Cooperative Strategic Disclosure

by

Hunter Richard Pearson

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Dissertation Committee:

Jaewoo Kim, Co-Chair

Brady Twedt, Co-Chair

Kyle Peterson, Core Member

Van Kolpin, Institutional Representative

University of Oregon

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DISSERTATION ABSTRACT

Hunter Richard Pearson

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Recent research finds that firms use disclosure to weaken their competitors. However, I hypothesize that in settings with repeated interactions and strong cooperation incentives, firms will instead strategically use disclosure to strengthen their competitors. In support of this hypothesis, I find that unionized firms disclose bad news about their own financial outlooks to increase their unionized peers' bargaining power during labor negotiations. Consistent with game theory predictions, I further find that this peer-strengthening disclosure appears to be based on reciprocity and concentrated in firms facing credible and severe threats of retaliation, as well as firms poised to benefit more from cooperation. These findings provide novel evidence that firms use disclosure to strengthen their competitors under certain circumstances, broadening our understanding of firms' strategic disclosure incentives.

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DEDICATION

For my parents, Henry and Kathy Pearson; I am eternally grateful for their unwavering love and support. In memory of my granddad, Henry Pearson Sr., in whose footsteps I walk.

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CHAPTER 1

INTRODUCTION

A recent stream of literature provides consistent evidence that firms strategically use disclosure to *weaken* their competitors (e.g., Aobdia and Cheng 2018; Kim, Verdi, and Yost 2020; Cao, Feng, and Lei 2021). Specifically, firms disclose information that influences how outside stakeholders perceive their competitors' financial prospects in ways that weaken those competitors' strategic positions. However, game theory posits that in some repeated games, competitors can maximize their payoffs through cooperation. Based on this theory, I predict that firms in a repeated-game setting featuring strong cooperation incentives will strategically use disclosure to *strengthen* their competitors.

To identify an appropriate setting in which to test my hypothesis, I consider four factors that game theory identifies as impacting the likelihood that competitors will take actions to strengthen each other (i.e., cooperate) instead of to weaken each other (i.e., defect). First, cooperation can only form when competitors have repeated interactions with no definite end; rational competitors faced with a definite end will always choose to defect (Axelrod 1984). The next two factors are credible and severe threats of retaliation, where retaliation consists of a competitor who was previously defected against responding with defection of its own. The more credible and severe the threat of retaliation, the more likely it is that competitors cooperate (Friedman 1971; Abreu 1986; Shapiro 1989). The final factor is future benefits from cooperation. The higher the benefits from cooperation, the more likely they outweigh the immediate benefits of defection (Axelrod 1984). I expect that in settings with these factors in place, firms will actually use disclosure to strengthen their competitors.

I test my hypothesis using unionized firms' disclosure during their unionized competitors' labor negotiations. When negotiating labor contracts, unions balance between obtaining maximum compensation for members and avoiding placing such a large financial burden on the firm that some members are laid off.[1] Consequently, unions are more likely to temper their demands when they believe the firm's financial outlook is poor (Leap 1991; Katz, Kochan, and Colvin 2017).[2] Because a firm's disclosure reveals information about its peers' financial prospects (e.g., Foster 1981; Baginski 1987), a unionized firm can increase (decrease) its competitor's bargaining power by issuing bad news (good news) disclosure during the competitor's labor negotiation. Several features of my setting align well with game theory constructs which promote cooperation between competitors. First, because labor contracts are regularly renegotiated, unionized competitors have no definite end to their strategic interactions. Next, the ability of a pair of unionized competitors to weaken each other by issuing good news disclosure during each other's negotiations constitutes credible and severe threats of retaliation. Finally, the ability of a pair of unionized competitors to both benefit from disclosing bad news during each other's negotiations constitutes future benefits from cooperation.

Aobdia and Cheng (2018) find that non-unionized firms disclose good news during their unionized peers' labor negotiations to weaken those peers. However, unionized and non-unionized firms have vastly different disclosure incentives: unlike non-unionized firms, unionized firms may incur significant costs from using disclosure to attack unionized competitors (due to threats of

[1] For example, following the recent bankruptcy of Yellow Corporation, which left 22,000 union members unemployed, the company's CEO laid the blame squarely on the Teamsters Union, claiming they were "able to halt our business plan, literally driving our company out of business" (Reuters 2023a). Similarly, Ford's CEO claimed that its union's proposed terms could spell bankruptcy for the firm if implemented (Reuters 2023b).

[2] An anecdote of this is recorded by Leap (1981) and Verrecchia (1983): The United Auto Workers union scaled back their demands when Chrysler faced financial difficulties, but offered up fewer concessions once Chrysler's chairman said the firm's financial position had improved.

retaliation) and potentially reap benefits from using disclosure to cooperate with unionized competitors (due to mutual benefits over repeated interactions). Based on these incentives, I expect that unionized firms will use disclosure to increase their competitors' bargaining power against their unions. Consequentially, I hypothesize that disclosure issued by unionized firms will be more likely to be pessimistic during competitors' labor negotiations than during other periods.

For a sample of 6,914 unionized firm-year-quarter observations between 1998 and 2019, I find that earnings guidance issued by unionized firms is more pessimistic during their competitors' negotiations than during other times.[3] This result is reached after controlling for time-varying factors which may affect a firm's earnings guidance news (e.g., return on assets and earnings surprise) and including firm and year-quarter fixed effects, which alleviate concerns that differences between firms or across time are responsible for my finding. In terms of economic magnitude, the decrease in the measure of guidance optimism during peers' negotiations is roughly 66% of the unconditional mean. This finding provides initial support to my hypothesis that unionized firms issue pessimistic earnings guidance to strengthen their competitors during labor negotiations.

Next, to address the possibility that this result is driven by a within-firm correlated omitted variable, such as firms' actual financial outlooks, rather than a strategic decision to strengthen competitors, I examine earnings guidance in the two quarters immediately before and immediately after peers' negotiations. If a correlated omitted variable is responsible for pessimistic earnings guidance during competitors' labor negotiations, that guidance behavior should persist after peers' negotiations are finished. Contrary to this notion, I find that guidance issued by unionized firms is

[3] I focus primarily on earnings guidance because forward-looking projections of firm performance are the information "most desired by unions" (Palmer 1977). However, in additional analyses discussed later, I examine alternative measures of disclosure (Sections 4.5 and 5.1). In addition, I end my sample period in 2019 to avoid both truncation issues in the labor negotiation data and the impact of COVID-19 on guidance and labor relations.

not more pessimistic in the periods immediately before or after peers' negotiations. This finding provides further evidence to support the notion that the pessimistic earnings guidance I document during peers' negotiations is issued to influence those negotiations.

To substantiate my inferences, I next test cross-sectional predictions based on four game-theory constructs. First, I proxy for the credibility of retaliation threats using the negotiating peer's prior guidance frequency, because the stickiness of guidance makes retaliation threats from infrequent guiders less credible. Second, I proxy for the severity of retaliation threats using stock return correlation between the disclosing firm and its negotiating peer, because guidance by close economic peers has a larger impact on bargaining strength. Third, I proxy for the long-term benefits from cooperation using right-to-work exposure and unionized employee presence, because increased bargaining power is more beneficial when facing strong unions. Fourth, I proxy for the short-term costs of cooperation using financial constraints, because issuing pessimistic guidance is more costly for financially constrained firms. I find pessimistic earnings guidance during peers' negotiations is concentrated in firms facing credible and severe threats of retaliation and facing high (low) benefits (costs) of cooperation, consistent with my four cross-sectional predictions.

Next, I examine the game theory prediction that reciprocity motivates cooperation (Axelrod 1981; Axelrod and Hamilton 1981; Axelrod 1984). To test this prediction, I identify each unique pair of unionized competitors and track their strategic interactions during each other's negotiations. Consistent with reciprocity being a driving force of cooperative disclosure, I find that pessimistic guidance during peers' negotiations is concentrated in firms that were previously strengthened by the negotiating firms' pessimistic guidance. This finding, together with results from my cross-sectional tests, provides further support for my main inference that unionized firms

strategically use pessimistic earnings guidance to strengthen their competitors in anticipation of reciprocal guidance from them.

Having documented firms' use of quantitative disclosure during peers' negotiations, I next examine whether firms also use qualitative disclosure to increase their competitors' bargaining power. Consistent with this notion, I find that cooperative unionized firms use a significantly more negative tone in their earnings press releases during peers' negotiations. Because disclosure impacts peers' unions' beliefs to the extent that it reveals information about their firms' financial prospects, disclosure about industry and macroeconomic factors should have a pronounced impact on peers' bargaining power. I find the negative tone in earnings press releases is particularly strong in discussions of those factors during peers' negotiations, providing further evidence that unionized firms use qualitative disclosure to impact their competitors' labor negotiations. Together, my evidence suggests that unionized firms use both quantitative and qualitative disclosure to strengthen their competitors.

Finally, I examine whether unionized firms' issuance of pessimistic guidance increases their competitors' bargaining power during labor negotiations. Using average pension expense as a proxy for negotiation outcome favorability, I provide evidence that firms enjoy better negotiation terms when their unionized peers issue pessimistic earnings guidance. This finding suggests that unionized firms successfully use guidance to strengthen their unionized competitors.

My findings contribute to three streams of literature. First, I contribute to research examining how firms use disclosure to impact how their competitors are perceived by outside stakeholders. Recent studies find that firms in single-shot games take advantage of information spillovers by strategically altering the content of their disclosure to weaken their competitors (Aobdia and Cheng 2018; Kim et al. 2020; Billett, Ma, and Yu 2021; Cao et al. 2021; Bloomfield,

Heinle, and Timmermans 2024). In contrast, using a repeated-game setting with strong cooperation incentives, I provide novel evidence that firms alter their voluntary disclosure to strengthen their competitors. This evidence provides an overall more nuanced understanding of how firms strategically use disclosure to alter stakeholders' perceptions of their competitors.

Second, I contribute to the literature examining how firms use disclosure to influence their peers' actions. Using evidence from antitrust litigation (Bourveau, She, and Zaldokas 2020), strategic alliances (Kepler 2021), and common ownership (Pawliczek, Skinner, and Zechman 2022), prior studies find that firms use disclosure to engage in tacit collusion – revealing information to their competitors to enable the coordination of pricing and production choices that maximize their joint profits. I extend this literature by identifying disclosure designed to benefit competitors in a reciprocal fashion; I find that firms issue disclosure that strengthens their competitors in order to induce those competitors to issue disclosure that similarly strengthens them in the future. This finding enriches our understanding of how firms use disclosure to affect their peers' behavior. Specifically, my results show that firms not only use disclosure to influence their competitors' real decisions, as shown by prior literature, but also strategically use disclosure to influence the potential content of their competitors' future disclosure.

Third, I contribute to the literature examining firms' motives for issuing bad news disclosure. Prior literature suggests that firms may voluntarily disclose bad news to mitigate litigation and reputational costs (e.g., Skinner 1994) and to avoid negative earnings surprises by lowering analysts' expectations (e.g., Cotter, Tuna, and Wysocki 2006). Additionally, firms in some settings disclose bad news about themselves to weaken their competitors' strategic positions (Kim et al. 2020; Billet et al. 2021). In contrast, I find that unionized firms issue bad news earnings

guidance to strengthen their competitors and prompt reciprocal cooperation. This finding broadens our understanding of why firms voluntarily disclose bad news about their financial prospects.

CHAPTER 2

PRIOR LITERATURE, INSTITUTIONAL DETAILS, AND HYPOTHESIS DEVELOPMENT

2.1. Prior Literature

The central question of this study is whether firms strategically use disclosure to strengthen their competitors under certain circumstances. This question lies at the intersection of two prior streams of literature. The first stream of literature consists of game theory studies which examine what motivates competitors to cooperate with each other, while the second examines how firms strategically use disclosure to weaken their competitors. I summarize relevant findings from these two streams of literature below.

2.1.1. Cooperation between Competitors – Evidence from Game Theory

Game theory studies have demonstrated that cooperation can develop between competitors in noncooperative games – games without enforceable agreements – using models of repeated oligopolistic and prisoner's dilemma games, as well as computer simulations of repeated games. These studies examine repeated games out of necessity – in single-shot games, competitors are always better off defecting, making cooperation infeasible (Axelrod 1984; Shapiro 1989). Friedman (1971) finds that defection can be prevented by a credible threat that all other firms in the industry will retaliate against the defecting firm by reverting to noncooperative levels. Abreu (1986) takes this intuition even further, showing that more severe threats of retaliation lead to greater cooperation.

Some of the most influential evidence concerning cooperation between competitors comes from two computer simulation tournaments conducted by Robert Axelrod. In those tournaments, Axelrod examined how different strategies fare against each other in the repeated prisoner's dilemma game. Tit-for-tat, which cooperates when cooperated with and defects when defected

against, was the dominant strategy in both tournaments (Axelrod 1980a; Axelrod 1980b). The inference that cooperation based on reciprocity is a successful strategy under a variety of circumstances has been reinforced using both ecological and evolutionary-biological simulations (Axelrod 1980b; Axelrod 1981; Axelrod and Hamilton 1981). Cooperation is more likely to form when there is a higher likelihood of future interactions, when the benefits from cooperation are greater, and when the costs of cooperation are lower (Axelrod 1984).

Cooperation based on reciprocity has been demonstrated in non-business settings ranging from the behavior of birds (Lombardo 1985) and fish (Milinski 1987) to the actions of opposing armies during trench warfare (Ashworth 1980; Axelrod 1984). There is also evidence that firms share real information with their competitors to enable the coordination of prices and quantities (e.g., Kepler 2021). However, the existence of cooperation based on reciprocity in a firm disclosure setting, whereby firms strategically use disclosure to impact outside stakeholders' views of their competitors in ways that strengthen those competitors, has not been examined.

2.1.2. Strategic Peer Disclosure

Recent studies find that firms strategically use disclosure to weaken their competitors. Several of these studies find that firms accomplish this by taking advantage of information spillovers, using disclosure about their own prospects to impact outside stakeholders' views of their competitors' prospects. For example, Kim et al. (2020) study cash-based acquisitions and find that acquiring firms alter the tone of their press releases to depress investors' perceptions of target firms' values. This decrease in target firms' stock prices benefits acquiring firms by reducing acquisition prices. Similarly, Billett et al. (2021) find that firms issue more bad news management forecasts and include more pessimistic language in their 10-Q reports during their competitors' IPOs. This reduces investors' optimism about the IPO firms' prospects, thereby reducing the

success of the IPOs. In a similar vein, Bloomfield et al. (2024) find that CEOs use disclosure to decrease the stock price of competitors that form the benchmark for their relative stock-price compensation. There is also evidence of firms using more direct disclosure methods to weaken competitors: Cao et al. (2021) find that firms use social media to rebroadcast negative news about their competitors.

The most closely related study is Aobdia and Cheng (2018). They find that non-unionized firms issue more management guidance, especially good news guidance, during their unionized competitors' labor negotiations. This good news guidance makes their unionized competitors' financial outlooks appear more positive to their unions; this emboldens the unions to demand higher compensation, which weakens the unionized competitors. Both Aobdia and Cheng (2018) and my study examine how firms use disclosure spillovers to impact their competitors' labor negotiations. However, while Aobdia and Cheng (2018) examine the disclosure of *non-unionized* firms, I examine the disclosure of *unionized* firms. These two sets of firms have very different disclosure incentives during competitors' labor negotiations, as outlined in section 2.3.

These prior studies find that firms use disclosure to weaken their competitors using settings that resemble single-shot games; such settings have no threats of retaliation or potential benefits from cooperation. Given game theory evidence that cooperation between competitors is only viable in repeated games which also possess strong cooperation-fostering factors, these prior findings may not generalize to settings that resemble multi-period games.

2.2. Institutional Details – Labor Negotiations

Beginning with the National Labor Relations Act of 1935, private-sector American workers have the right to form unions. Once a union is formed, it negotiates with the firm on behalf of its employees. This negotiation culminates with the ratification of a collective bargaining

agreement (CBA), which determines the employees' terms of employment, wages, pensions, and other benefits. The typical duration of a CBA is 3-5 years (Cramton and Tracy 1992; Rich and Tracy 2004; Aobdia and Cheng 2018). As a result, CBAs are regularly renegotiated.

As pointed out by Aobdia and Cheng (2018), labor negotiations have several features that make them a strong setting for examining peers' disclosure choices. First, labor negotiations are effectively staggered because there is heterogeneity in firms' initial unionization dates and in the duration of CBAs. As such, any concurrent event responsible for the documented disclosure would also need to be staggered across the same time periods. Second, the existence of labor negotiations is public information, and their timing is predictable, enabling competitors to alter disclosure during negotiations if they so choose. Third, firms do not have a means of significantly influencing the timing of their unionized competitors' labor negotiations. This exogenous nature of the shock alleviates concerns that a common force determines both the content of a firm's disclosure and the timing of its peers' labor negotiations. Another feature that makes this setting well-suited for examining my research question is the repeated nature of labor negotiations. This feature causes interactions between competing unionized firms during each other's labor negotiations to resemble a multi-period game rather than a single-shot game.

2.3. Hypothesis Development

Unions have a clear incentive to maximize their members' wages, pensions, and other benefits. However, unions also face a dilemma known as the employment-wage tradeoff; if wages, pensions, and other benefits are too costly to the firm, layoffs that detrimentally impact union members may occur (Leap 1991; Katz et al. 2017). As such, unions may not push for maximum compensation if they believe doing so would cause the firm to lay off workers, which is more

likely if the firm's financial prospects are poor. Therefore, ascertaining the firm's financial prospects plays a key role in how aggressively unions choose to bargain during labor negotiations.

There are three channels that may inform unions about their firms' financial prospects. First, firms' internal financial data and projections would be best suited for this task; however, firms are typically not required to furnish unions with this information, making this channel inaccessible for most unions.[4] Second, unions can gather information from their firms' public disclosure; however, this information is subject to manipulation given firms' clear incentives to portray negative financial outlooks (D'Souza, Jacob, and Ramesh 2001; Bova 2013). The third channel is economic and industry research (Palmer 1977; Leap 1991), which is accessible to unions and is not subject to manipulation by their firms. One of the most direct sources of industry information is the public disclosure of peer firms, which reveals information about the focal firm through information spillovers (e.g., Foster 1981; Baginski 1987). Given unions' demand for forward-looking projections of firm performance (Palmer 1977), management guidance by peer firms should be particularly informative to them. Aobdia and Cheng (2018) provide evidence that good news guidance issued by non-unionized peers increases the union's bargaining power, consistent with peers' guidance influencing the union's bargaining strategy.

This ability to influence competitors' labor negotiations by issuing guidance gives unionized firms a choice. They can issue good news guidance to embolden their competitors' unions and weaken their competitors, just like non-unionized firms do (Aobdia and Cheng 2018). Alternatively, they can issue bad news guidance to strengthen their competitors by negatively

[4] A union is entitled to the firm's financial data only if the firm claims it cannot meet the union's demands because it cannot afford them, also known as a "plea of poverty"; because of this, most firms avoid making the plea of poverty explicitly, opting instead to "claim that they are unwilling to agree to the union's demands because of labor costs or competitive conditions" (Leap 1991; Cheng 2017).

impacting how those competitors' financial prospects are perceived by their unions.[5] Unionized and non-unionized firms stand to receive the same benefits (i.e., weakening competitors) by issuing good news guidance and incur the same costs (i.e., costs associated with disclosing negative news) by issuing bad news guidance during peers' negotiations. However, the costs of issuing good news guidance to weaken competitors and the benefits of issuing bad news guidance to strengthen competitors are vastly different for unionized and non-unionized firms.

On the costs side, if a unionized firm issues good news guidance during its competitor's labor negotiation, it must consider the possibility that the competitor will retaliate by issuing good new guidance during the firm's future negotiation. In contrast, non-unionized firms do not have future labor negotiations, and need not be concerned about retaliation from unionized competitors. On the benefits side, like players in a repeated prisoner's dilemma game, a pair of unionized competitors may both be better off if they take turns strengthening each other by issuing bad news guidance during each other's labor negotiations. In contrast, like players in a single-shot prisoner's dilemma game, non-unionized firms cannot form such mutually beneficial patterns of cooperation with unionized competitors due to their lack of labor negotiations. Given these increased costs of issuing peer-weakening guidance and increased benefits of issuing peer-strengthening guidance, I expect that unionized firms will issue bad news guidance during their unionized competitors' labor negotiations to strengthen those competitors. This expectation leads to my first hypothesis:

H1. *Unionized firms issue more pessimistic earnings guidance during peers' negotiations*

[5] An implicit assumption in the development of this hypothesis is that the financial outlooks of the disclosing firm and its negotiating peer are positively correlated, so that bad news guidance by the focal firm depresses its peer's union's view of its firm's financial prospects. In support of this assumption, the average stock return correlation between a firm and its negotiating peers in the quarter prior to the negotiation is positive over 99% of the time in my sample when it can be calculated.

If unionized firms strategically issue more pessimistic earnings guidance during competitors' negotiations to strengthen those competitors, on average, this behavior should be more pronounced in firms with greater incentives to cooperate. Game theory literature posits that competitors' cooperation incentives are strengthened when they face more credible and severe threats of retaliation, expect greater benefits from cooperation, and incur lower costs of cooperation. My second hypothesis tests the impact of each of these factors on unionized firms' issuance of peer-strengthening pessimistic earnings guidance.

First, I examine the credibility of retaliation threats. In game theory models, retaliation is more credible when there is a greater chance that defection by a player will lead its competitor to punish it by also defecting (e.g., Friedman 1971). In my setting, defection consists of a firm issuing good news guidance during its competitor's negotiation; retaliation consists of that competitor issuing good news guidance during the firm's future negotiation in retribution. As this threat of retaliation becomes more credible, the ex ante costs of not cooperating during peers' negotiations increase. Therefore, I expect that firms facing more credible threats of retaliation will be more likely to use guidance to strengthen their competitors. This prediction is formally stated as follows:

H2a. *Unionized firms facing credible threats of retaliation from negotiating peers issue more pessimistic earnings guidance during peers' negotiations.*

Second, I examine the severity of retaliation threats. In game theory models, retaliation is more severe when it inflicts greater harm on the initial defector who is being punished (e.g., Abreu 1986). In my setting, good news peer guidance during a future negotiation inflicts greater harm when it conveys more positive news to the firm's union about its financial prospects. As the ex ante severity of retaliation increases, the ex ante costs of not cooperating increase. As such, I expect

that firms facing more severe threats of retaliation will be more likely to use guidance to strengthen their competitors. This prediction is formally stated as follows:

H2b. *Unionized firms facing severe threats of retaliation from negotiating peers issue more pessimistic earnings guidance during peers' negotiations.*

Third, I examine the long-term benefits from cooperation. In game theory models, a player receives long-term benefits from cooperation when its competitor reciprocates with cooperation in the future (Axelrod 1984). In my setting, a firm strengthening its competitor by issuing bad news guidance during its negotiation receives benefits if that competitor issues bad news guidance during the firm's future negotiation. Thus, when unionized firms expect to be strengthened to a greater extent if peers issue bad news guidance during their future negotiations, I expect them to be more likely to use guidance to strengthen their competitors. This prediction is formally stated as follows:

H2c. *Unionized firms facing high long-term benefits from cooperation issue more pessimistic earnings guidance during peers' negotiations.*

Fourth, I examine the short-term costs of cooperation. In game theory models, there are frictions that make cooperating players incur short-term costs (Axelrod 1984). As these costs increase, players are less likely to cooperate. In my setting, firms incur short-term costs when they issue bad news guidance during peers' negotiations to strengthen them. I expect that firms facing lower short-term costs will be more likely to use guidance to strengthen their competitors. This prediction is formally stated as follows:

H2d. *Unionized firms facing low costs of cooperation issue more pessimistic earnings guidance during peers' negotiations.*

CHAPTER 3

RESEARCH DESIGN AND DESCRIPTIVE STATISTICS

3.1. Sample Selection

To construct my sample, I obtain data for all private-sector collective bargaining agreements (CBAs) filed by a single firm with the Department of Labor's Office of Labor-Management Standards (OLMS).[6] I then hand-match those CBAs to firms in Compustat. For each CBA that can be matched to a Compustat firm, I then download the text of the CBA and hand-collect the effective date of the contract. This process results in 706 CBAs for 265 unique unionized firms. Because my analysis is at the firm-year-quarter level, I consolidate multiple CBAs belonging to the same firm in the same quarter into a single observation, resulting in 587 CBA firm-year-quarters.

My initial sample consists of 18,651 firm-year-quarters in the Compustat Quarterly database between 1998 and 2019 for 262 unique unionized firms which have historical NAICS codes in the Compustat Annual database. The start of this sample period is motivated by the fact that coverage in the I/B/E/S Guidance database is incomplete before 1998 (Chuk, Matsumoto, and Miller 2013). I end my sample in 2019 to avoid both truncation issues in the OLMS database and confounding effects from the Covid-19 pandemic on both earnings guidance and labor relations (e.g., Call, Hribar, Skinner, and Volant 2024; Call, Melessa, and Volant 2024).[7] I restrict my sample to firm-year-quarters with sufficient financial data to calculate control variables. To isolate the news content of guidance from the firm's decision to issue guidance, I also restrict my sample

[6] This dataset contains "private sector [collective bargaining agreements] in the U.S. covering 1,000 or more workers" (Aobdia and Cheng 2018).

[7] Aobdia and Cheng (2018) note truncation issues in the OLMS database. After limiting my sample to negotiations with effective dates in 2019 or earlier, there does not appear to be truncation in my labor negotiation data.

to only guidance quarters (quarters in which the firm issued at least one bundled management earnings forecast). My rationale for focusing on bundled management earnings forecasts is explained in section 3.2. This selection process results in a final sample of 6,914 firm-year-quarters from 166 unique unionized firms, and is summarized in Appendix A.

3.2. Measure of Earnings Guidance News

I obtain earnings guidance news from the I/B/E/S Guidance database, retaining guidance for which the analysts' consensus can be identified.[8] For my main analyses, I focus on bundled guidance because a manual inspection of press releases containing unbundled bad news earnings guidance suggests that it is often issued due to unforeseen, firm-specific events. This feature makes unbundled guidance unsuitable for my analyses for two reasons: First, earnings guidance is less likely to influence a peer's labor negotiation if that peer's union believes the guidance primarily reflects the impact of a firm-specific event and not industry or macroeconomic forces that also affect its firm's prospects. Second, the only way for a firm to benefit from cooperation is if its competitor recognizes the cooperative action and reciprocates in the future. When earnings guidance is issued because of a firm-specific event, competitors likely find it more difficult to know whether downward-biased guidance indicates that they are being cooperated with, or simply indicates that the firm-specific event is particularly negative for the disclosing firm's outlook.[9]

I classify management earnings forecasts that exceed (fall short of) analysts' expectations as good (bad) news. My main outcome variable, *NET_NEWS*, is calculated as the difference between the number of good news management earnings forecasts and the number of bad news

[8] To eliminate earnings pre-announcements, I drop guidance issued after the end of the forecasted earnings period.

[9] Results are robust to including unbundled management earnings forecasts (untabulated).

management earnings forecasts issued in the quarter, scaled by the total number of management earnings forecasts issued in the quarter.[10]

3.3. Research Design

To test my primary hypothesis that unionized firms issue more pessimistic earnings guidance during their competitors' labor negotiations, I estimate the following regression model (firm and time subscripts are omitted):

$$NET\_NEWS = \beta_1 PEERNEG + \beta_2 OWNNEG + \beta_3 LOG\_FOLLOW + \beta_4 MTB + \beta_5 ROA + \beta_6 SIZE + \beta_7 LOG\_PRC + \beta_8 INST\_OWN + \beta_9 LOSS + \beta_{10} RET\_VOL + \beta_{11} EARN\_SURP + \beta_i FIRM\_FE + \beta_i YEAR\_QUARTER\_FE + \varepsilon \quad (1)$$

where the main variable of interest, *PEERNEG,* is an indicator variable equal to one if at least one of the firm's peers is negotiating with its union, and zero otherwise. I define peers at the six-digit NAICS industry level.[11] *OWNNEG* is equal to one if the firm is negotiating with its own union, and zero otherwise. Following the timeline used by prior research, I classify the quarter of and the quarter before the effective date of a labor negotiation as negotiation quarters, and all other quarters as non-negotiation quarters.[12]

Throughout my tests, I follow prior studies (e.g. Yang 2012; Aobdia and Cheng 2018; Baginski, Campbell, Ryu, and Warren 2023) and control for factors that may impact the news content of earnings guidance: *LOG_FOLLOW* is the natural log of the number of analysts following the firm and *MTB* is the firm's market-to-book ratio. *ROA* is the firm's return on assets.

[10] Some firms issue multiple earnings forecasts around the same earnings announcement. I include the following types of earnings guidance in my tests: EBITDA per Share (EBS), EBITDA (EBT), Earnings per Share (EPS), Funds from Operations per Share (FFO), Fully Reported Earnings per Share (GPS), Gross Margin (GRM), Net Income (NET), Operating Profit (OPR), and Pretax Income (PRE).

[11] The result is robust to using SIC4 and GICS-Subindustry codes as alternative industry classifications (untabulated).

[12] Liberty and Zimmerman (1986) consider the quarter immediately preceding the contract approval quarter as the negotiation period, while Aobdia and Cheng (2018) "use 90 days before the contract's effective date as the starting date of labor negotiations." See Appendix B for an example of the timing of focal and peer negotiations.

SIZE is the firm's size, measured as the natural log of the firm's market value of equity. *LOG_PRC* is the natural log of the firm's stock price, while *INST_OWN* is the percentage of the firm's shares owned by institutional investors. *LOSS* is equal to one if the firm had a net loss before extraordinary items, and zero otherwise. *RET_VOL* is the firm's stock return volatility, measured as the standard deviation of daily stock returns during the quarter. *EARN_SURP* is the difference between the firm's quarterly earnings and analysts' consensus expectations for those earnings, scaled by stock price. All variable definitions are provided in Appendix C.

Summary statistics are presented in Table 1, Panel A (see Appendix D for all tables). I find that 9.7% of observations occur during a peer's labor negotiation, while 6.2% occur during the firm's own labor negotiation. For the sake of comparison, I also present summary statistics for all non-unionized firm observations in Compustat Quarterly which would have met my sample criteria if they were unionized in Table 1, Panel B. The unionized firms I study are larger (market cap of $24.3 billion versus $7 billion), are followed by more analysts (11.4 analysts versus 8.9), and have greater growth opportunities (market-to-book ratio of 4.1 versus 3.3), on average, than their non-unionized counterparts.

Such differences between unionized and non-unionized firms force studies that compare firms from the two groups (e.g., Cheng 2017), or even compare non-unionized firms from unionized and non-unionized industries (e.g., Aobdia and Cheng 2018), to utilize matched control samples. In contrast, I only examine unionized firms, alleviating concerns that differences between unionized and non-unionized firms affect my results. This feature makes a matched control sample unnecessary for my study. Additionally, the use of firm fixed effects means I compare a particular unionized firm's earnings guidance during its competitors' negotiations with that same unionized firm's earnings guidance during all other periods.

I examine guidance activity during peers' negotiations, which act as staggered shocks largely exogenous to the firm. A peer's negotiation acts as an off-on-off switch, which is off before the peer's negotiation, turns on during the peer's negotiation, and turns off again after the peer's negotiation. This design feature increases my ability to isolate the effect of peers' labor negotiations from potential confounding factors. The use of year-quarter fixed effects helps further alleviate concerns that secular changes in economic outlook drive my results.

CHAPTER 4

RESULTS

4.1. Earnings Guidance During Peers' Negotiations (H1)

I test my first hypothesis, which predicts that unionized firms issue more pessimistic earnings guidance during their unionized peers' negotiations, by estimating the regression in Model (1). In Table 2, Column 1, I report baseline results including firm and year-quarter fixed effects, but without controls for firm fundamentals; I find a significantly negative coefficient on my main variable of interest, *PEERNEG*, at the 1% level. Column 2 reports results from my main specification, which includes controls for firm fundamentals.[13] I find a significantly negative coefficient on *PEERNEG* at the 1% level. This finding suggests that earnings guidance issued by unionized firms is significantly more likely to be pessimistic during peers' negotiations. In terms of economic significance, the coefficient is roughly 66% of the unconditional mean of *NET_NEWS* ([-0.111/-0.167 = 0.665]). This finding is consistent with my first hypothesis and suggests that, in repeated games with strong cooperation incentives, firms use disclosure to strengthen their competitors.

4.2. Earnings Guidance Before and After Peers' Negotiations

My interpretation of the results reported in Table 2 assumes that there are no omitted variables that are correlated with both the firm's earnings guidance behavior and the timing of its peers' labor negotiations. This assumption is based on the prescheduled and staggered nature of peers' negotiations, the timing of which is largely exogenous to the disclosing firm. Nevertheless, my results could be the product of poor industry performance which also affects the disclosing

[13] Results on control variables are consistent with prior research. The insignificant coefficient on *OWN_NEG* is unsurprising, given Bova's (2013) finding that unionized firms are more likely to miss earnings expectations to portray a pessimistic financial outlook across all periods, not just during their negotiations.

firm's outlook, or some other omitted time-varying firm fundamental, which happens to be correlated with peers' labor negotiations. If this is the case, I expect the omitted variable and accompanying pessimistic guidance to persist after peers' negotiations. Conversely, if unionized firms issue pessimistic guidance to strengthen their competitors, I do not expect that behavior to persist in the quarters following peers' negotiations. I thus examine earnings guidance in the quarters immediately before and after peers' labor negotiations to evaluate the likelihood of these two competing explanations.

To conduct this examination, I estimate Model (1) after including four additional dummy variables. *PRE2* (*PRE1*) is equal to one in the quarter two (one) quarters (quarter) before peers' negotiations. *POST1* (*POST2*) is equal to one in the quarter one (two) quarter (quarters) after peers' negotiations. As depicted in Figure 1, there appears to be a downward trend in *NET_NEWS* in the quarters immediately before peers' negotiations which becomes significant during peers' negotiations (see Appendix E for all figures). This suggests some firms may begin issuing peer-strengthening disclosure prior to the two-quarter negotiation window I examine. In contrast, the trend disappears in the quarter immediately after peers' labor negotiations. I report the regression results in Table 3. The coefficient on *PEERNEG* is once again significantly negative at the 1% level. Conversely, the coefficients on *PRE2*, *PRE1*, *POST1*, and *POST2* are all insignificant, suggesting that unionized firms do not significantly alter their issuance of pessimistic earnings guidance in the quarters immediately before or after peers' negotiations. This finding provides additional evidence that unionized firms issue pessimistic earnings guidance to impact their competitors' labor negotiations, not because of true firm outlooks or some other correlated omitted variable.

4.3. Cross-Sectional Tests (H2)

To test my second hypothesis, which predicts that unionized firms with greater incentives for cooperation issue more pessimistic earnings guidance during their competitors' labor negotiations, I estimate the following regression:

$$NET\_NEWS = \beta_1 HIGH\_INCEN + \beta_2 LOW\_INCEN + \beta_3 OWNNEG + \beta_4 LOG\_FOLLOW + \beta_5 MTB + \beta_6 ROA + \beta_7 SIZE + \beta_8 LOG\_PRC + \beta_9 INST\_OWN + \beta_{10} LOSS + \beta_{11} RET\_VOL + \beta_{12} EARN\_SURP + \beta_i FIRM\_FE + \beta_i YEAR\_QUARTER\_FE + \varepsilon \quad (2)$$

where *HIGH_INCEN* (*LOW_INCEN*) is an indicator variable denoting that the firm has high (low) exposure to the cooperation incentive being tested during peers' negotiations.[14]

For my test based on the credibility of retaliation threats (H2a), I proxy for cooperation incentives using *CRED_THREAT* (*UNCRED_THREAT*), which denotes firms during peers' negotiations when the negotiating firm has an above (below) median level of past earnings guidance frequency. In my setting, retaliation threats are more credible if the negotiating firm is more willing to issue good news guidance in the future. Issuing guidance is a sticky behavior because the cessation of guidance is viewed unfavorably by the market (Verrecchia 1983; Dye 1985; Call et al. 2024a). As such, negotiating firms that frequently issue guidance pose more credible threats of retaliation than those that rarely issue guidance.

For my test based on the severity of retaliation threats (H2b), I proxy for cooperation incentives using *STRONG_THREAT* (*WEAK_THREAT*), which denotes firms during peers' negotiations when the negotiating firm and the focal firm have an above (below) median stock return correlation. Unionized firms that have close economic ties with negotiating peers face more severe threats of retaliation because those peers' future disclosure has a greater impact on the

[14] Because it is possible that the proxies I use to split my sample in these cross-sectional tests are correlated with either the decision to issue earnings guidance or the availability of financial data to calculate control variables, I perform cross-sectional splits prior to limiting my sample based on those two criteria. However, I find my inferences are unchanged if I perform cross-sectional splits only on my final sample (untabulated).

firms' unions' beliefs. Because unions' perceptions of those economic ties are unobservable, I use stock return correlation as a proxy.[15]

For my tests based on the benefits from cooperation (H2c), I proxy for cooperation incentives using *HIGH_BENEFIT* (*LOW_BENEFIT*), which denotes firms during peers' negotiations that have above (below) median union strength. Gaining bargaining power against strong unions is more valuable than gaining bargaining power against weak unions (e.g., Bova 2013). I measure union strength in two ways. First, I use firm presence in right-to-work states; these states prohibit firms and unions from compelling union membership or dues, weakening unions (e.g., Moore 1998; Brau and Jeong 2024). Second, because unions have more bargaining power when they represent a greater proportion of a firm's employees, I use the percentage of the firm's total employees that are covered by labor negotiations (e.g., Bova 2013; Katz et al. 2017).

For my tests based on the costs of cooperation (H2d), I proxy for cooperation incentives using *LOW_COST* (*HIGH_COST*), which denotes firms during peers' negotiations that have below (above) median financial constraint values. One cost of issuing pessimistic guidance is that it makes external financing more costly; this cost should be higher for financially constrained firms.

I report results from testing H2a (H2b) in Table 4, Column 1 (2). The coefficients on *CRED_THREAT* and *STRONG_THREAT* are significantly negative at the 1% level, while the coefficients on *UNCRED_THREAT* and *WEAK_THREAT* are insignificant. Additionally, I find the coefficients in each column are significantly different at the 5% level. These results are

[15] I acknowledge that stock return correlation could capture benefits from cooperation in addition to the severity of retaliation threats. It is difficult to disentangle these two game theory constructs empirically in my setting, because both are stronger when negotiating peer firms have a greater ability to influence the beliefs of the focal firm's union. However, even if this proxy also captures benefits from cooperation, results are still consistent with game theory predictions concerning cooperation between competitors, supporting my second hypothesis.

consistent with unionized firms issuing more pessimistic earnings guidance during peers' negotiations when faced with credible and severe threats of retaliation, in support of H2a and H2b.

I report results from testing H2c in Table 5, Panel A. I measure union strength based on right-to-work presence (percentage of unionized employees) in Column 1 (2). The coefficients on *HIGH_BENEFIT* are significantly negative at the 1% level, while the coefficients on *LOW_BENEFIT* are insignificant, in both columns. Additionally, the coefficients are significantly different from each other at the 5% (1%) level in Column 1 (2).[16] I report results from testing H2d in Table 5, Panel B. I measure financial constraints using the Hadlock and Pierce 2010 (Whited and Wu 2006) index in Column 1 (2). Across both specifications, the coefficients on *HIGH_COST* are insignificant, while the coefficients on *LOW_COST* are significantly negative at the 1% level. These results are consistent with unionized firms issuing more pessimistic earnings guidance during peers' negotiations when faced with higher benefits and lower costs of cooperation, in support of H2c and H2d.

Together, the results from these cross-sectional tests of my second hypothesis provide evidence that firms *strategically* issue pessimistic earnings guidance during competitors' negotiations to strengthen those competitors. These cross-sectional results also provide empirical evidence that the factors that promote cooperation between competitors in analytical models and computer simulations also promote cooperation in the domain of firm disclosure.

[16] For results reported in Table 5, Panel A, Column 2, I drop the few observations where the number of unionized employees according to the Department of Labor database exceeds the number of total employees according to the Compustat Annual database, because this indicates a data error from at least one source. However, when those observations are retained, I continue to find that firms with a high (low) percentage of unionized employees issue (do not issue) significantly more pessimistic earnings guidance during peers' negotiations (untabulated).

4.4. Reciprocity Between Pairs of Competitors

Game theory literature posits that competitors cooperate to prompt future cooperation from their competitors – i.e., reciprocity (e.g., Axelrod 1984). To further test whether the pessimistic earnings guidance I observe during peers' negotiations is strategically issued, I examine whether it follows a pattern of reciprocity. To this end, I track strategic interactions between each unique pair of competitors across their labor negotiations to determine if firms that were previously strengthened during their negotiation by a competitor issuing bad news guidance reciprocate by issuing bad news guidance during that competitor's negotiation.

I examine reciprocity between firms in two complementary ways. First, I compare the actions of firms that were previously cooperated with to the actions of all other firms. To this end, I estimate Model (1), replacing *PEERNEG* with *COOPER* and *NONCOOPER*. *COOPER* (*NONCOOPER*) is an indicator equal to one during peers' negotiations if at least one (no) negotiating firm(s) had a negative *NET_NEWS* value during the focal firm's most recent negotiation. This classification scheme is depicted in Figure 2, Panel A. Results are reported in Table 6, Column 1. The coefficient on *COOPER* is significantly negative at the 1% level, while the coefficient on *NONCOOPER* is significantly negative at the 5% level. Additionally, the coefficients are significantly different at the 5% level. These findings are consistent with cooperation based on reciprocity motivating pessimistic guidance during peers' negotiations.

Second, I separately examine firms that were previously weakened by the currently negotiating firm with good news guidance and firms that were neither strengthened nor weakened by the currently negotiating firm during their last negotiation. I expect that some firms issue pessimistic earnings guidance during a competitor's negotiation to initiate a pattern of cooperation. However, I do not expect this behavior from firms that were previously attacked by the competitor.

To test these conjectures, I estimate Model (1), replacing *PEERNEG* with *COOPER*, *ATTACK*, and *NEUTRAL*. *ATTACK* is an indicator equal to one during peers' negotiations if at least one negotiating firm had a positive *NET_NEWS* value during the focal firm's most recent negotiation. *NEUTRAL* is an indicator equal to one during peers' negotiations if no negotiating peers had a positive or negative *NET_NEWS* value during the focal firm's most recent negotiation. This classification scheme is depicted in Figure 2, Panel B.

I present results in Table 6, Column 2. The coefficient on *ATTACK* is statistically insignificant, indicating that firms that were previously attacked by their currently negotiating competitor do not use guidance to strengthen that competitor.[17] The coefficient on *NEUTRAL* is negative and significant at the 5% level, consistent with firms issuing pessimistic guidance to initiate patterns of cooperation with their competitors. The coefficient on *COOPER* is significantly negative at the 1% level and significantly more negative than the coefficient on *NEUTRAL* at the 5% level, providing additional evidence of reciprocity. Overall, the results in Table 6 demonstrate that when peer firms issue guidance that strengthens the focal firm during its negotiation, the focal firm reciprocates by issuing guidance that strengthens those peers during their negotiations.[18]

4.5. Tone of Earnings Press Release During Peers' Negotiations

My evidence thus far suggests that unionized firms use quantitative disclosure to strengthen their competitors during labor negotiations. Quantitative projections of financial performance are interpreted through the lens of accompanying qualitative disclosure (e.g., Davis, Piger, and Sedor

[17] Given game theory's emphasis on threats of retaliation, it may seem counterintuitive that previously attacked firms do not respond in like-fashion (no significantly positive coefficient on *ATTACK*). However, firms consider the credibility of potential retaliation when making disclosure choices during peers' negotiations (Table 4, Column 1).

[18] One possible interpretation of my main result (Table 2, Column 2) is that unionized firms seek to depress unionized wages in their industry so that the benchmark their union uses in future negotiations will be lower. While this explanation is still consistent with firms strategically using disclosure to strengthen their competitors, it is inconsistent with the findings described in this section, which suggest that reciprocity drives pessimistic earnings guidance during peers' negotiations.

2012; Twedt and Rees 2012). Thus, I expect unionized firms to use bad news qualitative disclosure to increase the peer-strengthening impact of their pessimistic earnings guidance.

Because the quantitative disclosure I examine in my primary analyses is bundled earnings guidance, I supplement this with an examination of the text of earnings press releases. My sample consists of 4,872 press releases issued during earnings guidance quarters.[19] Appendix F describes how I identify, clean, and analyze press releases. I use the Loughran and McDonald (2011) sentiment word lists to calculate *NET_TONE*, which is the difference between the percentage of positive and negative words in the press release. I estimate Model (1), replacing *NET_NEWS* with *NET_TONE* and adding *BAD_QUANT*, an indicator variable equal to one if the firm has a negative *NET_NEWS* value.[20] In Table 7, Column 1, I report baseline results and find that *NET_TONE* is significantly more negative during quarters with pessimistic earnings guidance. To test my prediction, I add *BAD_QUANT_PEERNEG*, which is an indicator variable equal to one during peers' negotiations if *BAD_QUANT* is equal to one. I report results in Table 7, Column 2. The coefficient on *BAD_QUANT_PEERNEG* is significantly negative at the 1% level, consistent with my prediction.

Next, I leverage a unique feature of labor negotiations to further test whether firms use qualitative disclosure to strengthen their competitors. Qualitative disclosure about industry or macroeconomic factors should have a pronounced impact on a peer's union's belief about its firm's financial outlook. Information about industry and macroeconomic conditions is an important

[19] My main result (Table 2, Column 2) still holds in this reduced sample (untabulated). For the sake of consistency across qualitative disclosure tests, I drop 49 press releases that contain no discussion of industry or macroeconomic factors. However, results are robust to not imposing this restriction (untabulated).

[20] I separately examine press releases during bad news earnings guidance quarters, both during and outside of peers' negotiations, for two reasons. First, I am interested in testing whether firms use qualitative disclosure to increase the peer-strengthening impact of their bad news quantitative disclosure. Second, isolating bad news earnings guidance quarters allows me to examine qualitative disclosure while holding constant the accompanying quantitative disclosure.

determinant of unions' negotiation strategies (Palmer 1977; Leap 1991). In fact, unions prioritize having an "understanding of economic and industry conditions" when selecting bargaining team members (Leap 1991). Thus, I expect firms' use of negative qualitative disclosure during peers' negotiations to be more pronounced for discussions of industry and macroeconomic factors.

To test this expectation, in Table 7, Column 3, I replace *NET_TONE* with *IND_NET_TONE*, which is *NET_TONE* calculated using only sentences that discuss industry or macroeconomic conditions.[21] I find the coefficient on *BAD_QUANT_PEERNEG* is significantly negative at the 5% level. Additionally, the coefficient is significantly more negative when using *IND_NET_TONE* than when using *NET_TONE* as the outcome variable.[22] In terms of economic significance, the effect is over 2.6 times stronger for discussions of industry and macroeconomic factors alone compared to the entire press release. Together, the evidence suggests that unionized firms strategically use both quantitative and qualitative disclosure to strengthen their competitors during labor negotiations.

4.6. Impact of Unionized Peers' Earnings Guidance on Union Negotiation Outcomes

Finally, I examine whether unionized firms successfully strengthen their competitors by issuing pessimistic earnings guidance during their negotiations. Wages and pension terms are two primary outcomes of labor negotiations (Freeman 1985; Leap 1991; Katz et al. 2017). Because wage data is sparse, I use pension expense changes to evaluate negotiation outcome favorability. Each observation represents a firm-year-quarter in which a new collective bargaining agreement went into effect. Because this greatly reduces firm and year-quarter variation, I do not use fixed

[21] I identify industry and macroeconomic sentences using a slightly modified version of the word list used by Guest (2021). Results are robust to using the exact word list from Guest (2021). I am grateful to Nicholas Guest for providing his code on the Journal of Accounting Research website.

[22] I use a one-tailed Z-test to determine whether these two coefficients are statistically different from each other. Given the consistent evidence in Tables 2-6 that unionized firms use disclosure to strengthen their competitors, the use of this one-tailed test is justified.

effects. However, the within-firm changes I examine cause each firm to effectively serve as its own control. If unionized firms' guidance impacts their peers' labor negotiations, I expect smaller increases in pension expense post-negotiation for firms whose peers issued pessimistic guidance.

Results from this test are reported in Table 8. I estimate Model (1), replacing *NET_NEWS* with *PEN_EXP_INCR*, which is the percentage increase in pension expense per employee after the enactment of the labor agreement.[23] I examine the impact of peers' earnings guidance using both an indicator and a continuous variable. The indicator, *PEER_BAD_NEWS*, is equal to one (zero) if the firm's unionized peers have (do not have) a negative average *NET_NEWS* value during its negotiation, while the continuous variable, *PEER_NET_NEWS*, is equal to the average *NET_NEWS* value of the firm's unionized peers during its negotiation (set to zero if missing).

In Column 1 (2), I report results from using *PEER_BAD_NEWS* without (with) firm controls. The coefficient on *PEER_BAD_NEWS* is negative and significant at the 5% (1%) level in Column 1 (2), indicating that increases in pension expense are significantly lower following negotiations during which unionized peers issued pessimistic earnings guidance. In Column 3 (4), I report results from using *PEER_NET_NEWS* without (with) firm controls. The coefficient on *PEER_NET_NEWS* is positive and significant at the 10% (5%) level in Column 3 (4), indicating that more optimistic (pessimistic) earnings guidance issued by peers during a negotiation leads to magnified (muted) increases in pension expense following that negotiation. Together, these results

[23] I measure *PEN_EXP_INCR* using average pension expense from the twelve quarters before and after the enactment of the labor agreement because some collective barraging agreements (CBAs) immediately implement changes in pension terms, while others gradually do so. A narrower window would not fully capture changes in pension terms for the second type of CBA. See Example A (B) in Appendix G for an example of a CBA in which the pension terms are steady (change frequently) across the duration of the agreement.

provide evidence that unionized firms successfully strengthen their unionized peers by issuing pessimistic earnings guidance during their labor negotiations.[24]

[24] Two potential sources of noise in *PEN_EXP_INCR* are the impact of non-negotiated items (such as expected returns) and across-firm pension plan heterogeneity. First, decreases in expected returns increase pension expense, which should bias against my result. Second, *PEN_EXP_INCR* is calculated within-firm, alleviating concerns about across-firm differences.

CHAPTER 5

ROBUSTNESS TESTS

In this section, I conduct a series of robustness tests to alleviate concerns that design choices, rather than unionized firms' strategic disclosure decisions, drive my results.

5.1. Robustness to Alternative NET_NEWS Measure Design Choices

I begin by examining the effect of design choices I make related to the measurement of guidance news. First, I include unbundled earnings guidance to ensure that the decision to limit my analysis to bundled earnings guidance does not drive my results. Second, I limit my analysis to earnings per share guidance to assess the impact of less frequently forecasted measures of earnings guidance. Third, I examine whether including sales guidance, which is now the most common type of firm-issued guidance, alters my inferences (Mayew 2024; Call et al. 2024a; Lu and Skinner 2023). Fourth, I classify guidance that matches the prevailing analysts' consensus as good news. Fifth, I examine the impact of only considering guidance quarters. To do so, I follow prior studies that impute a neutral value for non-guidance quarters (e.g., Aobdia and Cheng 2018) and set *NET_NEWS* to zero for those quarters. Across all five of these alternative specifications, I continue to find that unionized firms issue significantly more pessimistic earnings guidance during their competitors' labor negotiations (untabulated). These findings alleviate concerns about design choices related to how I measure earnings guidance news.

5.2. Robustness to Alternative Industry Classification Schemes

Next, in my main analyses, I define peers at the six-digit NAICS code level. Given the centrality of peer identification to my design, I assess the robustness of my results to three alternative peer classifications. First, in my main analyses, I group observations without full six-digit NAICS codes into industries based on the exact codes they do have. Although less granular

industries should bias against finding results, I drop these observations to assess robustness. Second, I define peers at the four-digit SIC code level. Third, I define peers at the GICS-Subindustry level. In untabulated analysis using these three alternative industry classifications, I continue to find that firms issue significantly more pessimistic earnings guidance during their competitors' labor negotiations. These results mitigate concerns related to my industry classification scheme.

5.3. Robustness to Dropping Own Negotiation Observations

Finally, although only examining unionized firms reduces concerns about differences between unionized and non-unionized firms driving my results, it introduces the possibility that firms' own negotiations may confound results. Although I control for firms' own negotiations throughout my tests, in an untabulated robustness test I drop all observations during firms' own negotiations. I continue to find that firms issue significantly more pessimistic earnings guidance during competitors' negotiations.

CHAPTER 6

CONCLUSION

I examine whether firms use disclosure to strengthen their competitors in a repeated-game setting that features strong cooperation incentives. Using unionized firms' disclosure during their unionized peers' labor negotiations as my setting, I find that unionized firms issue significantly more pessimistic earnings guidance during peers' negotiations than during other time periods. This behavior is not present in the periods immediately before or immediately after peers' negotiations, consistent with this guidance being issued to impact peers' negotiations.

Consistent with firms strategically issuing pessimistic earnings guidance to strengthen their peers during labor negotiations, I find that this behavior aligns with game theory predictions. Specifically, pessimistic earnings guidance during peers' negotiations is based on reciprocity and is concentrated in firms facing credible and severe threats of retaliation, as well as firms facing high (low) benefits (costs) from cooperation. Additionally, I find that unionized firms that issue pessimistic earnings guidance also use a significantly more negative tone when discussing factors likely to affect industry peers in their earnings press releases during peers' labor negotiations. Together, these findings indicate that unionized firms use disclosure to strengthen their unionized competitors. This conclusion is in sharp contrast with findings from prior studies, which document that firms use disclosure to weaken their competitors in other settings. My evidence expands our understanding of how and why firms use disclosure to impact their competitors' strategic positions.

APPENDIX A

SAMPLE SELECTION

Panel A: Labor Negotiation Data Collection

	Number of Contracts	**Number of Unionized Firms**	**Unique Firm-Year-Quarters**
All private-sector collective bargaining agreements:	2,022	-	-
Matchable to Compustat in year of negotiation with effective date:	706	265	587

Panel B: Final Sample Selection

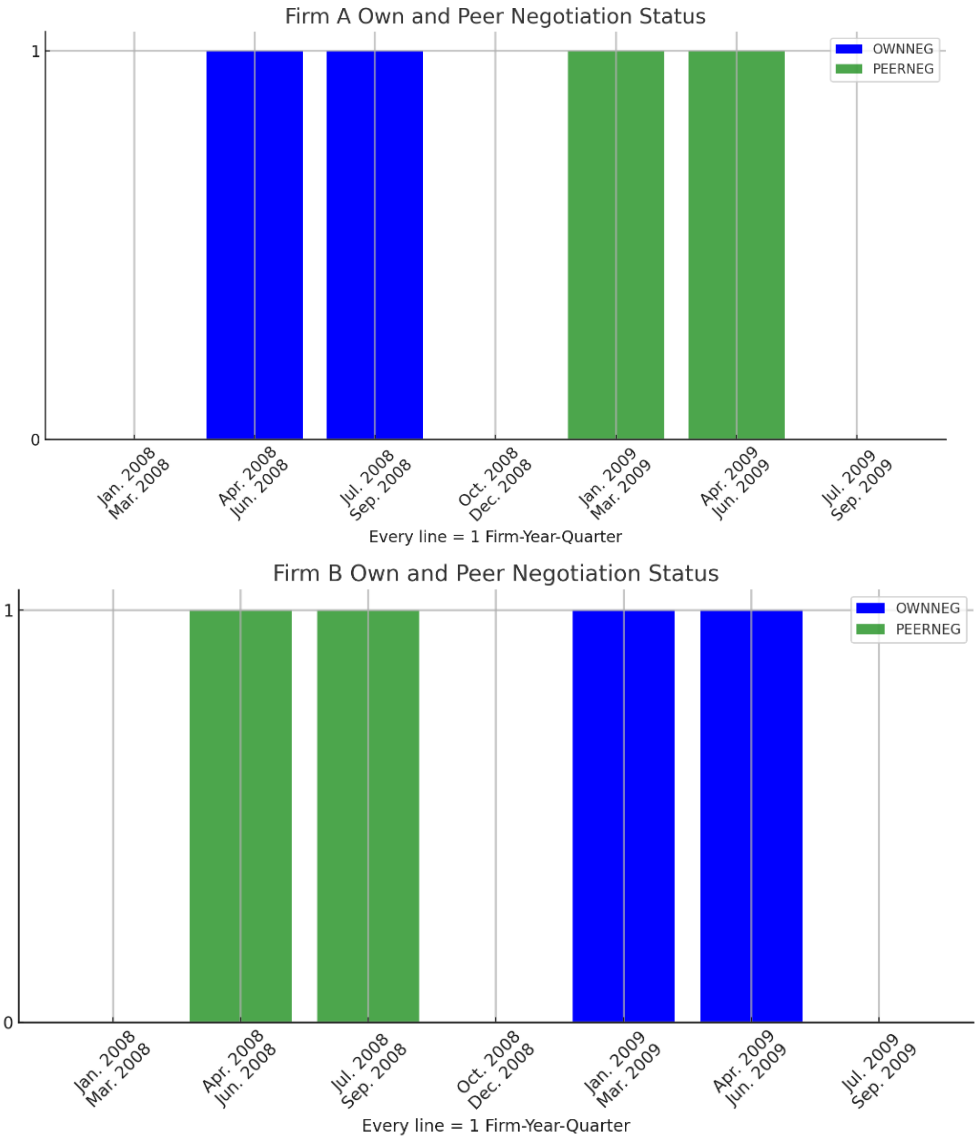
	Firm-Year-Quarters
All unionized firm-year-quarter observations in Compustat Quarterly from 1998 – 2019 with NAICS code from same year in Compustat Annual:	18,651
Unionized firm-year-quarter observations that issue guidance and have sufficient data to calculate control variables:	6,914

APPENDIX B

EXAMPLE OF NEGOTIATION TIMING

Hypothetical: Firm A and Firm B are competitors (same six-digit NAICS code). Firm A has a labor negotiation with an effective date in September 2008. Firm B has a labor negotiation with an effective date in April 2009.

Quarter Start	Jan. 2008	Apr. 2008	Jul. 2008	Oct. 2008	Jan. 2009	Apr. 2009	Jul. 2009
Quarter End	Mar. 2008	Jun. 2008	Sep. 2008	Dec. 2008	Mar. 2009	Jun. 2009	Sep. 2009
Firm A *OWNNEG* =	0	1	1	0	0	0	0
Firm B *OWNNEG* =	0	0	0	0	1	1	0
Firm A *PEERNEG* =	0	0	0	0	1	1	0
Firm B *PEERNEG* =	0	1	1	0	0	0	0



APPENDIX C

VARIABLE DEFINITIONS

Outcome Variables:	
NET_NEWS	The difference between the number of bundled management earnings forecasts that exceed analysts' expectations and the number of bundled management earnings forecasts that fall short of analysts' expectations, scaled by the total number of bundled management earnings forecasts issued.
NET_TONE	The difference between the percentage of positive and negative words in the earnings press release.
IND_NET_TONE	The difference between the percentage of positive and negative words in sentences which discuss industry or macroeconomic factors in the earnings press release
PEN_EXP_INCR	The difference between average pension expense per employee in the twelve quarters after the negotiation quarter and average pension expense per employee in the twelve quarters before the negotiation quarter, scaled by the average pension expense per employee in the twelve quarters before the negotiation quarter. Pension expense data comes from the Compustat Annual database. This variable is standardized to have a mean of zero and standard deviation of one.
Cross-Sectional Classifications:	
PEERNEG	An indicator variable equal to one during industry peers' labor negotiations, and zero otherwise. Industry peers are defined at the six-digit NAICS level using the *NAICSH* variable from Compustat Annual, which is merged based on firm and year.
PRE2	An indicator variable equal to one two quarters before the start of a peer's negotiation period, and zero otherwise.
PRE1	An indicator variable equal to one in the quarter immediately before the start of a peer's negotiation period, and zero otherwise.
POST1	An indicator variable equal to one in the quarter immediately after the end of a peer's negotiation period, and zero otherwise.
POST2	An indicator variable equal to one two quarters after the end of a peer's negotiation period, and zero otherwise.
CRED_THREAT	An indicator variable equal to one during the negotiation of an industry peer that issued more bundled management earnings forecasts over the past twelve quarters than the peer-negotiation median, and zero otherwise.
UNCRED_THREAT	An indicator variable equal to one during the negotiations of industry peers that issued fewer bundled management earnings forecasts over the past twelve quarters than the peer-negotiation median, and zero otherwise.
STRONG_THREAT	An indicator variable equal to one during the negotiation of an industry peer that has a higher daily stock return correlation with the focal firm than the peer-negotiation median, and zero otherwise.
WEAK_THREAT	An indicator variable equal to one during the negotiations of industry peers that have lower daily stock return correlations with the focal firm than the peer-negotiation median, and zero otherwise.

HIGH_BENEFIT	An indicator variable equal to one during peers' negotiations for firms that have a right-to-work state presence (percentage of employees covered by labor agreements) that is below (above) the peer-negotiation median, and zero otherwise. Right-to-work state presence is calculated as the number of states covered by the firm's collective bargaining agreements that are right-to-work states divided by the total number of states covered by the firm's collective bargaining agreements. Percentage of employees covered by labor agreements is calculated as the total number of employees covered by the firm's collective bargaining agreements, scaled by the number of total employees employed by the firm during calendar quarters in which at least one collective bargaining agreement became effective.
LOW_BENEFIT	An indicator variable equal to one during peers' negotiations for firms that have a right-to-work state presence (percentage of employees covered by labor agreements) that is above (below) the peer-negotiation median, and zero otherwise. Right-to-work state presence is calculated as the number of states covered by the firm's collective bargaining agreements that are right-to-work states divided by the total number of states covered by the firm's collective bargaining agreements. Percentage of employees covered by labor agreements is calculated as the total number of employees covered by the firm's collective bargaining agreements, scaled by the number of total employees employed by the firm during calendar quarters in which at least one collective bargaining agreement became effective.
HIGH_COST	An indicator variable equal to one during peers' negotiations if the firm is more financially constrained than the peer-negotiation median, and zero otherwise.
LOW_COST	An indicator variable equal to one during peers' negotiations if the firm is less financially constrained than the peer-negotiation median, and zero otherwise.
COOPER	An indicator variable equal to one during peers' negotiations if a negotiating peer had a negative *NET_NEWS* value during the focal firm's most recent labor negotiation, and zero otherwise.
NONCOOPER	An indicator variable equal to one during peers' negotiations if the negotiating peers did not have a negative *NET_NEWS* value during the focal firm's most recent labor negotiation, and zero otherwise.
ATTACK	An indicator variable equal to one during peers' negotiations if a negotiating peer had a positive *NET_NEWS* value during the focal firm's most recent labor negotiation, and zero otherwise
NEUTRAL	An indicator variable equal to one during peers' negotiations if the negotiating peers did not have a positive or a negative *NET_NEWS* value during the focal firm's most recent labor negotiation, and zero otherwise.
BAD_QUANT	An indicator variable equal to one if the focal firm has a negative *NET_NEWS* value, and zero otherwise.
BAD_QUANT_PEERNEG	An indicator variable equal to one during peers' negotiations if the focal firm has a negative *NET_NEWS* value, and zero otherwise.
PEER_BAD_NEWS	An indicator variable equal to one if the average *NET_NEWS* across all peer-quarters during the firm's negotiation is negative, and zero otherwise.

PEER_NET_NEWS	The average *NET_NEWS* across all peer-quarters during the firm's negotiation. Set to zero if missing.
Control Variables:	
OWNNEG	An indicator variable equal to one during the firm's labor negotiations, and zero otherwise.
LOG_FOLLOW	The natural log of one plus the number of analysts following the firm.
MTB	The market value of equity divided by the book value of equity.
ROA	Income before extraordinary items, scaled by lagged total assets.
SIZE	The natural log of the market value of equity.
LOG_PRC	The natural log of the firm's stock price.
INST_OWN	The percentage of the firm owned by institutional investors.
LOSS	An indicator variable equal to one if income before extraordinary items is negative, and zero otherwise.
RET_VOL	The standard deviation of daily stock returns during the quarter.
EARN_SURP	The difference between reported quarterly earnings and analysts' consensus expectations for those earnings as of three trading days prior to the earnings announcement, scaled by the stock price three trading days prior to the earnings announcement.

APPENDIX D

TABLES

Table 1: Summary Statistics

Panel A: Summary Statistics – Final Sample

Variable	Obs.	Mean	Median	SD	P25	P75
NET_NEWS	6,914	-0.167	-0.333	0.868	-1.000	1.000
PEERNEG	6,914	0.097	0.000	0.295	0.000	0.000
OWNNEG	6,914	0.062	0.000	0.242	0.000	0.000
LOG_FOLLOW	6,914	2.411	2.485	0.488	2.197	2.773
MTB	6,914	4.057	2.489	6.067	1.620	4.189
ROA	6,914	0.014	0.013	0.013	0.007	0.021
SIZE	6,914	9.198	9.231	1.372	8.268	10.131
LOG_PRC	6,914	3.720	3.761	0.710	3.323	4.187
INST_OWN	6,914	0.437	0.567	0.369	0.000	0.764
LOSS	6,914	0.087	0.000	0.281	0.000	0.000
RET_VOL	6,914	0.018	0.015	0.009	0.011	0.021
EARN_SURP	6,914	0.001	0.001	0.003	-0.000	0.002
OVERALL_NET_TONE	4,872	-0.073	-0.084	0.718	-0.530	0.326
INDUSTRY_NET_TONE	4,872	-0.603	-0.648	2.337	-2.000	0.677

Panel B: Summary Statistics – Non-Unionized Firms in Compustat Quarterly

Variable	Obs.	Mean	Median	SD	P25	P75
NET_NEWS	84,896	-0.111	0.000	0.858	-1.000	1.000
PEERNEG	84,896	0.025	0.000	0.155	0.000	0.000
LOG_FOLLOW	84,896	2.094	2.079	0.646	1.609	2.565
MTB	84,896	3.311	2.376	4.957	1.516	3.908
ROA	84,896	0.010	0.011	0.029	0.002	0.023
SIZE	84,896	7.437	7.378	1.571	6.335	8.449
LOG_PRC	84,896	3.192	3.295	0.941	2.650	3.831
INST_OWN	84,896	0.400	0.302	0.412	0.000	0.814
LOSS	84,896	0.199	0.000	0.399	0.000	0.000
RET_VOL	84,896	0.025	0.021	0.013	0.015	0.030
EARN_SURP	84,896	0.001	0.001	0.008	-0.000	0.002

This table presents summary statistics. Panel A presents summary statistics for my sample. Panel B presents comparable summary statistics for all non-unionized observations that would have otherwise met my sample criteria. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 2: Earnings Guidance During Peers' Negotiations

Dependent Variable	(1) *NET_NEWS*	(2) *NET_NEWS*
PEERNEG	**-0.115*** **	**-0.111*** **
	(-3.298)	**(-3.271)**
OWNNEG		-0.035
		(-0.692)
LOG_FOLLOW		-0.123**
		(-2.083)
MTB		0.002
		(0.858)
ROA		4.643***
		(3.325)
SIZE		-0.063
		(-1.287)
LOG_PRC		0.075
		(1.435)
INST_OWN		0.021
		(0.208)
LOSS		0.012
		(0.243)
RET_VOL		-2.104
		(-0.967)
EARN_SURP		14.706***
		(3.989)
Observations	6,914	6,914
R-squared	0.091	0.100
Firm FE	Yes	Yes
Year-Quarter FE	Yes	Yes

This table examines unionized firms' earnings guidance during peers' labor negotiations. *NET_NEWS* is the difference between the number of management earnings forecasts that exceed analysts' expectations and the number of management earnings forecasts that fall short of analysts' expectations, scaled by the total number of management earnings forecasts issued. *PEERNEG* is an indicator variable equal to one during peers' negotiations, and zero otherwise. *OWNNEG* is an indicator variable equal to one during the firm's own labor negotiations, and zero otherwise. *LOG_FOLLOW* is the natural log of the number of unique analysts following the firm. *MTB*, *ROA*, and *SIZE* are the firm's market-to-book ratio, quarterly return on assets, and natural log of the market value of equity, respectively. *LOG_PRC* and *INST_OWN* are the natural log of the firm's stock price and the percentage of shares held by institutional investors, respectively. *LOSS* is an indicator variable equal to one if the firm recorded negative net income, and zero otherwise. *RET_VOL* is the standard deviation of the firm's daily stock returns during the quarter. *EARN_SURP* is the difference between quarterly earnings reported and analysts' consensus expectations for those earnings, scaled by stock price. Robust standard errors are clustered at the industry (six-digit NAICS) level. Statistical significance at the 10%, 5%, and 1% levels are denoted by *, **, and ***, respectively.

Table 3: Earnings Guidance Before and After Peers' Negotiations

Dependent Variable	(1) *NET_NEWS*
PRE2	-0.049
	(-0.723)
PRE1	-0.067
	(-0.941)
PEERNEG	**-0.113*** **
	(-3.392)
POST1	0.046
	(0.971)
POST2	0.047
	(1.115)
Observations	6,591
R-squared	0.105
Firm FE	Yes
Year-Quarter FE	Yes
Controls from Table 2	Yes

This table examines earnings guidance before, during, and after peers' labor negotiations. *NET_NEWS* is the difference between the number of management earnings forecasts that exceed analysts' expectations and the number of management earnings forecasts that fall short of analysts' expectations, scaled by the total number of management earnings forecasts issued. *PRE2* and *PRE1* are indicator variables equal to one in each of the two quarters immediately preceding peers' negotiations, respectively, and zero otherwise. *PEERNEG* is an indicator variable equal to one during peers' negotiations, and zero otherwise. *POST1* and *POST2* are indicator variables equal to one in each of the two quarters immediately following peers' negotiations, respectively, and zero otherwise. Robust standard errors are clustered at the industry (six-digit NAICS) level. Statistical significance at the 10%, 5%, and 1% levels are denoted by *, **, and ***, respectively.

Table 4: Credibility and Severity of Retaliation Threats

	(1)	(2)
Retaliation Threat Characteristic	*Credibility*	*Severity*
Dependent Variable	*NET_NEWS*	*NET_NEWS*
***CRED_THREAT* [a]**	**-0.184***** **(-3.941)**	
UNCRED_THREAT [b]	0.045 (0.522)	
***STRONG_THREAT* [a]**		**-0.199***** **(-4.663)**
WEAK_THREAT [b]		0.036 (0.395)
p-value from F-test: [a] = [b]	0.0400**	0.0190**
Observations	6,897	6,732
R-squared	0.101	0.102
Firm FE	Yes	Yes
Year-Quarter FE	Yes	Yes
Controls from Table 2	Yes	Yes

This table examines unionized firms' earnings guidance during peers' negotiations conditional on the credibility and severity of retaliation threats from those negotiating peers. *NET_NEWS* is the difference between the number of management earnings forecasts that exceed analysts' expectations and the number of management earnings forecasts that fall short of analysts' expectations, scaled by the total number of management earnings forecasts issued. *CRED_THREAT* is an indicator variable equal to one during peers' negotiations if a negotiating peer issued more bundled management earnings forecasts over the past twelve quarters than the peer-negotiation median, and zero otherwise. *UNCRED_THREAT* is an indicator variable equal to one during peers' negotiations if the negotiating peers issued fewer bundled management earnings forecasts over the past twelve quarters than the peer-negotiation median, and zero otherwise. *STRONG_THREAT* is an indicator variable equal to one during peers' negotiations if the stock return correlation between the firm and its negotiating peer is higher than the peer-negotiation median, and zero otherwise. *WEAK_THREAT* is an indicator variable equal to one during peers' negotiations if the stock return correlation between the firm and its negotiating peers is lower than the peer-negotiation median, and zero otherwise. Robust standard errors are clustered at the industry (six-digit NAICS) level. Statistical significance at the 10%, 5%, and 1% levels are denoted by *, **, and ***, respectively.

Table 5: Long-Term Benefits and Short-Term Costs of Cooperation

Panel A: Long-Term Benefits from Cooperation

	(1)	(2)
Union Strength Measure	Right-To-Work Status	Pct. Unionized Employees
Dependent Variable	*NET_NEWS*	*NET_NEWS*
***HIGH_BENEFIT* [a]**	**-0.194*** **	**-0.223*** **
	(-4.160)	**(-5.722)**
LOW_BENEFIT [b]	-0.019	-0.047
	(-0.332)	(-0.893)
p-value from F-test: [a] = [b]	0.0179**	<0.01***
Observations	6,900	6,880
R-squared	0.100	0.100
Firm FE	Yes	Yes
Year-Quarter FE	Yes	Yes
Controls from Table 2	Yes	Yes

Panel B: Short-Term Costs of Cooperation

	(1)	(2)
Financial Constraint Measure	HP Index	WW Index
Dependent Variable	*NET_NEWS*	*NET_NEWS*
HIGH_COST [a]	-0.059	0.020
	(-0.962)	(0.209)
***LOW_COST* [b]**	**-0.128*** **	**-0.191*** **
	(-3.266)	**(-4.268)**
p-value from F-test: [a] = [b]	0.3120	0.0870*
Observations	6,910	6,910
R-squared	0.100	0.101
Firm FE	Yes	Yes
Year-Quarter FE	Yes	Yes
Controls from Table 2	Yes	Yes

This table examines unionized firms' earnings guidance during peers' negotiations conditional on the long-term benefits and short-term costs of cooperation. *NET_NEWS* is the difference between the number of management earnings forecasts that exceed analysts' expectations and the number of management earnings forecasts that fall short of analysts' expectations, scaled by the total number of management earnings forecasts issued. Panel A examines earnings guidance during peers' negotiations conditional on the long-term benefits from cooperation. In column 1 (2), *HIGH_BENEFIT* is equal to one during peers' negotiations if firm presence in right-to-work states (percentage of employees unionized) is below (above) the peer-negotiation median, and zero otherwise. In column 1 (2), *LOW_BENEFIT* is equal to one during peers' negotiations if firm presence in right-to-work states (percentage of employees unionized) is above (below) the peer-negotiation median, and zero otherwise. Panel B examines earnings guidance during peers' negotiations conditional on the short-term costs of cooperation. *HIGH_COST* is equal to one during peers' negotiations if the firm is more financially constrained than the peer-negotiation median, and zero otherwise. *LOW_COST* is equal to one during peers' negotiations if the firm is less financially constrained than the peer-negotiation median, and zero otherwise. The index from Hadlock and Pierce (2010) [Whited and Wu (2006)] is used to measure financial constraints in column 1 [2]. Robust standard errors are clustered at the industry (six-digit NAICS) level. Statistical significance at the 10%, 5%, and 1% levels are denoted by *, **, and ***, respectively.

Table 6: Reciprocity Between Pairs of Competitors

Dependent Variable	(1) *NET_NEWS*	(2) *NET_NEWS*
***COOPER* [a]**	**-0.251***** **(-3.410)**	**-0.248***** **(-3.284)**
NONCOOPER [b]	-0.079** (-2.174)	
ATTACK [c]		-0.061 (-0.596)
NEUTRAL [d]		-0.092** (-2.562)
p-value from F-test: [a] = [b]	0.0293**	
p-value from F-test: [a] = [c]		0.2294
p-value from F-test: [a] = [d]		0.0480**
Observations	6,914	6,914
R-squared	0.100	0.101
Firm FE	Yes	Yes
Year-Quarter FE	Yes	Yes
Controls from Table 2	Yes	Yes

This table examines how the currently negotiating firm's guidance during the focal firm's most recent negotiation impacts the focal firm's current guidance. *NET_NEWS* is the difference between the number of management earnings forecasts that exceed analysts' expectations and the number of management earnings forecasts that fall short of analysts' expectations, scaled by the total number of management earnings forecasts issued. *COOPER* is an indicator variable equal to one during peers' negotiations when the peer firm had a negative *NET_NEWS* value during the focal firm's most recent negotiation, and zero otherwise. *NONCOOPER* is an indicator variable equal to one during peers' negotiations when the peer firms did not have a negative *NET_NEWS* value during the focal firm's most recent negotiation, and zero otherwise. *ATTACK* is an indicator variable equal to one during peers' negotiations when the peer firm had a positive *NET_NEWS* value during the focal firm's most recent negotiation, and zero otherwise. *NEUTRAL* is an indicator variable equal to one during peers' negotiations when the peer firms did not have a positive or negative *NET_NEWS* value during the focal firm's most recent negotiation. Robust standard errors are clustered at the industry (six-digit NAICS) level. Statistical significance at the 10%, 5%, and 1% levels are denoted by *, **, and ***, respectively.

Table 7: Tone of Earnings Press Releases During Peers' Negotiations

Dependent Variable	(1) *NET_TONE*	(2) *NET_TONE*	(3) *IND_NET_TONE*
BAD_QUANT_PEERNEG		**-0.125*** [a]**	**-0.328** [b]**
		(-2.722)	**(-2.480)**
BAD_QUANT	-0.029*	-0.020	-0.015
	(-1.752)	(-1.266)	(-0.326)
PEERNEG		0.026	0.220
		(0.546)	(1.534)
OWNNEG	0.036	0.037	0.016
	(0.827)	(0.850)	(0.141)
LOG_FOLLOW	-0.028	-0.031	-0.276
	(-0.365)	(-0.404)	(-1.480)
MTB	-0.001	-0.001	0.020**
	(-0.269)	(-0.260)	(2.245)
ROA	7.466***	7.423***	8.901*
	(5.162)	(5.152)	(1.870)
SIZE	0.010	0.009	-0.036
	(0.142)	(0.129)	(-0.191)
LOG_PRC	0.126	0.129	0.188
	(1.524)	(1.565)	(0.917)
INST_OWN	0.041	0.041	0.233
	(0.525)	(0.529)	(0.793)
LOSS	-0.130**	-0.131**	-0.006
	(-2.349)	(-2.369)	(-0.041)
RET_VOL	-5.809**	-5.763**	-14.559**
	(-2.401)	(-2.387)	(-2.166)
EARN_SURP	11.223***	11.313***	5.645
	(4.327)	(4.378)	(0.652)
p-value from one-tailed Z-test: [a] > [b]			0.0735*
Observations	4,872	4,872	4,872
R-squared	0.565	0.565	0.602
Firm FE	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes

This table examines firms' discussions in their earnings press releases during peers' negotiations. *OVERALL_NET_TONE* is the difference between the percentage of positive and negative words in the earnings press release. *IND_NET_TONE* is the difference between the percentage of positive and negative words in sentences which discuss the industry or macroeconomy in the earnings press release. *BAD_QUANT* is an indicator variable equal to one when the firm discloses more bad news management earnings forecasts than good news management earnings forecasts, and zero otherwise. *BAD_QUANT_PEERNEG* is an indicator variable equal to one during peers' negotiations when the firm discloses more bad news management earnings forecasts than good news management earnings forecasts, and zero otherwise. *PEERNEG* is an indicator variable equal to one during peers' negotiations and zero otherwise. *OWNNEG* is an indicator variable equal to one during the firm's own labor negotiations, and zero otherwise. *LOG_FOLLOW* is the natural log of the number of unique analysts following the firm. *MTB*, *ROA*, and *SIZE* are the firm's market-to-book ratio, quarterly return on assets, and natural log of the market value of equity, respectively. *LOG_PRC* and *INST_OWN* are the natural log of the firm's stock price and the percentage of shares held by institutional investors, respectively. *LOSS* is an indicator variable equal to one if the firm recorded negative net income, and zero otherwise. *RET_VOL* is the standard deviation of the firm's daily stock returns during the quarter.

Table 7: Tone of Earnings Press Releases During Peers' Negotiations, continued

EARN_SURP is the difference between quarterly earnings reported and analysts' consensus expectations for those earnings, scaled by stock price. Robust standard errors are clustered at the industry (six-digit NAICS) level. Statistical significance at the 10%, 5%, and 1% levels are denoted by *, **, and ***, respectively.

Table 8: Impact of Unionized Peers' Earnings Guidance on Union Negotiation Outcomes

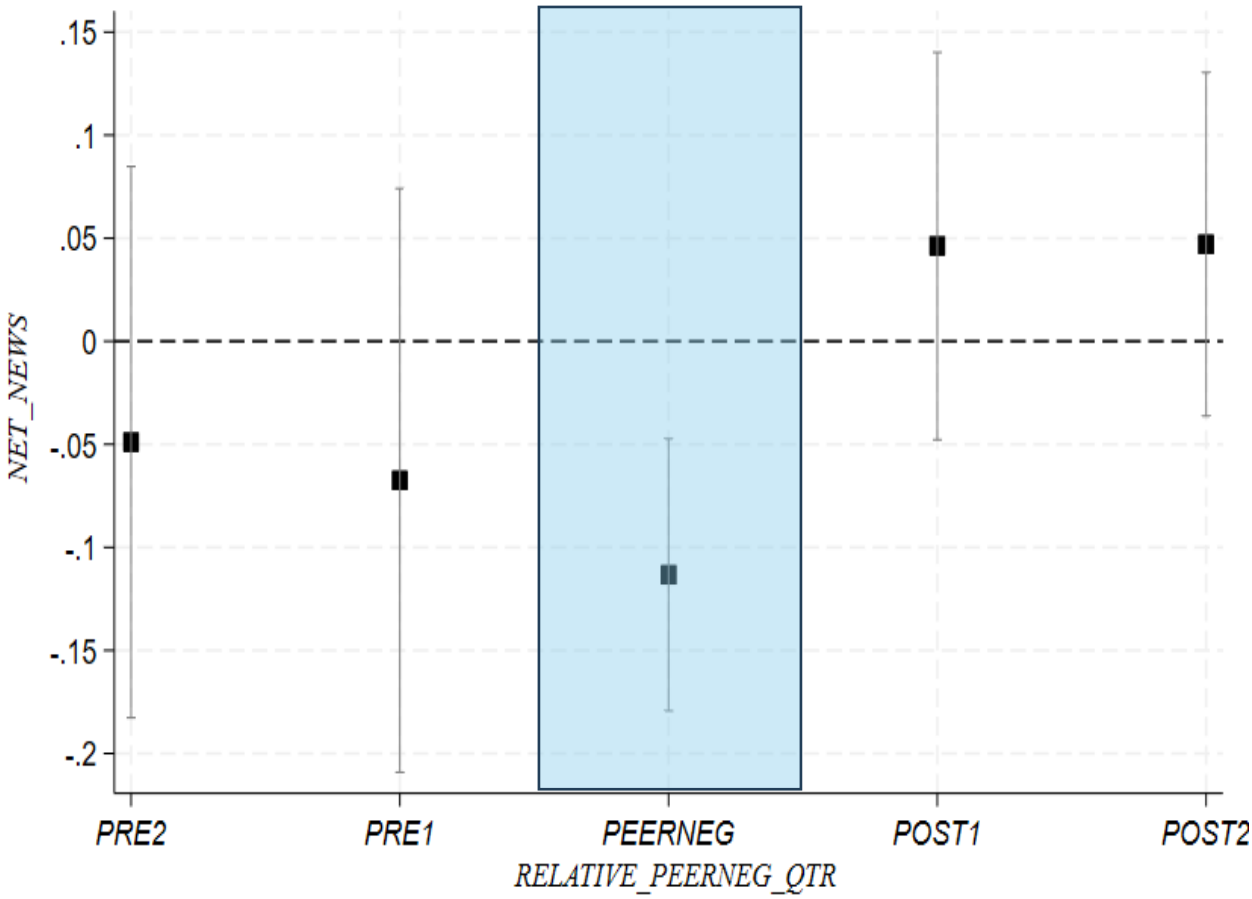
	(1)	(2)	(3)	(4)
Dependent Variable	*PEN_EXP_INCR*	*PEN_EXP_INCR*	*PEN_EXP_INCR*	*PEN_EXP_INCR*
PEER_BAD_NEWS	**-0.219****	**-0.243*****		
	(-2.563)	**(-2.813)**		
PEER_NET_NEWS			**0.177***	**0.192****
			(1.890)	**(2.003)**
LOG_FOLLOW		0.175**		0.177**
		(2.201)		(2.156)
MTB		-0.003		-0.003
		(-1.454)		(-1.365)
ROA		-8.123		-7.173
		(-1.604)		(-1.473)
SIZE		0.023		0.023
		(0.496)		(0.514)
LOG_PRC		-0.080		-0.064
		(-0.682)		(-0.523)
INST_OWN		-0.216		-0.230
		(-1.096)		(-1.114)
LOSS		-0.210		-0.200
		(-1.263)		(-1.216)
RET_VOL		0.035		0.768
		(0.007)		(0.153)
EARN_SURP		4.297		3.601
		(0.674)		(0.542)
Observations	432	432	432	432
R-squared	0.009	0.035	0.006	0.030
Firm FE	No	No	No	No
Year-Quarter FE	No	No	No	No

This table shows how changes in firms' pension expenses around their labor negotiations vary with the content of their unionized peers' guidance during their negotiation. *PEN_EXP_INCR* is the percentage change in average pension expense per employee from the twelve quarters before the negotiation quarter to the twelve quarters after the negotiation quarter. *NET_NEWS* is the difference between the number of management earnings forecasts that exceed and fall short of analysts' expectations, scaled by the total number of management earnings forecasts issued. *PEER_BAD_NEWS* is an indicator variable equal to one if the firm's unionized peers had a negative average *NET_NEWS* value during the firm's labor negotiation, and zero otherwise. *PEER_NET_NEWS* is the firm's unionized peers' average *NET_NEWS* value during the firm's labor negotiation, set to zero if missing. *LOG_FOLLOW* is the natural log of the number of unique analysts following the firm. *MTB*, *ROA*, and *SIZE* are the firm's market-to-book ratio, quarterly return on assets, and natural log of the market value of equity, respectively. *LOG_PRC* and *INST_OWN* are the natural log of the firm's stock price and the percentage of shares held by institutional investors, respectively. *LOSS* is an indicator variable equal to one if the firm recorded negative net income, and zero otherwise. *RET_VOL* is the standard deviation of the firm's daily stock returns during the quarter. *EARN_SURP* is the difference between quarterly earnings reported and analysts' consensus expectations for those earnings, scaled by stock price. Robust standard errors are clustered at the industry (six-digit NAICS) level. Statistical significance at the 10%, 5%, and 1% levels are denoted by *, **, and ***, respectively.

APPENDIX E

FIGURES

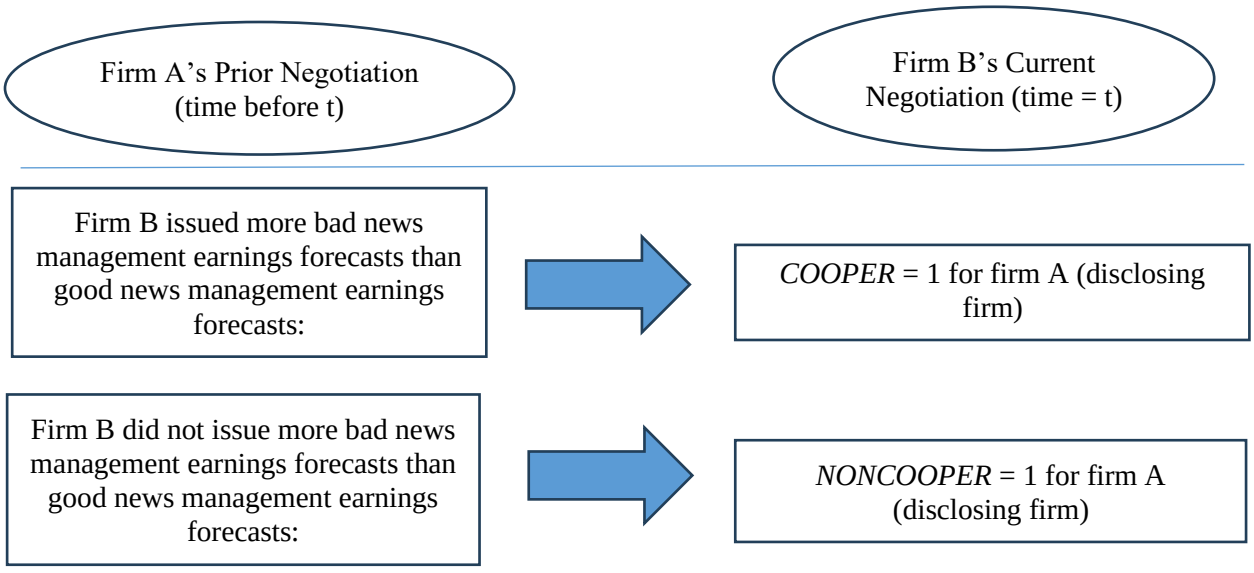
Figure 1: Earnings Guidance Before and After Peers' Negotiations



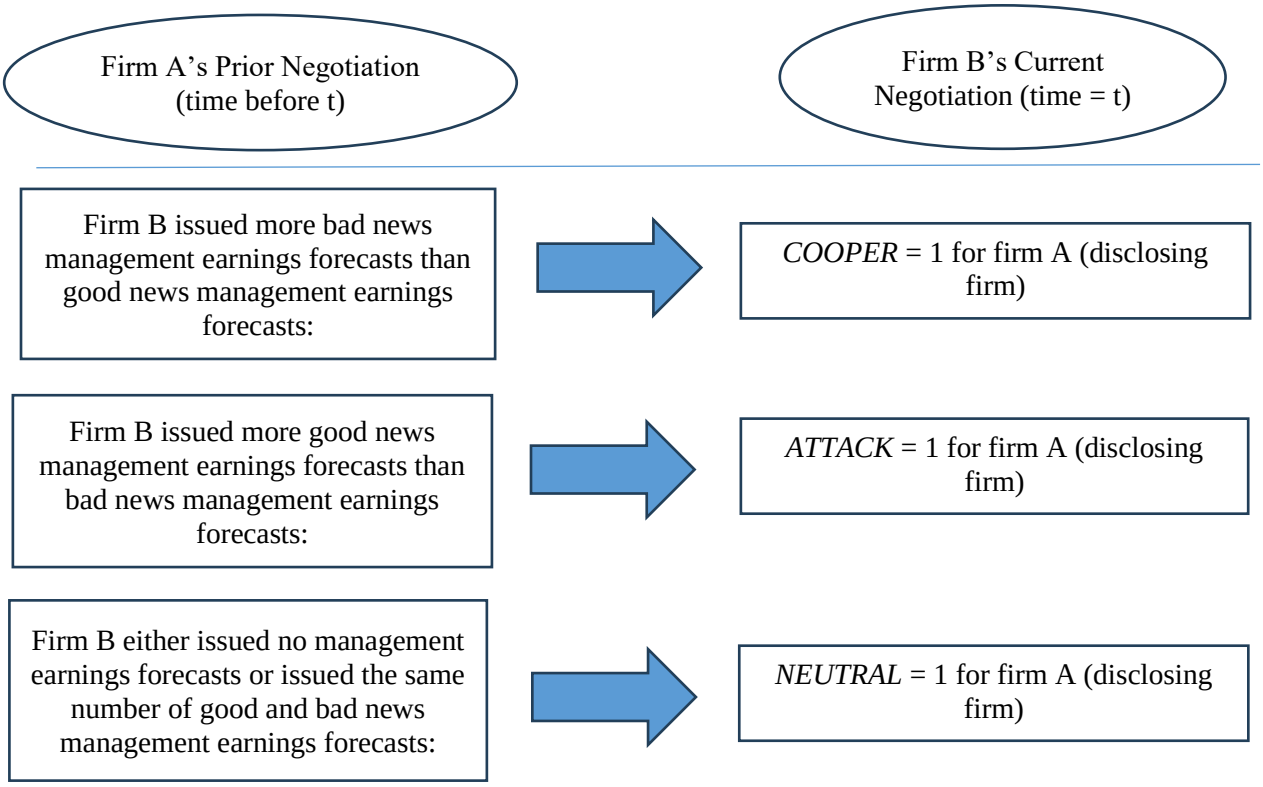
This figure depicts earnings guidance before, during, and after peers' labor negotiations. *NET_NEWS* is the difference between the number of management earnings forecasts that exceed analysts' expectations and the number of management earnings forecasts that fall short of analysts' expectations, scaled by the total number of management earnings forecasts issued. *PRE2* and *PRE1* are indicator variables equal to one in each of the two quarters immediately preceding peers' negotiations, respectively, and zero otherwise. *PEERNEG* is an indicator variable equal to one during peers' negotiations, and zero otherwise. *POST1* and *POST2* are indicator variables equal to one in each of the two quarters immediately following peers' negotiations, respectively, and zero otherwise. Control variables from Table 2, as well as firm and year-quarter fixed effects, are included in the underlying regression. 95% confidence intervals are shown. Results from the underlying regression are reported in Table 3.

Figure 2: Reciprocity Classification Criteria

Panel A: Previously Strengthened Firms Versus All Other Firms



Panel B: Previously Strengthened, Previously Attacked, and Other Firms Examined Separately



This figure illustrates the two alternative classification schemes I use to test reciprocity between competitors. Panel A illustrates the classification scheme when firms that were previously cooperated with are compared to all other firms during peers' negotiations. Panel B illustrates the classification scheme when firms that were previously cooperated with, firms that were previously attacked, and firms that were neither previously cooperated with nor previously attacked are each examined during peers' negotiations. The results from these tests are tabulated in Table 6.

APPENDIX F

IDENTIFYING, CLEANING, AND ANALYZING EARNINGS PRESS RELEASES

F.1. Identifying and Cleaning Earnings Press Releases

I begin by using the GVKEY-CIK match data from Bonsall and Miller (2017) to obtain a list of all CIKs belonging to the unionized firms in my sample. Then, for each CIK, I retrieve the .json file(s) from EDGAR which contain(s) the list of all firm filings. From these lists, I retrieve the accession number and filing date of every 8-K which contains item 2.02. I then identify and download the full text of all exhibit 99s in those 8Ks. I clean the press releases following Guest (2021). This cleaning process includes removing tables unless they are at least 80% alphabetic and removing paragraphs with fewer than 80 words. For a complete description of these cleaning steps, see Guest (2021), Appendix B.

I take several steps to ensure the exhibit 99s I examine are in fact earnings press releases. First, I follow Guest (2021) and drop files that have more than 7,000 words or a Fog index greater than 30, because such files are often legal documents or conference call transcripts. I also drop files with fewer than 25 words. Second, I only retain exhibit 99s that are issued within three days of the firm's earnings announcement. Third, I manually inspect all remaining exhibit 99s and ensure that only earnings press releases are retained.

F.2. Identifying Industry and Macroeconomic Sentences

I use a modified version of the word list from Guest (2021) to identify sentences which discuss industry or macroeconomic factors. If the following strings [industry, peer, compet, market, econom] appear in any word besides [marketing, premarket, mark-to-market] in a sentence, that sentence is classified as discussing industry or macroeconomic factors. The only

difference between my word list and the word list used in Guest (2021) is the exclusion of mark-to-market from the industry words list.

APPENDIX G

EXAMPLES OF PENSION PROVISIONS IN COLLECTIVE BARGAINING AGREEMENTS

The Boeing Company – 12/02/2008 (Example A):

Section 17.5 Changes to the Current Plan. Subject to action by the Company's Board of Directors (or its delegate) and to the approvals specified in 17.2, except as the parties may otherwise agree pursuant to any Letter of Understanding, as well as any changes required by applicable law, all provisions of The Boeing Company Employee Retirement Plan applicable to employees covered by this agreement are to remain unchanged with the exception of the following amendments:

17.5(a) Basic Benefit. The Basic benefit will be increased to $81 per month for all years of Credited Service for Employees on the active Payroll of the Company on or after January 1, 2009 (including those who retire from the employ of the Company on January 1,2009). Effective January 1, 2012, the Basic Benefit will be increased to $83 per month for all years of credited service for employees on the active payroll of the Company, or those on the authorized period of absence on or after January 1,

2012, (including those who retire from the employ of the Company on January 1, 2012).

Section 17.6 Administration of the Retirement Plan. The Company shall have the right to unilaterally make any changes in actuarial assumptions and funding methods, provided such changes are determined by the Plan's enrolled actuary to be reasonable in the aggregate. The Company shall be entitled to unilaterally adopt such amendments to the Plan as may be required in order to obtain any approval referred to in 17.1 and described in 17.2 of the Agreement.

Garlock Sealing Technologies – 02/11/2017 (Example B):

APPENDIX 'H'
BENEFIT PLAN AGREEMENTS

The following descriptions are intended only as a summary of their major provisions. Complete details of the plans shall be set forth in the master plan documents and shall govern the implementation and administration of the plans.

1. PENSION PLAN

A. Past service accruals shall be frozen effective December 31, 1980, and monthly accruals shall be adjusted by the amount of one (1) dollar times years of past service prior to January 1, 1981.

Future benefit shall be determined by a flat-rate multiplier times years of credited service. Effective 2/11/2017, the flat-rate multiplier shall be $43.75. Effective 2/11/2018, the flat rate multiplier shall be $44.00. Effective 2/10/2019, the flat rate multiplier shall be $44.25. Effective 2/11/2020, the flat rate multiplier shall be $44.75.

An employee retiring during the effective dates of this Agreement will receive pension increases as agreed to above, on the date the increase becomes effective.

B. WAITING PERIOD -- An employee becomes a Plan member on the first day of the month following the first anniversary of his date of hire provided he completes at least 1,000 hours of service.

C. VESTING -- Full vesting after five (5) years of service.

D. SPOUSES BENEFIT OR DEATH BENEFITS -- See master plan document.

E. Unreduced pension at age 62. Other early eligibility and reduction factors – see master plan document.

F. Effective 1/1/10, no new participants will be allowed to participate in the defined benefit pension plan. Therefore, an employee hired or rehired [defined as employees who quit, were discharged or in the event of layoff, have not returned to work in accordance with the provisions of 9.7 (D) or 9.7 (E)] on or after 1/1/10 will not participate in the pension plan and will not be eligible to receive any benefits under the pension plan.

For additional information, see summary plan description.

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