity. Further, the interaction coefficient between *Union* and insider trading profitability is negative and statistically significant at the 1% level ( $t$ -stat = -2.59), implying that organized labor is effective at improving firm productivity through curbing managerial opportunism.

We also investigate the real effect of organized labor on firm performance from a shareholder's perspective. To do so, we replace the dependent variable in Eq.(7) with measures of market-based and accounting-based firm performance, namely, Tobin's  $Q$  (*Tobin's Q*) and return on assets (*Return on Assets*). Column (2) of Table 11 shows that the coefficient of *Union*  $\times$  *OpProfits* is -0.159 ( $t$ -stat = -3.41) in the *Tobin's Q* regression. The result remains qualitatively similar when we replace *Tobin's Q* with *Return on Assets* in Column (3). The interaction term coefficient is negative and statistically significant at the 1% level; the estimate is -0.015 ( $t$ -stat = -2.60). These results imply a value-enhancing effect of the organized labor attributable to its disciplining role in limiting managerial opportunism.

Collectively, our results suggest that unionized labor can benefit shareholders by disciplining management misbehavior and enhancing performance.

## 7. Conclusion

Prior research suggests that managerial integrity is the bedrock of corporate culture and has direct capital market implications. Our study examines how organized labor, an important internal stakeholder, affects opportunistic managerial behavior and shapes corporate culture. Our battery of tests shows a robust negative relationship between the presence of organized labor and different measures of managerial opportunism, including insider trading profitability, illegal insider trading, corporate accounting fraud, and stock options backdating. In economic terms, the stock return predictability of net insider purchases in unionized firms is at least 40% less than that in non-unionized firms in investment horizons between one and six months. The negative effect of organized labor is robust to various endogeneity tests, including an RDD exploiting close union elections and the DiD approach leveraging the cross-state adoption of RTW laws. Further cross-sectional analyses show that the organized-labor disciplining effect is most pronounced when managers have a strong incentive to maintain a good working relationship with their workers (the employee-management relationship channel) and when employees are incentivized to monitor managers (the organized labor monitoring channel), thereby reinforcing the causal relationship between organized labor and managerial opportunism.

We also find that stock market reactions around labor contract renewals decrease with insider trading profitability in unionized firms, consistent with an improved labor relationship induced by the disciplinary role of organized labor. While prior research mostly documents the deleterious effect of organized labor on productivity and profitability due to unions' rent-extracting behavior, we find that organized labor improves firm productivity and performance by mitigating opportunistic insider trading. This evidence is suggestive of the bright side of labor unions to shareholders. More broadly, this study identifies a novel shareholder benefit to firms that empower their employees.

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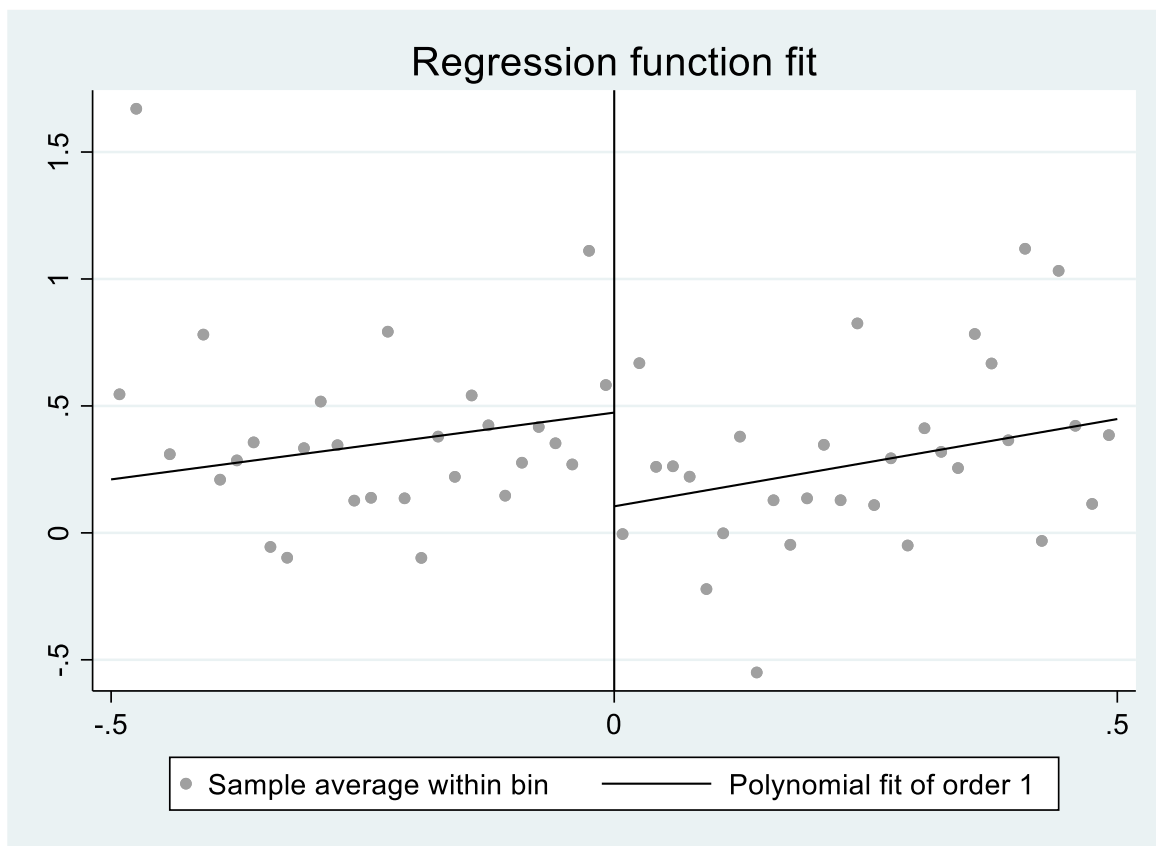
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**Figure 1**  
**Regression Discontinuity Plot of the Effect of Organized Labor on Opportunistic Insider Trading**

This figure illustrates the change in average trading returns earned by insiders around union elections over a three-year window using a fitted linear estimate. The  $x$ -axis is the distance (in voting shares) from the majority threshold by which a union election can pass. The firms with a voting share less (greater) than 50% failed (passed) the election and are plotted to the left (right). The dots represent the profitability of insider trading over a three-year window after union elections. These dots are distributed based on 60 equally spaced voting share bins (with each bin width of 1.7%).



**Table 1**  
**Descriptive Statistics**

This table reports descriptive statistics of key variables in our empirical analysis. The full sample consists of 414,737 insider transactions during the period 1996 – 2017. *OpProfits* is the Fama and French (2015) risk-adjusted abnormal returns over the window [1, 180] relative to the insider transaction date for corporate insiders. *Union* denotes firm-level unionization ratio. *Turnover* is daily trading volume. *Return* is prior stock return. *Analyst* is the number of analyst forecasts. *IO* is institutional ownership. *Leverage* is financial leverage. *Size* is firm size. *BM* is book-to-market ratio. All variables are defined in Appendix A. We report the mean (*Mean*), median (*Median*) and standard deviation (*StdDev*) of main variables for the full sample in Columns (1)-(3), as well as the number of observations (*NObs*), *Mean*, *Median*, and *StdDev* for those of the unionized firms in Columns (4)-(7) and non-unionized firms in Columns (8)-(11). Column (12) reports the *p*-values of *t*-tests of the mean difference, whereas Column (13) presents those of Wilcoxon tests of the median difference between unionized and non-unionized variables. The continuous variables are winsorized at the top and bottom 1% of the sample distribution.

Variable	Full Sample			Unionized Firms			non-unionized Firms			<i>p</i> -value			
	Mean	Median	StdDev	NObs	Mean	Median	StdDev	NObs	Mean	Median	StdDev	(5)-(9)	(6)-(10)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
<i>Collective Labor Voice</i>													
Union	0.032	0.000	0.110	66,190	0.202	0.133	0.204	348,547	0.000	0.000	0.000	0.000	0.000
<i>Inside Trading Variable</i>													
OpProfits	0.544	0.353	1.018	66,190	0.470	0.265	1.048	348,547	0.558	0.368	1.012	0.000	0.000
<i>Firm-Specific Control Variables</i>													
Turnover	0.975	0.749	0.795	66,190	0.766	0.622	0.580	348,547	1.014	0.779	0.824	0.000	0.000
Return	0.218	0.163	0.485	66,190	0.151	0.125	0.382	348,547	0.231	0.173	0.501	0.000	0.000
Analyst	9.843	7.000	8.258	66,190	9.454	8.000	7.037	348,547	9.917	7.000	8.468	0.000	0.000
IO	0.626	0.673	0.252	66,190	0.698	0.756	0.221	348,547	0.612	0.655	0.255	0.000	0.000
Leverage	0.163	0.120	0.169	66,190	0.269	0.258	0.162	348,547	0.142	0.080	0.162	0.000	0.000
Size	13.954	13.769	1.792	66,190	14.327	14.303	1.656	348,547	13.883	13.670	1.809	0.000	0.000
BM	0.418	0.342	0.306	66,190	0.506	0.433	0.323	348,547	0.401	0.326	0.300	0.000	0.000

**Table 2**  
**Effects of Organized Labor on Insider Trading Opportunism**

Panel A of this table presents the regression results of the following baseline equation:

$$Opportunism_{i,s,t} = \alpha_0 + \beta_1 OrganizedLabor_{i,t-1} + \beta_2 Turnover_{i,t-1} + \beta_3 Return_{i,t-1} + \beta_4 Analyst_{i,t-1} + \beta_5 IO_{i,t-1} + \beta_6 Leverage_{i,t-1} + \beta_7 Size_{i,t-1} + \beta_8 BM_{i,t-1} + \epsilon_{i,t}$$

where *Opportunism* represents the 180-day risk-adjusted abnormal returns (*OpProfits*) earned by insiders from their trading. *OrganizedLabor* is alternatively measured by the firm's unionization ratio (*Union*) and a binary variable (*UDummy*) for whether the firm is unionized. The list of control variables includes *Turnover*, *Return*, *Analyst*, *IO*, *Leverage*, *Size*, and *BM*. Industry and year fixed effects are also included. The regressions are estimated at the insider trade level. All variables are defined in Appendix A. The continuous variables are winsorized at the top and bottom 1% of the sample distribution. The *t*-statistics in parentheses are based on heteroskedasticity-consistent and firm-level clustered standard errors. The symbols \*\*\*, \*\*, and \* denote the statistical significance at 1%, 5%, and 10% levels, respectively. NObs is the number of observations. The sample period is from 1996 to 2017.

Variable	<i>Opportunism = OpProfits</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
Union	-0.243*** (-2.84)		-0.208*** (-2.60)		-0.159** (-2.23)	
UDummy		-0.089*** (-5.63)		-0.026** (-2.23)		-0.023** (-2.08)
Turnover			-0.019*** (-2.78)	-0.014*** (-3.34)	-0.024*** (-3.63)	-0.018*** (-4.33)
Return			0.005*** (36.54)	0.004*** (40.74)	0.005*** (35.71)	0.004*** (40.46)
Analyst			-0.002* (-1.90)	-0.003*** (-4.31)	-0.001 (-1.26)	-0.002*** (-3.40)
IO			0.200*** (7.39)	0.201*** (10.02)	0.196*** (7.92)	0.195*** (10.53)
Leverage			-0.398*** (-10.84)	-0.414*** (-15.23)	-0.403*** (-11.38)	-0.417*** (-15.90)
Size			0.065*** (11.32)	0.071*** (17.48)	0.063*** (11.66)	0.069*** (18.09)
BM			-0.184*** (-8.28)	-0.198*** (-8.95)	-0.173*** (-7.95)	-0.183*** (-8.62)
NObs	414,737	414,737	414,737	414,737	414,737	414,737
Adj. $R^2$	0.001	0.001	0.318	0.316	0.342	0.34
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry $\times$ Year FE	No	No	No	No	Yes	Yes

**Table 3**

**Return Predictability of Insider Trades in Unionized Versus Non-Unionized Firms**

This table reports the regression results of future stock returns over the one-month, three-month and six-month horizon on the interaction term between the organized labor variable (*OrganizedLabor*) and insider net purchase ratio (*NPR*) as specified in the following equation:

$$\text{Future Return}_{i,t+1 \rightarrow t+k} = \alpha_0 + \beta_1 \text{OrganizedLabor}_{i,t} \times \text{NPR}_{i,t} + \beta_2 \text{OrganizedLabor}_{i,t} + \beta_3 \text{NPR}_{i,t} + \gamma' X_{i,t} + \epsilon_{i,t}$$

where future stock returns, *Future Return*, are measured by raw stock returns in Columns (1)-(3), market-adjusted excess returns in Columns (4)-(6) and industry-adjusted excess returns in Columns (7)-(9). *NPR* is computed as the number of insider buys less the number of insider sales in the previous six months, scaled by the total number of insider trades. *OrganizedLabor* is alternatively measured by the firm's unionization ratio (*Union*) in Panel A and a binary variable, *UDummy*, in Panel B. The observations are at monthly intervals. All variables are defined in Appendix A. The continuous variables are winsorized at the top and bottom 1% of the sample distribution. The *t*-statistics in parentheses are based on heteroskedasticity-consistent and firm-level clustered standard errors. The symbols \*\*\*, \*\*, and \* denote the significance at 1%, 5%, and 10% levels, respectively. NObs is the number of observations. The sample period is from 1996 to 2017.

<b>Panel A: Interaction between Insider Net Purchase Ratio (NPR) and Union</b>									
Variable	Raw Returns			Market-Adjusted Returns			Industry-Adjusted Returns		
	1-Month (1)	3-Month (2)	6-Month (3)	1-Month (4)	3-Month (5)	6-Month (6)	1-Month (7)	3-Month (8)	6-Month (9)
Union×NPR	-0.006*** (-2.79)	-0.023*** (-3.69)	-0.046*** (-4.09)	-0.006*** (-2.83)	-0.023*** (-3.81)	-0.047*** (-4.22)	-0.003 (-1.44)	-0.015*** (-4.08)	-0.029*** (-5.65)
NPR	0.005*** (12.12)	0.011*** (10.80)	0.019*** (9.94)	0.004*** (10.33)	0.009*** (9.00)	0.015*** (8.14)	0.003*** (8.09)	0.007*** (11.33)	0.011*** (12.79)
Union	-0.005** (-2.16)	-0.015** (-2.29)	-0.028** (-2.34)	-0.004* (-1.76)	-0.014** (-2.12)	-0.028** (-2.31)	-0.004* (-1.72)	-0.013*** (-3.66)	-0.026*** (-4.93)
NObs	337,706	337,706	337,706	337,706	337,706	337,706	337,706	337,706	337,706
Adj. <i>R</i> <sup>2</sup>	0.015	0.056	0.072	0.007	0.021	0.036	0.005	0.014	0.021
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

**Table 3 – Continued**  
**Return Predictability of Insider Trades in Unionized Versus Non-Unionized Firms**

Panel B: Interaction between Insider Net Purchase Ratio (NPR) and <i>UDummy</i>									
Variable	Raw Returns			Market-Adjusted Returns			Industry-Adjusted Returns		
	1-Month	3-Month	6-Month	1-Month	3-Month	6-Month	1-Month	3-Month	6-Month
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
UDummy × NPR	-0.002*** (-3.37)	-0.008*** (-3.82)	-0.015*** (-4.03)	-0.002*** (-3.22)	-0.008*** (-3.90)	-0.015*** (-4.23)	-0.002** (-2.33)	-0.005*** (-2.91)	-0.010*** (-3.07)
NPR	0.005*** (11.92)	0.012*** (10.63)	0.020*** (9.79)	0.004*** (10.19)	0.010*** (8.94)	0.016*** (8.12)	0.003*** (8.21)	0.007*** (7.11)	0.012*** (6.16)
UDummy	-0.001** (-2.10)	-0.004* (-1.89)	-0.007** (-2.01)	-0.001* (-1.72)	-0.004* (-1.87)	-0.008** (-2.07)	-0.001* (-1.75)	-0.004** (-1.97)	-0.007** (-2.09)
NObs	337,706	337,706	337,706	337,706	337,706	337,706	337,706	337,706	337,706
Adj. $R^2$	0.015	0.056	0.072	0.007	0.021	0.036	0.005	0.014	0.021
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

**Table 4**  
**Additional Tests**

This table performs a series of robustness checks on the negative effect of organized labor on insider trading profitability. In Columns (1)-(3), we use alternative opportunistic insider trading variables.  $OpProfits_{20}$  is the 20-day risk-adjusted abnormal returns earned by insiders from their trading.  $OpTrades$  is the natural log of one plus the number of opportunistic insider trades made by all insiders in a given year, where opportunistic trades are transactions made by nonroutine traders based on [Cohen, Malloy, and Pomorski \(2012\)](#). *Quintile 5 Insiders* is the fraction of insiders whose all past pre-QEA profits are ranked in top quintile (quintile 5) following [Ali and Hirshleifer's \(2017\)](#) methodology in a Tobit regression. In Column (4), we expand the baseline regression model by including two board characteristic variables, board size (*BoardSize*) and board independence (*BoardInd*). In Column (5), we replace *Union* with a new unionization variable,  $Union_{Ind}$ , which is computed as the product of union members in the firm's industry and the firm's labor intensity, where labor intensity refers to the total number of employees scaled by total assets. The list of unreported control variables includes *Turnover*, *Return*, *Analyst*, *IO*, *Leverage*, *Size*, and *BM*. Industry and year fixed effects are also included. The regressions are estimated at the firm level in Columns (2)-(3) and at the insider trade level for the remaining columns. All variables are defined in Appendix A. The continuous variables are winsorized at the top and bottom 1% of the sample distribution. The *t*-statistics in parentheses are based on heteroskedasticity-consistent and firm-level clustered standard errors. The symbols \*\*\*, \*\*, and \* denote the statistical significance at 1%, 5%, and 10% levels, respectively. NObs is the number of observations. The sample period is from 1996 to 2017.

Variable	<i>Alternative Opportunistic Trading Measures</i>			<i>Opportunism = OpProfits</i>	
	$OpProfits_{20}$	$OpTrades$	Quintile 5 Insiders	Additional Controls	$Union_{Ind}$
	(1)	(2)	(3)	(4)	(5)
Union	-0.217*** (-2.58)	-0.219** (-2.24)	-0.053** (-2.05)	-0.217** (-2.31)	
$Union_{Ind}$					-0.271*** (-2.72)
BoardSize				-0.011 (-0.32)	
BoardInd				-0.299*** (-5.59)	
Turnover	-0.005 (-0.70)	0.136*** (10.04)	0.020*** (5.86)	-0.019** (-2.23)	-0.015** (-2.18)
Return	0.005*** (32.15)	0.346*** (24.88)	0.015*** (2.74)	0.005*** (25.60)	0.005*** (38.70)
Analyst	-0.004*** (-2.76)	0.001 (0.26)	0.003*** (4.19)	0.000 (0.31)	-0.002 (-1.40)
IO	0.234*** (8.34)	0.180*** (3.97)	0.013 (0.97)	0.157*** (3.96)	0.223*** (8.66)
Leverage	-0.404*** (-10.47)	-0.203*** (-3.56)	-0.000 (-0.03)	-0.235*** (-5.36)	-0.417*** (-11.87)
Size	0.070*** (11.83)	0.159*** (15.19)	-0.013*** (-4.66)	0.046*** (6.18)	0.062*** (11.40)
BM	-0.191*** (-8.22)	-0.203*** (-7.63)	-0.027*** (-3.10)	-0.179*** (-5.92)	-0.180*** (-8.49)
NObs	414,737	33,515	34,382	224,907	450,649
Adj./Pseudo $R^2$	0.262	0.189	0.020	0.387	0.302
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	No

**Table 5**  
**Effects of Organized Labor on Alternative Opportunism Measures**

This table presents the regression results of the following equation:

$$Opportunism_{i,s,t} = \alpha_0 + \beta_1 Union_{i,t-1} + \beta_2 Turnover_{i,t-1} + \beta_3 Return_{i,t-1} + \beta_4 Analyst_{i,t-1} + \beta_5 IO_{i,t-1} + \beta_6 Leverage_{i,t-1} + \beta_7 Size_{i,t-1} + \beta_8 BM_{i,t-1} + \epsilon_{i,t}$$

where *Opportunism* represents three alternative proxies for managerial opportunism: *Illegal Insider Trades*, *Financial Fraud*, and *Option Backdating*. *Illegal Insider Trades* is the number of illegal stock trades by corporate insiders reported in a given year based on Ahern's (2017) data. *Financial Fraud* is an indicator variable that equals one if a firm appears in any of the three financial fraud databases in a given year and zero otherwise. These databases are (1) Accounting and Auditing Enforcement Releases (AAER), (2) Stanford Securities Class Action Clearinghouse (SSCAC), and (3) US Government Accountability Office (GAO) restatements by Hennes, Leone, and Miller (2008). *Option Backdating* is an indicator variable that equals one if the strike price of at least one insider's option grant in a given year is the lowest price of the month, and zero otherwise. *Union* is a firm's unionization rate. The list of control variables includes *Turnover*, *Return*, *Analyst*, *IO*, *Leverage*, *Size*, and *BM*. Industry and year fixed effects are also included. The regressions in this table are estimated at the firm level. All variables are defined in Appendix A. The continuous variables are winsorized at the top and bottom 1% of the sample distribution. The *t*-statistics in parentheses are based on heteroskedasticity-consistent and firm-level clustered standard errors. The symbols \*\*\*, \*\*, and \* denote the statistical significance at 1%, 5%, and 10% levels, respectively. NObs is the number of observations. The sample period is from 1996 to 2017.

Variable	Illegal Insider Trades (1)	Financial Fraud (2)	Option Backdating (3)
Union	-1.594** (-2.05)	-0.878** (-2.00)	-0.455* (-1.65)
Turnover	0.450*** (8.99)	0.633*** (15.82)	0.024 (0.65)
Return	0.028 (0.24)	-0.236*** (-2.80)	-0.010 (-0.22)
Analyst	0.043*** (4.05)	-0.015* (-1.85)	0.020*** (2.84)
IO	0.062 (0.25)	-0.258 (-1.56)	-0.351** (-2.43)
Leverage	0.280 (0.80)	-0.148 (-0.67)	-0.054 (-0.32)
Size	0.268*** (5.47)	0.185*** (4.80)	-0.249*** (-8.14)
BM	-0.024 (-0.12)	0.049 (0.39)	-0.122* (-1.88)
NObs	11,858	33,454	33,527
Adj./Pseudo $R^2$	0.101	0.101	0.236
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

**Table 6**  
**Opportunistic Insider Trading Following the Passage of Labor Union Elections**

Panel A of this table reports the pre-existing differences in the set of observable firm-level characteristics, including stock turnover (*Turnover*), prior stock return (*Return*), the number of analyst forecasts (*Analyst*), institutional ownership (*IO*), financial leverage (*Leverage*), firm size (*Size*), and book-to-market ratio (*BM*) between firms that passed the union election and those that did not pass by a small margin. The margin is 5% around the majority threshold. Panel B reports the RDD estimations from the following local linear regression using data-driven optimal bandwidth:

$$Opportunism_{i,s,t+N} = \alpha_l + \tau Pass_{i,t} + \beta_l (Vote_{i,t} - c) + (\beta_r - \beta_l) \times Pass_{i,t} \times (Vote_{i,t} - c) + \gamma' X_{i,t-1} + \epsilon_{i,t}$$

where *Opportunism* represents the 180-day risk-adjusted abnormal returns (*OpProfits*) earned by insiders from their trading. *Pass* is a dummy variable which equals one if the firm passes the union election and zero if otherwise. The list of control variables,  $X_{i,t-1}$ , includes *Turnover*, *Return*, *Analyst*, *IO*, *Leverage*, *Size*, and *BM* in Columns (4)-(6). Industry and year fixed effects are also included. The regressions are estimated at the insider trade level. The symbols \*\*\*, \*\*, and \* denote the statistical significance at 1%, 5%, and 10% levels, respectively. NObs is the number of observations. The sample period is from 1996 to 2017.

<b>Panel A: Pre-Existing Differences in Baseline Covariates</b>						
Variable	Unionized (1)	Non- Unionized (2)	Difference (3)	<i>Opportunism = OpProfits</i>		
				1-year (1)	2-year (2)	3-year (3)
Turnover	0.816	0.700	0.117			
Return	0.174	0.263	-0.089			
Analyst	11.988	9.971	2.017			
IO	0.705	0.636	0.070			
Leverage	0.295	0.267	0.028			
Size	14.635	14.566	0.068			
BM	0.633	0.429	0.204			
<b>Panel B: Insider Trading Profits Over One to Three Years Following the Passage of a Labor Union Election</b>						
Variable	1-year (1)	2-year (2)	3-year (3)	1-year (4)	2-year (5)	3-year (6)
Pass	-0.856*** (-2.83)	-0.633*** (-2.62)	-0.549** (-2.23)	-0.852*** (-2.72)	-0.410* (-1.65)	-0.554** (-2.24)
Turnover				-0.286** (-2.51)	-0.303*** (-5.01)	-0.358*** (-6.10)
Return				0.002* (1.68)	0.004*** (4.87)	0.005*** (7.07)
Analyst				0.044*** (3.67)	0.021*** (3.13)	0.010* (1.73)
IO				0.314 (1.34)	-0.095 (-0.94)	0.278*** (2.86)
Leverage				1.449*** (4.00)	1.128*** (4.96)	0.380 (1.58)
Size				0.049*** (3.36)	0.050*** (5.38)	0.039*** (4.63)
BM				-0.380 (-1.61)	-0.497*** (-4.32)	-0.348*** (-3.23)
NObs	996	1,522	1,708	996	1,522	1,708
Adj. $R^2$	0.534	0.501	0.493	0.577	0.555	0.548
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes



**Table 7**  
**Difference in Differences Analyses: State Right-to-Work Laws**

This table reports the difference-in-differences (DiD) regression results of opportunistic insider trading activity on the RTW treatment dummy variable and its interaction with an indicator of periods after the adoption of the RTW law, along with other control variables. The regression model is as below:

$$Opportunism_{i,s,t} = \alpha_0 + \beta_1 RTW_{i,t} \times Post_{i,t} + \beta_2 RTW_{i,t} + \beta_3 Post_{i,t} + \gamma' X_{i,t-1} + \epsilon_{i,t}$$

where *Opportunism* represents the 180-day risk-adjusted abnormal returns (*OpProfits*) earned by insiders from their trading. *RTW* is an indicator which equals one if a firm is located in the states that adopted the RTW law during our sample period and zero otherwise. *Post* is a time indicator that takes the value of one if the firm-year observation is after the adoption of the RTW law and zero if otherwise. Columns (1) and (2) are the regression results without controlling for other covariates, whereas Columns (3) and (4) include the full set of controls. The vector of unreported control variables,  $X_{i,t-1}$ , includes *Turnover*, *Return*, *Analyst*, *IO*, *Leverage*, *Size*, and *BM*. Industry and year fixed effects are also included. Panel A reports the mean values of control variables for treatment and control firms, the difference in mean values, and the *p*-values of the *t*-tests of mean differences. Panel B presents the DiD regression results where regressions are estimated at the insider trade level. All variables are defined in Appendix A. The continuous variables are winsorized at the top and bottom 1% of the sample distribution. The *t*-statistics in parentheses are based on heteroskedasticity-consistent and firm-level clustered standard errors. The symbols \*\*\*, \*\*, and \* denote the significance at 1%, 5%, and 10% levels, respectively. NObs is the number of observations. The sample period is from 1996 to 2017.

<b>Panel A: Comparison between Treatment and Control Samples</b>				
Variable	Treatment	Control	Difference	<i>p</i> -value
	(1)	(2)	(3)	(4)
Turnover	0.716	0.839	-0.124	0.101
Return	0.160	0.154	0.006	0.926
Analyst	8.675	8.993	-0.318	0.730
IO	0.678	0.716	-0.038	0.230
Leverage	0.198	0.198	0.000	0.993
Size	13.883	13.846	0.037	0.866
BM	0.576	0.573	0.003	0.960
<b>Panel B: Difference-in-Differences Regression Estimates</b>				
Variable	<i>Opportunism = OpProfits</i>			
	(1)	(2)	(3)	(4)
RTW × Post		0.062*** (3.74)		0.045*** (2.74)
RTW	0.007 (0.93)	-0.024* (-1.68)	0.008 (0.88)	-0.015 (-0.94)
Post	-0.736*** (-6.35)	-0.756*** (-6.53)	-0.732*** (-6.52)	-0.748*** (-6.66)
NObs	14,445	14,445	14,222	14,222
Adj. <i>R</i> <sup>2</sup>	0.290	0.290	0.334	0.334
Controls	No	No	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

**Table 8**  
**Economic Channels**

This table reports the effects of organized labor on insider trading conditional on managers' incentive of maintaining a good labor relationship (the Employee-Management Relationship Channel) and the labor monitoring efforts (the Organized Labor Monitoring Channel):

$$Opportunism_{i,s,t} = \alpha_0 + \beta_1 Union_{i,t-1} \times Channel_{i,t-1} + \beta_2 Channel_{i,t-1} + \beta_3 Union_{i,t-1} + \gamma' X_{i,t-1} + \epsilon_{i,t}$$

where *Opportunism* represents the 180-day risk-adjusted abnormal returns (*OpProfits*) earned by insiders from their trading. *Channel* denotes two different sets of variables capturing the labor relationship and monitoring mechanisms. *WDL* is an indicator variable that takes the value of one if a firm is headquartered in the states adopting all three distinct WDLs to protect workers against unjust dismissals and zero if the firm is in a state that passed one WDL or not at all. *Low UI Benefits* is the natural log of the yearly average of weekly unemployment benefits paid by a given state, multiplied by (-1). *SG&A per employee* is the natural log of a firm's selling, general and administrative expenses scaled by the number of employees. *#Violations* is the natural log of one plus the number of a firm's labor law violations reported in Violation Tracker database. *Pension Contribution* is the abnormal pension contribution computed as the annual employer contribution minus the expected contribution reported in the previous year's financial statement, scaled by the lagged value of total assets. The unreported control variables (*X*) are *Turnover*, *Return*, *Analyst*, *IO*, *Leverage*, *Size*, and *BM*. Industry and year fixed effects are also included. The regressions are estimated at the insider transaction level. All variables are defined in Appendix A. The continuous variables are winsorized at the top and bottom 1% of the sample distribution. The *t*-statistics in parentheses are based on heteroskedasticity-consistent and firm-level clustered standard errors. The symbols \*\*\*, \*\*, and \* denote the significance at 1%, 5%, and 10% levels, respectively. NObs is the number of observations. The sample period is from 1996 to 2017

Variable	<i>Opportunism = OpProfits</i>				
	Employee-Management Relationship		Organized Labor Monitoring		
	(1)	(2)	(3)	(4)	(5)
Union × WDL	-0.216*** (-3.81)				
WDL	0.037*** (8.63)				
Union × Low UI Benefits		-0.695*** (-3.73)			
Low UI Benefits		0.081*** (3.09)			
Union × SG&A per employee			0.193** (1.97)		
SG&A per employee			-0.007 (-0.95)		
Union × #Violations				-0.033*** (-3.00)	
#Violations				-0.006*** (-2.69)	
Union × Pension Contribution					0.118** (2.54)
Pension Contribution					-0.020*** (-2.58)
Union	-0.124*** (-3.07)	-4.091*** (-3.85)	-2.232** (-2.15)	-0.248** (-2.57)	-0.010 (-0.71)
NObs	237,831	412,785	312,322	325,451	156,357
Adj. <i>R</i> <sup>2</sup>	0.364	0.319	0.344	0.504	0.300
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	45 Yes	Yes	Yes	Yes

**Table 9**  
**Labor Unions' External Resources**

This table reports the regression results on how unionized labor can exert its influence on managerial opportunism in the following regression:

$$Opportunism_{i,s,t} = \alpha_0 + \beta_1 Union_{i,t-1} \times ExternalResource_{i,t-1} + \beta_2 ExternalResource_{i,t-1} + \beta_3 Union_{i,t-1} + \gamma' X_{i,t-1} + \epsilon_{i,t}$$

where *Opportunism* represents the 180-day risk-adjusted abnormal returns (*OpProfits*) earned by insiders from their trading. *ExternalResource* denotes three potential tactics that labor unions can mobilize to discourage unethical managerial misconduct through its external networks. These include accessibility to NLRB offices, information exchange with industry/local unionized peers, and union shareholder activism. *NLRB* is an indicator variable that takes the value of one if the company's headquarter is located within 100 miles from NLRB representative offices, and zero otherwise. *#Industry Peers* is the natural log of the number of unionized peer firms in a company's two-digit SIC industry. *#Local Peers* is the natural log of the number of unionized peers within a distance of 100 miles from a company's headquarters. *Union Shareholder Activism* is an indicator variable which equals one if a union pension fund initiates a shareholder proposal in the previous year, and zero if otherwise. The unreported control variables (*X*) are *Turnover*, *Return*, *Analyst*, *IO*, *Leverage*, *Size*, and *BM*. Industry and year fixed effects are also included. The regressions are estimated at the insider transaction level. All variables are defined in Appendix A. The continuous variables are winsorized at the top and bottom 1% of the sample distribution. The *t*-statistics in parentheses are based on heteroskedasticity-consistent and firm-level clustered standard errors. The symbols \*\*\*, \*\*, and \* denote the significance at 1%, 5%, and 10% levels, respectively. NObs is the number of observations. The sample period is from 1996 to 2017.

Variable	<i>Opportunism = OpProfits</i>			
	NLRB Accessibility	Peer Information Exchange		Union Fund Activism
	(1)	(2)	(3)	(4)
Union × NLRB	-0.229*			
	(-1.93)			
NLRB	-0.005			
	(-0.42)			
Union × #Industry Peers		-0.107**		
		(-2.21)		
#Industry Peers		0.007		
		(1.27)		
Union × #Local Peers			-0.079**	
			(-1.98)	
#Local Peers			0.013***	
			(2.62)	
Union × Union Shareholder Activism				-0.178**
				(-2.24)
Union Shareholder Activism				0.045*
				(1.94)
Union	-0.058	0.034	0.157	0.011
	(-0.76)	(0.25)	(0.90)	(0.33)
NObs	414,706	393,502	412,334	106,291
Adj. <i>R</i> <sup>2</sup>	0.318	0.334	0.331	0.648
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

**Table 10**

**Managerial Opportunism and Market Reactions Around Union Contract Renewals**

This table presents the regression results of labor relations, revealed by stock market reactions around union contract renewals, on opportunistic insider trading in the unionized firms using the following regression model:

$$Market\ Reaction_{i,t} = \alpha_0 + \beta_1 OpProfits_{i,s,t} + \gamma' X_{i,t-1} + \epsilon_{i,t}$$

where *Market Reaction* is alternatively measured by the cumulative (abnormal) stock returns over the 11- and 21-day windows surrounding the union contract expiration dates. The daily abnormal return is computed as a firm's raw return minus the expected return, where expected return is estimated based on the market or Fama-French five-factor model in the estimation window from day -250 to day -30. *OpProfits* represents the 180-day risk-adjusted abnormal returns (*OpProfits*) insiders earn from their trading one year prior to the labor contract expiry date. The control variables (*X*) are *Turnover*, *Return*, *Analyst*, *IO*, *Leverage*, *Size*, and *BM*. Industry and year fixed effects are also included. The regressions are estimated at the insider transaction level. All variables are defined in Appendix A. The continuous variables are winsorized at the top and bottom 1% of the sample distribution. The *t*-statistics in parentheses are based on heteroskedasticity-consistent and firm-level clustered standard errors. The symbols \*\*\*, \*\*, and \* denote the significance at 1%, 5%, and 10% levels, respectively. NObs is the number of observations. The sample period is from 1996 to 2017.

Variable	CAR[-5,+5]			CAR[-10,+10]		
	Raw Return	Market Model	FF5 Model	Raw Return	Market Model	FF5 Model
	(1)	(2)	(3)	(4)	(5)	(6)
OpProfits	-0.004** (-2.18)	-0.005*** (-3.11)	-0.003* (-1.66)	-0.009*** (-3.97)	-0.011*** (-3.99)	-0.004* (-1.75)
Turnover	0.006 (0.75)	0.039*** (5.11)	0.030*** (2.98)	0.026*** (2.62)	0.053*** (4.36)	0.030** (2.34)
Return	0.000*** (5.57)	0.000*** (6.54)	0.000*** (6.64)	0.000*** (4.86)	0.000*** (4.66)	0.001*** (5.33)
Analyst	-0.002*** (-5.43)	-0.002*** (-5.17)	-0.002*** (-5.76)	-0.003*** (-4.70)	-0.002*** (-3.58)	-0.002*** (-3.85)
IO	0.056*** (4.29)	0.080*** (6.61)	0.071*** (5.44)	-0.116*** (-6.75)	-0.064*** (-3.52)	-0.071*** (-3.97)
Leverage	-0.021 (-1.56)	-0.047*** (-3.84)	-0.085*** (-6.03)	-0.065*** (-3.37)	-0.071*** (-3.39)	-0.123*** (-5.63)
Size	0.023*** (8.83)	0.021*** (9.68)	0.017*** (7.42)	0.024*** (7.23)	0.027*** (7.74)	0.022*** (6.57)
BM	0.008 (0.94)	-0.004 (-0.50)	-0.007 (-0.88)	0.020* (1.77)	0.046*** (3.89)	0.051*** (4.48)
NObs	2,257	2,257	2,257	2,257	2,257	2,257
Adj. <i>R</i> <sup>2</sup>	0.313	0.480	0.461	0.421	0.558	0.557
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

**Table 11**  
**Effects of Organized Labor on Firm Productivity and Performance**

This table reports the regression results of how organized labor affects firm performance through its restricting effect on opportunistic insider trading based on the following equation:

$$\text{Firm Performance}_{i,t+1} = \alpha_0 + \beta_1 \text{Union}_{i,t} \times \text{Opportunism}_{i,s,t-1} + \beta_2 \text{Opportunism}_{i,s,t} + \beta_3 \text{Union}_{i,t-1} + \gamma' X_{i,t-1} + \epsilon_{i,t+1}$$

where *Opportunism* represents the 180-day risk-adjusted abnormal returns (*OpProfits*) earned by insiders from their trading. We adopt three measures of firm performance as follows: Total Factor Productivity, Tobin's Q, and Return on Assets. The control variables (X) are *Turnover*, *Return*, *Analyst*, *IO*, *Leverage*, *Size*, and *BM*. Industry and year fixed effects are also included. The regressions are estimated at the insider transaction level. All variables are defined in Appendix A. The continuous variables are winsorized at the top and bottom 1% of the sample distribution. The t-statistics in parentheses are based on heteroskedasticity-consistent and firm-level clustered standard errors. The symbols \*\*\*, \*\*, and \* denote the significance at 1%, 5%, and 10% levels, respectively. NObs is the number of observations. The sample period is from 1996 to 2017.

Variable	Total Factor Productivity (1)	Tobin's Q (2)	Return on Assets (3)
Union × OpProfits	-0.017*** (-2.59)	-0.159*** (-3.41)	-0.015*** (-2.60)
Union	-0.038*** (-4.07)	-0.540*** (-5.43)	0.022 (1.53)
OpProfits	0.006*** (4.26)	-0.048*** (-4.22)	0.004*** (2.88)
Turnover	0.120*** (72.17)	0.075** (2.46)	-0.025*** (-8.27)
Return	0.002*** (59.46)	0.010*** (30.38)	0.001*** (16.58)
Analyst	0.004*** (21.01)	0.030*** (5.66)	-0.002*** (-3.12)
IO	-0.082*** (-15.39)	-0.312*** (-2.91)	0.099*** (8.63)
Leverage	-0.477*** (-65.35)	-2.030*** (-17.72)	-0.022* (-1.74)
Size	0.003*** (3.00)	-0.023 (-1.10)	0.025*** (10.27)
BM	-0.161*** (-38.69)	-2.347*** (-31.26)	-0.055*** (-7.86)
NObs	411,276	414,632	414,617
Adj. R <sup>2</sup>	0.097	0.435	0.224
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Variable	Definition and Data Source
<b>Measures of Insider Trading</b>	
OpProfits	The risk-adjusted abnormal stock returns estimated from <a href="#">Fama and French's (2015)</a> five-factor model over the 180 trading days following the insider transaction date, expressed in percentage. (Thomson Reuters insider filings; CSRPs)
OpProfits <sub>20</sub>	The risk-adjusted abnormal stock returns estimated from <a href="#">Fama and French's (2015)</a> five-factor model over the 20 trading days following the insider transaction date, expressed in percentage. (Thomson Reuters insider filings; CSRPs)
OpTrades	The natural log of one plus the number of opportunistic insider trades made by all insiders in a given year, where opportunistic trades are transactions made by nonroutine traders; the definition of routine traders follows <a href="#">Cohen, Malloy, and Pomorski (2012)</a> . (Thomson Reuters insider filings)
Quintile 5 Insiders	Fraction of insiders whose all past pre-QEA trading profits are ranked in top quintile (quintile 5) following <a href="#">Ali and Hirshleifer's (2017)</a> method. (Thomson Reuters insider filings)
NPR	The number of insider buys less the number of insider sales in the previous six months, scaled by the total number of insider trades. (Thomson Reuters insider filings)
<b>Alternative Opportunism Measures</b>	
Illegal Insider Trades	The number of illegal insider cases in a given firm-year. ( <a href="#">Ahern, 2017</a> )
Financial Fraud	A dummy variable that equals one if the firm appears in any of the three financial fraud databases in a given year and zero otherwise. These databases include (1) AAER, (2) US GAO and (3) SSCAC. ( <a href="#">Dechow, Ge, Larson, and Sloan (2011)</a> , <a href="#">Hennes, Leone, and Miller (2008)</a> and SSCAC)
Option Backdating	A dummy variable that equals one if the strike price of at least one insider's option grant in a given year is the lowest price of the month, and zero otherwise. (Thomson Reuter's Insider Filing Data Files)
<b>Proxies for Organized Labor</b>	
Union	The proportion of unionized employees divided by the total number of employees at the end of previous year. (SEC 10-K filings)
UDummy	A dummy variable that takes a value of one if the firm is unionized and zero if otherwise. (SEC 10-K filings)
Union <sub>Ind</sub>	Product of the proportion of union members in the firm's industry and the firm's labor intensity, where labor intensity refers to the total number of employees scaled by total assets. (Union membership and coverage)
<b>Identification Strategy Variables</b>	
Pass	A dummy variable that takes the value of one if the firm narrowly passes the union election and zero if otherwise. (National Labor Relations Board)
RTW	A dummy variable that takes the value of one if the firm is located in the states that adopted the RTW law during our sample period and zero if otherwise. (National Conference of State Legislatures)
Post	A dummy variable that takes the value of one if the observation is in the year after the adoption of the RTW law.
<b>Channel Variables</b>	
WDL	A dummy variable that takes the value of one if the firm is located in a state adopting all three WDLs to protect workers against unjust dismissals and zero if the firm is in a state that passed only one WDL or not at all. ( <a href="#">Bai, Fairhurst, and Serfling, 2020</a> )
Low UI Benefits	The natural logarithm of the yearly average of weekly unemployment insurance benefits paid by a given state, multiplied by (-1). (US Department of Labor)

**Appendix A - Continued**  
**Variable Definition and Data Source**

<b>Variable</b>	<b>Definition and Data Source</b>
SG&A per employee	The natural log of the firm's selling, general and administrative expenses scaled by the number of employees. (Compustat)
#Violations	The natural log of one plus the number of labor-related regulatory violations. (Violation Tracker)
Pension Contribution	The annual employer pension contribution minus the expected contribution reported in the prior year's financial statement, scaled by the lagged book value of assets and multiplied by 100. (Compustat)
<b>Union Tactic Variables</b>	
NLRB	A dummy variable that takes the value of one if the firm is located within 100 miles from the NLRB representative offices, and zero otherwise. (NLRB, NBER)
#Industry Peers	The natural log of the number of two-digit SIC industry peers. (Compustat)
#Local Peers	The natural log of the number of unionized peers within a distance of 100 miles from a company's headquarters. (SEC 10-K filings, Compustat, and NBER)
Union Shareholder Activism	A dummy variable that takes the value of one if the union pension fund initiates a shareholder proposal in the previous year and zero if otherwise. (ISS)
<b>Economic Consequence Variables</b>	
Total Factor Productivity	The residuals from estimating the log transformed Cobb-Douglas production function: $Y_{i,t} = AL_{i,t}^\beta K_{i,t}^\alpha$ , where $L$ is the number of employees, and $K$ is net property, plant and equipment. (Compustat)
Tobin's Q	The sum of market value of equity and book value of debt divided by total assets. (Compustat)
Return on Assets	Earnings before interest and tax scaled by total assets. (Compustat)
<b>Control Variables</b>	
Turnover	Daily trading volume divided by the number of shares outstanding across all trading days in the previous year. (CRSP)
Return	Buy-and-hold stock return over the 240-trading day period ending one day before the first insider transaction in a given year. (CRSP)
IO	The proportion of shares held by institutional investors at the end of previous year. (Thomson Reuters institutional holdings (13F))
Analyst	The number of analysts following the company at the end of previous year. (I/B/E/S)
Leverage	The sum of long-term debt and current liabilities scaled by total assets in the previous year. (Compustat)
Size	The natural log of stock market capitalization in the previous year. (Compustat)
BM	The book value of common equity to market capitalization. (Compustat)
BoardSize	The natural log of the number of directors on board. (ISS)
BoardInd	The proportion of independent directors. (ISS)
<b>Other Variables</b>	
Future Return $_{i,t+1 \rightarrow t+k}$	Future stock returns over one-, three- and six-month horizon estimated using raw, market-adjusted and industry-adjusted stock returns. (CSRP)
Market Reaction	The cumulative (abnormal) stock returns over the 11- and 21-day windows surrounding labor union contract renewal dates. The daily abnormal return is the difference between a firm's daily raw stock return and the expected return, where expected returns are estimated using either the market model or Fama-French five-factor model estimated in the estimation window [-250, -30]. (CSRP)

Internet Appendix

to Accompany

Organized Labor and Managerial Opportunism



**Table OA1**  
**Summary Statistics of Other Opportunism Measures**

This table reports the summary statistics of alternative opportunism measures used in this paper. *OpProfits<sub>20</sub>* estimates the insider trading profitability over 20 trading days after the transaction date. *OpTrades* is the natural log of one plus the number of insider trades executed by non-routine insiders in a given firm-year following Cohen, Malloy and Pomorski (2012). *Quintile 5 Insiders* is the ratio of the number of insiders whose pre-QEA profits are in the top quintile (Quintile 5) to the total number of insiders. *Illegal Insider Trades* is the number of illegal insider trading in a given firm-year according to Ahern (2017). *Financial Fraud* is an indicator variable which equals one if a firm experiences one of the three events in a given year: (1) the firm receives an SEC Accounting and Auditing Enforcement Release (AAER); (2) the firm-year is subject to a securities class-action lawsuit in SSCAC, and (3) a firm is classified as having financial mistatement irregularities by Hennes, Leone and Miller (2008). *Option Backdating* is defined as a dummy variable which equals one if the strike price of at least one insider's option grant in a given year is the lowest price of the month and zero otherwise. Column (12) reports the *p*-values of *t*-tests of the mean difference, whereas Column (13) presents those of Wilcoxon tests of the median difference between unionized and non-unionized variables. NObs is the number of observations. The sample period is from 1996 to 2017.

Variable	Full Sample			Unionized Firms			Non-unionized Firms			<i>p</i> -value			
	Mean (1)	Median (2)	StdDev (3)	NObs (4)	Mean (5)	Median (6)	StdDev (7)	NObs (8)	Mean (9)	Median (10)	StdDev (11)	(5)-(9) (12)	(6)-(10) (13)
OpProfits <sub>20</sub>	0.576	0.417	1.214	66,190	0.501	0.344	1.176	348,547	0.590	0.431	1.221	0.000	0.000
OpTrades	2.711	2.639	1.204	6,396	2.652	2.565	1.195	27,119	2.725	2.708	1.206	0.000	0.000
Quintile 5 Insiders	0.062	0.000	0.140	6,473	0.050	0.000	0.120	27,909	0.065	0.000	0.144	0.000	0.000
Illegal Insider Trades	0.104	0.000	0.444	2,332	0.053	0.000	0.467	9,526	0.116	0.000	0.438	0.000	0.000
Financial Fraud	0.053	0.000	0.225	6,403	0.043	0.000	0.202	27,510	0.056	0.000	0.230	0.000	0.000
Option Backdating	0.050	0.000	0.217	6,403	0.037	0.000	0.190	27,510	0.053	0.000	0.223	0.000	0.000

**Table OA2**  
**Correlation Matrix**

This table reports the correlation coefficients between key variables at the insider trade level. *OpProfits* is the abnormal returns over the window [1, 180] relative to the insider transaction date for all insiders. *Union* represents firm-level unionization ratio. *Turnover* is daily trading volume. *Return* is prior stock return. *Analyst* is the number of analyst forecasts. *IO* is institutional ownership. *Leverage* is financial leverage. *Size* is firm size. *BM* is book-to-market ratio. All variables are defined in Appendix A. The continuous variables are winsorized at the top and bottom 1% of the sample distribution. The sample period is from 1996 to 2017.

Variable	Union	OpProfits	Turnover	Return	Analyst	IO	Leverage	Size
OpProfits	-0.026***							
Turnover	-0.077***	0.055***						
Return	-0.036***	0.229***	0.174**					
Analyst	-0.009***	0.026***	0.281***	-0.079***				
IO	0.054***	-0.051***	0.156***	-0.126***	0.347***			
Leverage	0.209***	-0.095***	-0.116***	-0.087***	0.053***	0.106***		
Size	0.065***	0.047***	0.164***	-0.091***	0.789***	0.447***	0.115***	
BM	0.097***	-0.166***	-0.176***	-0.108***	-0.278***	-0.062***	0.129***	-0.387***

**Table OA3**  
**Instrumental Variable Analysis – 2SLS Regressions**

This table reports the estimation results from the following 2SLS regressions.

$$\begin{aligned} \text{1st-Stage: } Union_{i,t} &= \alpha_0 + \beta_1 Heavywork_{j,t} + \gamma' X_{i,t} + \epsilon_{i,t}, \\ \text{2nd-Stage: } Opportunism_{i,s,t+1} &= \alpha_0 + \beta_1 \widehat{Union}_{i,t} + \gamma' X_{i,t} + \epsilon_{i,t}. \end{aligned}$$

In the first stage regression, we regress the firm-level unionization ratio,  $Union$ , on an instrumental variable,  $Heavywork$ , as well as other firm characteristic variables. In the second stage, we then regress the opportunistic insider trading measure ( $OpProfits$ ) on  $\widehat{Union}$  estimated from the first stage regression.  $Heavywork$  denotes the proportion of female workers employed in heavy work occupations for a given industry where heavy work occupations comprise (1) natural resources, construction, and maintenance occupations and (2) production, transportation, and material moving occupations. This information is from the Bureau of Labor Statistics.  $Opportunism$  represents the risk-adjusted abnormal stock returns estimated from Fama and French's (2015) five-factor model over the 180 trading days following the insider transaction date, expressed in percentage. The list of control variables includes stock trading turnover ( $Turnover$ ), prior stock return ( $Return$ ), number of analyst forecasts ( $Analyst$ ), institutional ownership ( $IO$ ), financial leverage ( $Leverage$ ), firm size ( $Size$ ), and book-to-market ( $BM$ ). Industry and year fixed effects are also included. All the variables are defined in Appendix A. The continuous variables are winsorized at the top and bottom 1% of the sample distribution. The  $t$ -statistics in parentheses are based on heteroskedasticity-consistent standard errors. The symbols \*\*\*, \*\*, and \* denote the significance at 1%, 5%, and 10% levels, respectively. NObs is the number of observations. The sample period is from 1996 to 2017.

Variable	1st-Stage	2nd-Stage
	(1)	(2)
$\widehat{Union}$		-0.265** (-2.50)
HeavyWork	0.048*** (46.14)	
Turnover	-0.000 (-1.00)	0.001 (0.65)
Return	0.000*** (16.38)	0.002*** (53.92)
Analyst	-0.002*** (-42.08)	-0.002*** (-5.97)
IO	0.008*** (7.89)	0.085*** (17.70)
Leverage	0.122*** (94.99)	-0.088*** (-6.18)
Size	0.011*** (50.77)	0.029*** (18.08)
BM	0.040*** (49.31)	0.005 (0.84)
NObs	256,246	256,246
Adj. $R^2$	0.075	0.541
Year FE	Yes	Yes
Partial $F$ -test	984.287	
Hausman $p$ -value	0.000	

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