

RESEARCH ARTICLE

Stock investors' reaction to layoff announcements: A meta-analysis

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Does a firm's layoff announcement elicit a negative or a positive reaction from its stock investors? The extant empirical evidence on this question is mixed. The authors' meta-analysis of 34,594 layoff announcements taken from 126 samples featured in 78 studies reports that the average investor reaction is significantly negative (effect size of -0.549). Next, the authors use signaling theory—specifically, characteristics of the signal, the signaler, and the signaling environment—to examine variation in investor reaction. They find that investors do not react if a layoff announcement signals proactive management (e.g., cost cutting) but penalize the firm if the layoff indicates reactive management (e.g., decline in demand). The penalty is also positively associated with layoff size but unrelated to firm size. Further, investors have become less punitive over time, or if its stock is traded on an exchange in civil law (vs. common law) country. The empirical generalizations guide managers on the consequences of their layoff announcements.

KEYWORDS

downsizing, layoff, meta-analysis, stock return

1 | INTRODUCTION

On 3 June 2022, Tesla announced cutting its salaried staff by 10%, citing inefficiency in terms of overstaffing as the reason (Chokshi & Metz, 2022). By some estimates, the layoff news caused a 4% drop in Tesla's stock price (Krantz, 2022). On 2 August 2022, Robinhood—the stock trading app—announced laying off 23% of its employees,

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blaming inflation and the crash of the crypto market (Kelley & Yaffe-Bellany, 2022). Interestingly, investors interpreted this announcement favorably, and Robinhood's stock price *jumped* 15% a day after the announcement (McCabe, 2022). These anecdotes suggest the curious case of stock investors reacting positively to some firm announcements of employee layoffs but negatively to others.

Academics have measured the investor reaction to layoff announcements since 1990 (Abowd et al., 1990; Blackwell et al., 1990; Worrell, Davidson III, & Sharma, 1991). Specifically, they have used the event study method to measure the average value of the announcing firm's cumulative abnormal stock return (CAR) to the announcement/event in a short window surrounding the date of an announcement. Interestingly, consistent with the two anecdotes mentioned above, the empirical evidence is mixed. Whereas some studies have reported that—on average—investors react positively (Brookman et al., 2007; Collett, 2002), reasoning that a firm's layoff announcement signals its top management's attempt to cut unnecessary costs and unprofitable operations. In contrast, other academics have documented a negative reaction (Filbeck & Webb, 2001; Hillier et al., 2007; Spivey et al., 1994), arguing that layoff announcements signal overall poor performance by the top management. A third group of studies has found a statistically insignificant reaction (Goins & Gruca, 2008; Scott et al., 2011), perhaps as a result of the two opposite signals canceling out each other. What is thus needed is an empirical examination of *all* the “primary” studies to compute average of the average reaction reported by individual studies and test whether this “meta-average” is statistically greater than zero or less than zero. Therefore, our first research question is: *What is the average magnitude of investor reaction to a firm's layoff announcement?*

The findings from the extant literature are mixed not only on the valence of investor reaction (i.e., whether positive or negative) but also on the magnitude of the reaction (Brauer & Zimmermann, 2019). Specifically, the literature has recorded that investor reaction to layoff announcements varies from -5.077% (Kunert et al., 2017) to 2.09% (Nzau, 2016). Motivated by this variation, our second research question is: *What explains the mixed findings from extant research?*

Intuition suggests the effect size may vary by the characteristics of (1) the announcement, (2) announcing firm, (3) the environment (e.g., sample period, country), and (4) methodological choices used by the primary studies. Because a firm's layoff is costly to the firm, we view layoff announcement as the firm's signal to its investors. That is, invoking signaling theory (Connelly et al., 2011; Spence, 1973), we create a conceptual framework to explore the heterogeneity by characteristics of (1) the signal (specifically, layoff type and layoff size), (2) the signaler characteristics (i.e., firm size), and (3) the signaling environment (i.e., time, recession, and legal system).

We use the meta-analysis method to answer our two research questions (Duran et al., 2016; Garavan et al., 2021; O'Boyle et al., 2016; Post & Byron, 2015). A meta-analysis quantitatively assimilates findings across periods, settings, and methods (Hunter & Schmidt, 1991). Specifically, our meta-analysis uses 34,594 layoff announcements included in 126 samples from 78 published and unpublished primary studies from multiple disciplines.

We report six key findings. First, on average, investors punish a firm that announces layoff; the average reaction is -0.549% . Second, we classify the primary studies by whether the sampled layoff announcements signal (1) proactive management of the firm's internal problem or external environmental challenges (hereafter, proactive layoff, for brevity), (2) reactive management of such problems and challenges (i.e., reactive layoff), or (3) both. Our subsample analysis reports that, on average, investors do *not* react to proactive layoffs, but penalize the firm for reactive layoffs. These findings are consistent with the argument that managers use anticipatory impression management tactics to suppress investor penalty. Third, layoff size makes the investor reaction more punitive, supporting the intuition that a larger layoff means greater short-term loss to the firm. Fourth, contrary to our hypothesis, investor reaction does not vary by size of the layoff-announcing firm. The theoretical insight is that the negative effect of firm size proffered by logic of media attention cancels out with the positive effects suggested by agency theory and resource-based view of the firm. Fifth, investors' negative reaction has decreased over the years, suggesting that investors have come to expect layoffs. Sixth, consistent with what one would expect based on legal origin theory, investors in civil-law countries are more punitive than their counterparts in common-law countries.

The substantive contribution of our research is to the literature on downsizing and layoffs in providing empirical generalization about the investor reaction to layoff announcements. We help make sense of the disparate findings by showing that—on average—investors react negatively to layoff announcements. Our most interesting and insightful finding is that investors are punitive only when the layoff announcement signals reactive management of the firm's internal problems or external environmental challenges. Alternatively stated, investor reaction is statistically insignificant if the announcement conveys proactive management of the problems and challenges.

The impending economic recession in the world and the layoffs from technology companies worldwide make our findings timely for managers, investors, and financial analysts. Specifically, the empirical generalization helps managers know that, on average, investors will penalize them for laying off employees. However, managers may frame the layoff announcement such that it signals proactive management. Such anticipatory impression management may help eschew investor penalty. Relatedly, our findings inform investors and financial analysts how the former react when they receive news about corporate layoffs. Specifically, in showing that investors punish the firm only if the layoff indicates reactive management, we show that investors are sophisticated and do not engage in a knee-jerk reaction. Financial analysts can use the evidence to predict how the firm may perform in the future based on how investors have reacted to its layoff announcements.

Our research makes two theoretical contributions. First, signals can be positive or negative (Connelly et al., 2011). However, academics have—for the most part—applied signaling theory to positive signals of quality (Erdem et al., 2008; Kirmani & Rao, 2000; Spence, 1973). In viewing a layoff announcement a firm's negative signal that it intentionally sends to stakeholders, we enrich the signaling theory. Moreover, in considering heterogeneity explained by characteristics of the signal, signaler, and signaling environment, we apply the theory in its whole rather than piecemeal. Second, a signal can be managers' anticipated way of managing impressions. Building on this intuition, we integrate signaling theory with anticipatory impression management to make sense of the novel finding that whereas reactive layoffs receive investor penalty, their proactive counterparts avoid any type of reaction. This insight—built on an integration of theories of signaling and impression management—is a novel way of looking at real-world phenomena.

We structure the rest of the manuscript as follows. The next section summarizes the tenets of signaling theory. Subsequently, we present arguments in support of our hypotheses H1 through H6. We enrich these arguments by borrowing rationale from complementary theoretical perspectives, such as those of impression management. The next sections detail our method, analyses, results, and robustness checks. We conclude with a discussion of the implications of our findings for theory and practice.

2 | SIGNALING THEORY

A firm and its stakeholder groups are two agents involved in economic and social valuation of the firm. These stakeholder groups (hereafter, stakeholders, for brevity) include investors, consumers, rivals/peers, employees, suppliers, and the local community in which the firm operates. Unsurprisingly, the firm—or more exactly, its managers—know more and better about the firm than the firm's stakeholders. On the one hand, stakeholders seek higher quantity and quality of information about the firm. On the other hand, managers release information strategically to the stakeholders. *Signaling theory* offers a way of understanding this information exchange.

A *signal* is a deliberate action by one party (the sender/signaler) to communicate its private information that a counterpart (the receiver) values. The information can be about the party's quality,¹ intent, or both. The receiver chooses how to interpret the signal. In sending the signal, the sender hopes that the receiver would take an action that benefits the sender, such as choosing the sender (as an employer, supplier, or investee) over alternatives (Connelly et al., 2011).

Academics have proposed three models of signaling. First, Spence's (1973) model is the dominant paradigm of signaling. Spence (1973) considered a signal to be *credible* only if it is costly. Two examples of Spence-style signals are education (Spence, 1973) and advertising (Kirmani & Rao, 2000). Second is Lacker and Weinberg's (1989) *costly*

state falsification model. The authors used the term “state” for the private information that an agent has and which it releases to the public. The model requires that if the firm were to falsify its state, it must maintain two sets of records: the true set and the false set. The resulting distortion is thus costly to the firm (called falsification cost). The model also requires that the receiver can verify the information post hoc. The third model is Stocken's (2000) *cheap talk*, which reasons that repeated interactions between a firm and its multiple stakeholders make a firm concerned about its reputation and thus imprecise/cheap talk becomes credible and improves outcomes. This concern for credibility/reputation ensures that the firm almost always reveals its private information, provided (a) the interactions are sufficiently repeated, (b) the firm is sufficiently patient, and (c) the revelation is sufficiently useful for assessing the truthfulness.

Although a firm usually sends unambiguously positive signals to its stakeholders, it may occasionally send signals that some stakeholders may perceive negatively. In their review of signaling theory, Connelly et al. (2011, p. 59) noted that “there is little empirical study of such negative signals, how they are unique from other signals.” Employee layoff announcements—the focus of our research—represent one such signal. Other examples include announcements of product recall (e.g., Astvansh & Eshghi, 2023), employee-directed lapses (e.g., Groening, Mittal, & Zhang, 2016) and seasoned equity offering (e.g., Karim et al., 2001).

Stakeholder response to a signal is influenced by characteristics of (1) the *signal*, (2) the *signaler*, and (3) the *signaling environment*. Characteristics of the signal include its *credibility*, which suggests how reliable or trustworthy the signaled information is (Saboo & Grewal, 2013). The greater the costs incurred by the signaler in providing the information, the more credible the receiver interprets the signal to be. Credibility thus separates signal from noise. The other common signal characteristic is the signal's *fit* with the receiver (Boyd et al., 2023), also known as *appropriateness* (Saboo & Grewal, 2013) or *relevance* (Groening, Mittal, & Zhang, 2016) to the receiver. That is, fit refers to “the extent to which the signal corresponds with the sought-after quality of the signaler” (Connelly et al., 2011, p. 52). Signaler characteristics are firm-specific characteristics, such as age and size. Lastly, signaling environment refers to the business environment in which the signal is released. Typical characteristics of the signaling environment include the number of similar signals sent by the signaler or its peers in the recent past, the state of the economy, and the year the signaler sent the signal.

We view a firm's announcement of employee layoffs as a signal from the announcing firm to its stock investors. We next examine the heterogeneity in the investor reaction by characteristics of the signal, the signaler, and the signaling environment (Figure 1).

3 | HYPOTHESES

3.1 | Investor reaction to layoff announcement as signal

A firm's layoff announcement conveys to the firm's investors (and other stakeholders) information that is unobservable and thus valuable to them. In addition, a layoff announcement is costly to the firm (Brauer & Zimmermann, 2019). Consequently, we view a firm's layoff announcement as the firm's *signal* to its investors (Filbeck & Webb, 2001; Ursel & Armstrong-Stassen, 1995).

The literature has suggested five reasons why investors—on average—react negatively to a firm's announcement of employee layoff. First, because a layoff-announcing firm likely makes severance payments to laid-off employees (Brauer & Zimmermann, 2019) and/or negotiate/litigate with employee unions (Velásquez et al., 2018), a layoff hurts the firm's cash flow in the immediate future (Cascio, 1993). Second, employees who survive the layoff may lack commitment toward the firm or perform less well relative to the pre-layoff period (Paulsen et al., 2005; Van Dierendonck & Jacobs, 2012). Layoff may thus lower employee satisfaction and morale (Harney et al., 2018), which may, in turn, hamper the firm's near-term performance. Third, the firm loses the knowledge capital of the laid-off employees (Nixon et al., 2004). Such loss may cause a decline in the firm's performance in knowledge-intensive areas, such as sales, research and development, and innovation. Fourth, a layoff announcement jeopardizes customer trust, leading to lower satisfaction (Lewin, 2009)

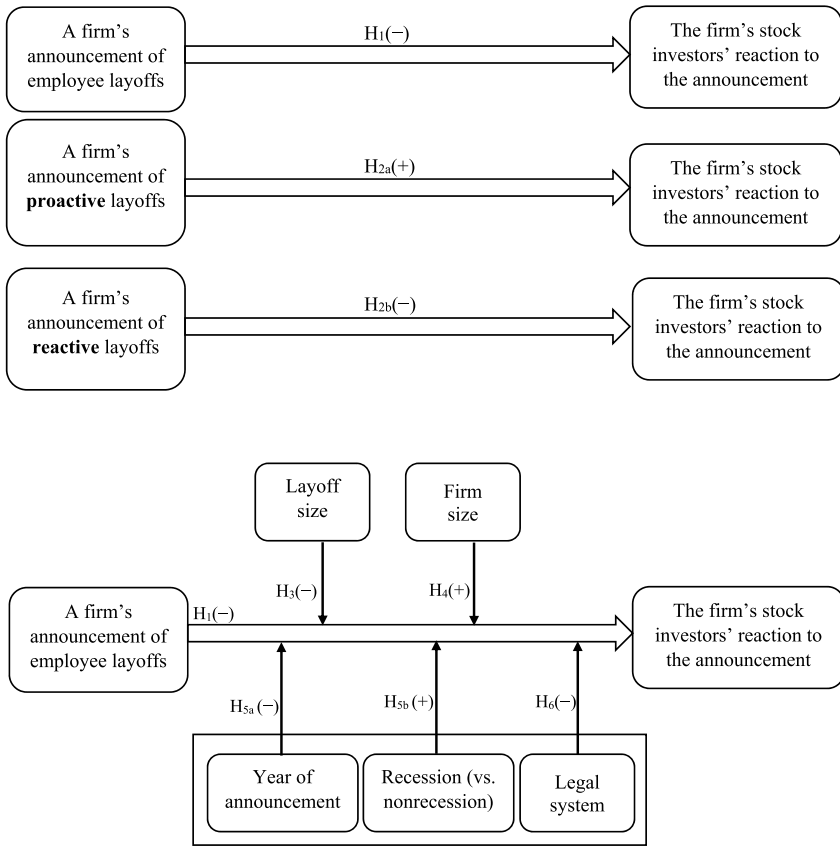


FIGURE 1 Conceptual framework.

and a loss of reputation (Flanagan & O’Shaughnessy, 2005; Landsman & Stremersch, 2020). Worse case, customers may be less willing to support the firm (Landsman & Stremersch, 2020). Therefore, investors expect a loss of sales and, thus, a lower level of cash flow in the future. Fifth, a layoff decision indicates the firm’s low performance, financial trouble (Bichescu & Raturi, 2015; Iqbal & Shetty, 1995; Lee, 1997), or unfavorable environmental changes such as a decline in future demand (Cagle et al., 2009; McKnight et al., 2002). These five reasons lead us to the following hypothesis:

Hypothesis (H1). On average, a firm’s layoff announcement elicits a negative reaction from its stock investors.

The magnitude of the firm’s investors’ punitive reaction to a layoff announcement may depend on the characteristics of the *signal* (i.e., layoff type and layoff size), *signaler* (i.e., size of the layoff-announcing firm), and *signaling environment* (e.g., time, state of economy, and the legal system) (Bhana, 2002; Lee, 1997; Nixon et al., 2004; Worrel et al., 1991). We next offer our hypotheses on how these characteristics explain the heterogeneity in investor reaction to layoff announcements.

3.2 | Signal characteristics

3.2.1 | Layoff as proactive versus reactive management

A firm lays off employees for predominantly two reasons. Some layoffs are undertaken to restructure the firm. The restructuring aims to boost the firm’s efficiency and competitiveness (Chadwick et al., 2004; Worrel et al., 1991).

Conversely, a firm may lay off employees due to changes in the market, such as a fall in demand or internal financial problems. Accordingly, some primary studies have classified a firm's layoff announcement as its *proactive* management of its internal or environmental issues or the *reactive* management thereof, respectively (hereafter, "proactive layoffs" and "reactive layoffs," respectively, for brevity).

On the one hand, a proactive layoff signals that the firm has thought through the benefits and costs of layoff and found the layoff decision optimal for future performance (Geoffrey Love & Nohria, 2005). Following this strategy, firms usually lay off employees (1) to increase productivity and efficiency, (2) to restructure/reorganize themselves to boost their competitiveness (Chen et al., 2001; Palmon et al., 1997), and/or (3) to expedite decision-making and communication (Brauer & Zimmermann, 2019). Should these reasons underlie the firm's layoffs, its investors may view these layoffs as enhancing future cash flow and thus reward the firm (Blackwell et al., 1990; Elayan et al., 1998; Lin & Rozeff, 1993).

On the other hand, a reactive layoff signals that the firm has not well managed the situation and is now catching up (Geoffrey Love & Nohria, 2005). The investors would interpret a reactive layoff as substantial damage to the firm's expected cash flow in the future. They would, thus, penalize the firm by driving down its stock price (Elayan et al., 1998; Gunderson et al., 1997; Lee, 1997; Schweizer & Bilsdorfer, 2016).

Besides signaling theory, impression management theory makes the same prediction (Graffin et al., 2016; Lee, 1997). As a rational entity, a firm tries to provide sufficient and logical reasons for its managerial decisions, aiming to manage favorably its impressions on its investors. Managers of a layoff-announcing firm know that a proactive framing of a layoff may suppress investor penalty, or—in the best case—earn a reward from investors. They also know that a reactive framing may receive a stronger penalty and may damage their own compensation and future career prospects. Therefore, to the extent that managers avail of anticipatory impression management, and such management is effective, investors will react positively to proactive layoff announcements but negatively to their reactive counterparts. Therefore, we propose:

Hypothesis (H2a). A firm's proactive layoff announcement elicits a positive reaction from its stock investors.

Hypothesis (H2b). A firm's reactive layoff announcement elicits a negative reaction from its stock investors.

3.2.2 | Layoff size

The literature suggests three reasons why layoff size amplifies the negative reaction—on average—from investors of the layoff announcing firm. First, a large-scale (vs. small-scale) downsizing causes a greater loss in knowledge capital (Nixon et al., 2004). Second, a large (vs. small) layoff could result in more damage to internal routines and networks. Indeed, by virtue of removing a large number of employees who serve as nodes in the firm's network and organizational structure, a large (vs. small) layoff causes a greater omission and disruption in the firm's knowledge network and routines (Brauer & Laamanen, 2014). Third, large-scale downsizing amplifies negative survivor effects, and potential turnover rates (Krishnan et al., 2007), leading to greater loss in knowledge capital and structure. Overall, the magnitude of layoff signals the severity of firm's problems (Lee, 1997). The larger the magnitude of the layoff, the greater the direct and indirect costs of layoff such as severance payment and turnover rate. Therefore, we propose:

Hypothesis (H3). The size of a firm's layoff exacerbates the negative reaction from its stock investors.

3.3 | Signaler characteristic

3.3.1 | Firm size

Firm size proxies information asymmetry between the firm's managers and its investors. That is, the larger the firm, the less well-informed the investors. Primary studies have reported mixed findings on the effect of a layoff-announcing

firm's size on its investors' reaction. Some studies have reported a statistically insignificant relation (e.g., Brauer & Zimmermann, 2019; Chalos & Chen, 2002), whereas others have confirmed that a larger firm receives lower penalty than its smaller counterpart (e.g., Fama & French, 1992; Schulz & Himme, 2022). We draw upon the theoretical lenses used by these primary studies to establish our hypothesis.

The agenda setting theory of mass media (McCombs & Shaw, 1972) and the concomitant logic of media reputation (Deephouse, 2000) suggest that, on average, larger firms receive more media attention than their smaller counterparts. This attention amplifies in the context of negative news that are relevant to society, such as employee layoffs (Filbeck & Webb, 2001). Because the stock price of a larger (vs. smaller) firm is more volatile, a larger firm may receive stronger investor reaction than its smaller counterpart.

Interestingly, agency theory (Jensen & Meckling, 1976) and resource-based view of the firm (Wernerfelt, 1984) suggest the opposite—that is, the larger a layoff-announcing firm, the lower penalty it receives from its investors. Specifically, these theories offer three reasons why firm size suppresses investor penalty. First, agency theory posits that managers in large (vs. small) firms have lower incentives to downsize due to pecuniary and nonpecuniary benefits that they gain from managing a “large” firm (Datta et al., 2010). Therefore, when larger firms decide to downsize, the shareholders would view it as an efficiency-enhancing decision and react less negatively toward it. Second, because a larger firm has superior access to capital markets, diverse sources of income, and lower costs for capital, it absorbs negative financial shocks better than a smaller firm (Hendricks & Singhal, 2005). As such, following a layoff announcement, the changes in cash flow of a large firm tend to be smaller, and the deceleration in cash flow is less steep compared to a smaller firm. The smaller the negative impact on future cash flow of a firm, the smaller the negative reaction from its investors.

On average, we reason that the logics of agency theory and resource-based view of the firm will override the rationale of the media reputation. Therefore:

Hypothesis H4. The size of a layoff-announcing firm suppresses the negative reaction from stock investors.

3.4 | Signaling environment

3.4.1 | Time and recession

On the one hand, research on human resources management (HRM) practices *during recession* has attracted little attention from HRM academics (Johnstone, 2023). On the other hand, the literature on the stock investors' reaction to layoff announcements has emphasized the importance of considering the year of layoff when assessing investor reaction (Farber & Hallock, 2009; Marshall et al., 2012). Interestingly, the evidence from these studies is mixed. For instance, Abowd et al. (1990) found an insignificant investor reaction to layoffs announced between 1980 and 1987. Chatrath et al. (1995) reported insignificant reactions to layoffs announced during the 1981–1983 and 1984–1990 periods but positive reactions to announcements during 1991–1992.

Aiming to explain these mixed findings, a few studies have suggested that investor reaction varies by the year of announcement. However, the results are inconclusive for these studies as well. Specifically, Farber and Hallock (2009) and Farber and Hallock (1999) suggested that investors react less harshly to more recent layoffs. However, McKnight et al. (2002) reached the opposite conclusion. Blanchard's (1981) model showed that, in equilibrium, the same news can sometimes help the firm's financial performance and hurt it at other times. More importantly, the *state of the economy* determines whether the effect is helpful or hurtful. Relatedly, some studies on layoff announcements and investor reactions have connected the period to the economic situation. During recession, firms are often under duress to cut costs such as labor costs (Zeitoun & Pamini, 2021). Investors may react *less* severely to a layoff during difficult economic times (e.g., recession) relative to their reaction to a layoff in business-as-usual circumstances (Brauer & Zimmermann, 2019). Following Boyd et al. (2005), we propose that the investor reaction to

layoff announcements depends on the state of the economy. Specifically, we hypothesize that investors' reaction to a layoff is less punitive in more recent (vs. distant) times and during economically challenging (vs. business-as-usual times).

Hypothesis (H5a). The negative reaction from stock investors of a layoff announcing firm is larger for less recent layoffs when compared to more recent layoffs.

Hypothesis (H5b). The negative reaction from stock investors of layoff announcing firm is smaller during years of recession compared to those of nonrecession.

3.4.2 | Legal system

The legal origin theory (La Porta et al., 1999) classifies countries based on whether they follow common law or civil law. Countries such as the United Kingdom, United States, Canada, and other English-speaking ones follow common-law systems, which place a strong emphasis on case law. Conversely, countries such as France, Germany, and Japan follow civil law, which is characterized by codified law. Case law refers to the body of legal principles and rules that are based on judgments on precedent or prior cases. In contrast, codified law follows legal codes and statutes that are enacted by legislative bodies, such as the U.S. Congresses (Von Mehren, 1997). This difference means that whereas case-law judicial system relies on judges' subjective interpretation, codified law relies more on objectivity.

These legal systems have impacted the economic development of countries and firms that operate in these countries. Because variation in legal systems translates into heterogeneity in legal and regulatory environments, investors in these two groups of countries may react differently to similar events (Banker et al., 2013; Gerlach et al., 2006). Therefore, comparing the reactions to announcements by firms in common law countries and those by firms traded in civil law countries can be insightful.

We suggest two reasons why stock investors in common-law countries are less punitive than their civil-law counterparts toward announcements of layoffs.

First, financial markets (e.g., New York Stock Exchange or London Stock Exchange) are more developed and mature in common-law countries. Such development and maturity translate into stronger investor protection and financial-law enforcement (Atanassov & Kim, 2009; La Porta et al., 2000). Regulatory bodies, such as the U.S. Securities and Exchange Commission or the U.K.'s Financial Conduct Authority, administer and control stock market activities.

Second, HRM practices and employee/labor unionization vary across countries (Goergen et al., 2013; Moy & Sorrentino, 1981). Civil-law countries have adopted more comprehensive labor laws that codify labor rights and procedures, providing a more structured legal framework for unions (Snikersproge, 2023). In contrast, in common-law countries—where labor laws related to unions are usually based on case law—courts play a crucial role in interpreting the labor law. In fact, employer rights are weaker, while employee rights are stronger in civil-law countries, and the opposite is true in common-law countries (La Porta et al., 2000). Therefore, firms located in common-law countries (vs. those in civil-law countries) should have fewer impediments to lay off employees. Moreover, the role of unions has strengthened in civil-law countries compared to common-law countries in the past few decades (Atanassov & Kim, 2009). For example, in the 1950s, a third of U.S. workers were members of employee/labor unions. In 2022, this number reduced to about 10%.² Civil-law countries have a higher level of union coverage than countries with common law, such as the United States. For example, more than 75% of workers in Denmark, Sweden, and Finland are members of labor unions.³ Consequently, layoffs are less costly in common-law countries than in civil-law countries (La Porta et al., 2000).

When weak investor protection intertwines with strong union laws—which is more common in civil-law countries—we expect that common-law financial markets (e.g., United States) react to a layoff-announcing firm less punitively than their civil-law counterparts (i.e., mostly European and Asian).

Hypothesis (H6). The negative reaction from stock investors of a layoff-announcing firm is larger for firms whose stock is traded on a stock exchange located in a civil-law country than for firms whose stock is traded on a stock exchange located in a common-law country.

4 | METHOD

We undertake a meta-analysis of primary studies to (1) measure the average value of investor reaction to a firm's layoff announcement (that is, test our H_1), and (2) examine the heterogeneity in the investors' reaction based on the characteristics of the signal, signaler, and signaling environment (that is, test our H_2 through H_6). Online Appendix A documents how we (1) collected and coded primary studies and (2) estimated the effect sizes. Our final sample consists of 34,594 announcements included in 126 samples⁴ in 78 studies. Table 1 lists these variables and describes how we coded the values of each.

Tables A1 and A2 in the Online Appendix provide, respectively, the descriptive statistics for each variable and correlation coefficient for each pair of variables.

TABLE 1 Variable key.

Variable name	Label	Description
Cumulative abnormal return	CAR	The mean value of the layoff announcing firm's cumulative abnormal stock return (CAR) to the layoff announcement; reported by the primary study.
Layoff strategy	Layoff	We coded layoff announcements into two subsamples: Reactive layoffs and proactive layoffs. Studies that used reasons such as a decline in demand, financial distress, or low earnings are assigned to reactive subsample, while studies that used reasons such as cost cutting, operational consolidation, efficiency boosting, or restructuring/reorganization are assigned to proactive subsample.
Confounding treatment	Confound	= 1 if the primary study controlled for confounding events around the layoff announcement date, and 0 otherwise.
Time (in years)	Time	The median year of the sample period of the primary study
Recession	Recession	= 1 if the sample period of the study included any one or more of the recession periods: Jan 1980-Jul 1980 Jul 1981-Nov 1982 Jul 1990-Mar 1991 Mar 2001-Nov 2001, and Dec 2007-Jun 2009, and 0 otherwise.
Legal system	Legal system	= 1 if the primary study sampled firms whose stock was traded on an exchange located within common law countries, and 0 if the primary study sampled firms whose stock was traded on an exchange located within civil law countries.
Type of market model	Market model	= 1 if the primary study used the one-factor model, and 0 otherwise (that is, used any other model, such as the Fama-French three-factor model).
Event window	Length of event window	The number of days included in the event window of the primary study.
Estimation window	Length of estimation window	The number of days included in the estimation window of the primary study.
Publication quality	Publication quality	= 1 if the primary study was published in the Financial Times' list of 50 business journals, and 0 otherwise.

5 | ANALYSES AND RESULTS

5.1 | Meta-analysis method

To estimate the average effect of investor reaction to layoff announcements, we recorded the sample size and mean CAR from every primary study. However, like all meta-analyses, ours is marred by four challenges: (1) publication bias, (2) missing and incomplete data from primary studies, (3) independence of these studies, and (4) the precision in their effects. Online Appendix B states how we addressed these challenges.

5.2 | Results

We report the results in two main sections. We test H_1 , H_{2a} , and H_{2b} ⁵ by reporting the univariate analysis of the aggregate effect of layoff announcements on stock return. Next, we use bivariate correlation analysis to test H_3 and H_4 . Lastly, we present the results of meta-analytic regression analysis (MARA) (the MARA) to test H_{5a} , H_{5b} , and H_6 .

5.2.1 | Univariate analysis

Table 2 reports the results of our univariate analysis for different subsamples. We first tested the significance of the average value of mean CAR for the entire sample. Overall, on average, investor reaction to layoff announcements is negative and significant (average of mean CAR = -0.549 , $p < 0.001$), supporting our H_1 . Next, we repeated the analysis by removing the outliers, which yielded a similar result (average of mean CAR = -0.555 , $p < 0.001$). In addition, the Wilcoxon signed-rank test results show that median values of mean CAR (including and excluding outliers) are significantly ($p < 0.05$) different from zero. We also tested the magnitude and significance of the average value of mean CAR for five sub-samples of primary studies based on the length of window (i.e., $[-2,2]$, $[-1,0]$, $[-1,1]$, $[0,1]$, and $[0,0]$). The average value for each of the five subsamples is negative and significant ($CAR_{[-2,2]} = -0.91$, $p < 0.01$; $CAR_{[-1,0]} = -0.65$, $p < 0.01$; $CAR_{[0,1]} = -0.68$, $p < 0.05$; $CAR_{[-1,1]} = -0.52$, $p < 0.001$; $CAR_{[0,0]} = -0.19$, $p < 0.05$).

We next tested H_{2a} and H_{2b} by dividing the observations into two subsamples: subsample of layoffs that signal proactive management and subsample of layoffs that indicate reactive management (proactive layoffs and reactive layoffs, respectively). The average value of mean CAR for the subsample of proactive layoffs is insignificant ($CAR = 0.134$, $n = 38$), indicating that investors do not react to layoff announcements that signal proactive management. This finding rejects our H_{2a} . However, the average value of mean CAR for the subsample of reactive layoffs

TABLE 2 Investor reaction to layoff announcement (random-effect meta-analysis).

	N studies	Sample	Mean CAR	t-stat	Median	Std dev	Min	Max	Fail-safe N	Q-statistic
CAR	78	126	-0.549	-6.184***	-0.625	0.997	-5.077	2.09	352	646.935***
CAR without outliers	73	121	-0.555	-6.023***	-0.640	1.014	-5.077	2.09	418	594.858***
Proportion of negative CARs ^a	23	31	0.170** ^b	0.542*** ^c	0.546	0.026	0.360	0.760	305	56.629**

^aWe discuss this effect size (i.e., the proportion of negative CARs) in the robustness checks section.

^bThis is the average effect size before transformation (logit).

^cThis is the average transformed back logit (proportion).

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

is negative and significant ($CAR = -1.399, p < 0.001, n = 36$), indicating that investors penalize firms whose layoff announcements signal reactive management. This result thus supports our H_{2b} .

5.2.2 | Interrelationship analysis (firm size and cumulative abnormal stock return)

We conducted a bivariate correlation analysis (1) between mean CAR from layoff announcements and layoff size (for H_3) and (2) between this mean CAR and firm size (for H_4). Table B1 (Online Appendix B) reports the results of the interrelationship analysis. The correlation between CAR and layoff size based on 17 studies (19 samples and 5065 announcements) is significantly negative (effect size = $-0.056, p < 0.01$). This result supports our H_3 , suggesting that as the layoff size increases, investor penalty becomes larger. Based on 18 studies (22 samples and 5353 announcements), the correlation between CAR and firm size is insignificant, rejecting our H_4 .

5.2.3 | Meta-Analytic Regression Analysis

Next, we use a MARA—a weighted least squares regression (Lipsey & Wilson, 2001)—to test H_{5a} , H_{5b} , and H_6 . We regress the mean CAR from the primary study on the sample period and the country of the stock exchanges. We control for (1) whether the primary study excluded layoff announcements that are confounded with other concurrent news about the same firm (variable name: *Confound*), (2) whether the sample period included any one or more of the recession periods (see Table 1 for time periods) (*Recession*), (3) whether the primary study used a three/four-factor market model or its simplest one-factor counterpart (*Market model*), (4) whether the primary study was published in a Financial Times journal (*Publication quality*), (5) the length of the estimation window (*Length of estimation*), and (6) the length of the event window (*Length of event window*).

Table 3 reports the MARA results. Models 1 and 2 use the full sample and the sample without outliers, respectively. Because not all studies explicitly reported the market model and the estimation window they used, these two models do not include the control variables of the market model and the length of the estimation window. Models 3 and 4 also use the full sample and the sample without outliers, respectively. However, these two models include the market model and the length of the estimation window used by the primary studies. A negative (positive) coefficient indicates that the corresponding variable strengthens (weakens) the stock investors' negative reaction to a layoff announcement.

The coefficients for the *Time* variable are positive and significant in all models, indicating that, over time, investors have become less punitive in their reaction to layoff announcements. These results thus provide partial support for H_{5a} .

The coefficient for *Recession* (indicator variable) is negative and insignificant, not supporting H_{5b} that investors punish the layoff announcing firm more during times of economic recession.

The coefficients for *Legal system* are positive and marginally significant in all models, indicating that investors are more punitive toward firms that are traded on exchanges located within civil law systems relative to firms that are traded on stock exchanges located in common law countries. The results thus support H_6 .

We did not find any significant relationship between primary study's mean CAR and six control variables (i.e., *Length of event window*, *Confounded events*, *Length of the estimation*, *Publication quality*, and *Market model*).

6 | ROBUSTNESS CHECKS

We test the robustness of our results to (1) alternate method of univariate meta-analysis, (2) test of layoff type (H_{2a} and H_{2b}), (3) alternate measure of investor reaction, and (4) type of t-statistic. Online Appendix C details the tests.

TABLE 3 Meta-analytic regression analysis (MARA) results.

	(1)	(2)	(3)	(4)
	CAR (t-value and p-value)	CAR (t-value and p-value)	CAR (t-value and p-value)	CAR (t-value and p-value)
Time (H_{5a})	0.03 (2.89 0.005) [0.01]	0.04 (3.01 0.003) [0.01]	0.04 (2.76 0.007) [0.01]	0.03 (2.39 0.019) [0.02]
Recession (H_{5b})	-0.30 (-1.50 0.136) [0.20]	-0.28 (-1.40 0.165) [0.20]	-0.28 (-1.27 0.208) [0.22]	-0.34 (-1.49 0.141) [0.23]
Legal system (H_6)	0.55 (1.97 0.052) [0.28]	0.61 (2.11 0.037) [0.29]	0.67 (1.94 0.055) [0.35]	0.60 (1.70 0.093) [0.35]
Publication quality	0.09 (0.33 0.746) [0.28]	0.13 (0.45 0.656) [0.28]	0.08 (0.25 0.801) [0.30]	0.11 (0.36 0.723) [0.30]
Confound	-0.11 (-0.60 0.547) [0.18]	-0.09 (-0.51 0.612) [0.18]	-0.21 (-1.09 0.278) [0.19]	-0.16 (-0.83 411) [0.19]
Length of event window	-0.08 (-1.16 0.247) [0.07]	-0.10 (-1.40 0.165) [0.07]	-0.06 (-0.83 0.407) [0.07]	-0.07 (-0.97 0.333) [0.07]
Length of estimation			0.001 (0.85 0.396) [0.001]	0.001 (0.33 0.741) [0.002]
Market model (one-factor model)			0.20 (0.30 0.764) [0.68]	-0.88 (-0.93 0.355) [0.95]
Intercept	-63.72 (-2.88 0.005) [22.12]	-69.35 (-3.01 0.003) [23.06]	-69.82 (-2.74 0.007) [25.51]	-60.84 (-2.31 0.023) [26.31]
#Samples	121 ^a	117	107	103
Adj R-squared %	9.32	10.80	9.56	11.43
F-value (p-value)	3.05 (0.008)	3.34 (0.005)	2.41 (0.020)	2.65 (0.011)

Note: Standard errors are in brackets.

^aFive studies have samples from multiple countries (e.g., Europe or Global). We were not able to code these studies based on the legal system. So, we have 121 samples instead of 126.

7 | DISCUSSION

This manuscript measures the investor reaction to corporate announcements of employee layoffs and examines variation in the reaction based on characteristics suggested by signaling theory. We report six findings. First, on average, investors punish the layoff-announcing firm. Second, the penalty exists for reactive layoffs and not for proactive layoffs. Third, the more the number of employees laid off (i.e., layoff size), the more punitive the investors. Fourth, size of the layoff-announcing firm does not influence investors' reaction. Fifth, investors have become less punitive over the years. Sixth, firms in common law countries receive lower penalty than firms in civil law countries. We next discuss the implications of these findings for theory and practice.

7.1 | Implications for theory

Our research makes two theoretical contributions.

First, academics from varied disciplines have used signaling theory to explain firm actions that provide information to the firm's stakeholders and thus mitigate information asymmetry between the two parties. However, this

usage has focused on firm actions that communicate *unambiguously positive* information (e.g., product quality) to its stakeholders. As Connelly et al.'s (2011) review of the signaling theory highlighted, there lies an opportunity to contribute to signaling theory by applying it to a firm's "negative actions"—such as announcement of employee layoffs. We leverage this opportunity. First, we reason that because a layoff is costly to the firm, it is the firm's signal to its stakeholders. Importantly, because a layoff is likely to impede a firm's performance in the short-term, the signal is *negative* in valence. In examining a firm's negative (as opposed to positive) signal, we contribute to the signaling theory. In addition, in hypothesizing and empirically demonstrating heterogeneity in signal-receiver's reaction based on characteristics of the signal, signaler, and signaling environment, we provide a complete (as opposed to piecemeal) application of signaling theory. Such holistic application allows us to reconcile the mixed results from prior primary studies on investor reactions to layoff announcements.

Second, managers likely know that the layoff announcement will elicit a penalty from investors. Anticipating this penalty, managers may use impression management tactics to frame their layoff to suppress the penalty. Primed by this intuition, we integrate the signaling theory with anticipatory impression management theory to theorize that whereas a reactive layoff would elicit the penalty, its proactive counterpart may not receive the punitive reaction, and perhaps even earn a reward from investors. Our empirical finding supports this theory. That is, on average, reactive layoffs receive a penalty, whereas proactively framed announcements receive no reaction.

7.2 | Implications for practice

We organize the implications of our research in a question-and-answer format.

1. *On average, do stock investors reward or penalize a firm for announcing layoffs?* Penalize! The finding helps HRM managers and officers of a firm know that, on average, investors will penalize the firm for laying off employees. This finding becomes particularly timely as the economics in most countries are anticipating recession and technology firms are laying off employees.
2. *How can a firm mitigate or prevent the punitive reaction?* A firm can nullify investor penalty by framing the layoff announcement to indicate its *proactive* management of its internal problems or external environmental challenges. Equally—if not more importantly—the firm's announcement should *not* indicate reactive management of its problems and challenges. For example, on 9 November 2022, Meta Platforms, Inc. announced laying off about 13% or 11,000 employees to "become a leaner and more efficient company" (Meta Platforms Inc, 2022). On 14 March 2023, Meta announced a layoff of another 10,000 employees, framing the layoff as a means to make the firm more efficient (Meta Platforms Inc, 2023). The two announcements caused Meta's stock price to climb by 5% (Capoot, 2022) and 1% (Bushard, 2023), respectively, indicating that investors rewarded efficiency-driven, or proactive layoffs. Our research informs layoff-announcing firms that reactive layoffs evoke a penalty, whereas proactively framed announcements elicit no reaction from stock investors. Managers can use our findings to know how to position their layoffs.
3. *Has investor penalty to layoffs increased or decreased over time?* Decreased! We attribute this decrease to layoff becoming less surprising and investors factoring them into their expectations. Consistent with our finding, recent primary studies in our sample have documented an insignificant (Bassanini et al., 2020) or positive investor reaction to layoff announcements (Floros et al., 2021). However, we caution managers that event studies measure investors' immediate-term reaction to an event. Although investors may have become less punitive to layoff announcements over time, our evidence does not speak to their longer-term reaction, which may be punitive or rewarding.
4. *Who is less punitive: investors in common-law countries or those in civil-law countries?* Those in common-law countries, such as the United States. We reason that common-law countries (vs. civil-law countries) have more matured financial markets and stronger employer rights. Consequently, investors in common-law countries are better informed than those in civil-law countries and thus the former have less reason to react more sharply, whereas the latter have reason to estimate the worst-case scenario and thus tend to react more punitively.

5. *Does a large layoff hurt more than a smaller layoff?* Yes! Managers may reason that investors react to the occurrence of a layoff announcement rather than the size of the layoff. We correct such misconception by showing that investors consider the number of laid off employees to estimate the damage to cash flow. Also, investors may penalize a large layoff disproportionately because it may indicate that managers accumulated the negative news. If managers believe that layoff is a solution to the firm's problems, they must not let the problems pile up and announce a large layoff. Instead, they should proactively engage in smaller layoffs.
6. *Do large firms receive less or more penalty relative to their smaller counterparts?* Neither! Because larger firms have greater slack resources to absorb a short-term shock, such as the severance payments to laid-off employees, one would expect investors to react less punitively to layoffs by larger firms. However, the counterargument holds as well. Larger firms receive greater media attention, particularly on negative actions that are relevant to the society. Therefore, higher volume and more negative coverage from media may cause investors to react more punitively toward larger firms. Because the empirical evidence suggests no difference in investor reaction for large firms and small firms, we conjecture that the two theoretical reasons cancel out. Managers of large layoff-announcing firms should not assume that their firms' size would mitigate investor penalty.

7.3 | Limitations

Our study is limited in at least four ways, each of which merits further research.

First, we focus on stock investors' reaction to layoff announcements. Future research can consider how a firm's layoffs impact responses from its other stakeholders, such as consumers, suppliers, rivals, top managers, and financial analysts. Such consideration would enrich theory because investors and these other stakeholders have different—potentially, competing or conflicting—interests (Li & Wu, 2020). Firm actions that receive a reward from shareholders may evoke a penalty from other stakeholders because these stakeholder groups diverge on their interests. The context of layoff makes the conflict-of-interest between shareholders and other stakeholders acute and can help develop and test the theory.

Second, insufficient number of primary studies prevented us from measuring the relationship between the investor reaction to layoff announcements and firm-level variables such as prior performance and financial leverage. As the layoff literature accumulates more empirical studies, a future meta-analysis can consider addressing this shortcoming in our research.

Third, insufficient number of primary studies (only five studies) prevented us from examining whether a firm's layoff announcement elicits a favorable reaction or an unfavorable reaction from its rivals' investors. Madura et al. (1995) found a positive reaction, supporting the competition (as opposed to contagion) effect. In contrast, Goins and Gruca (2008) showed a contagion effect. A future meta-analysis could identify conditions under which these two opposite effects exist.

Fourth, few event studies investigate the long-term impact of layoff announcements, measured by the Buy-and-Hold Abnormal Returns (BHARs) or Calendar-Time Portfolios Abnormal Returns (Mace, 2020; Scott et al., 2011). Scott et al. (2011) found that investor reaction in the long term is negative, whereas Mace (2020) showed that layoffs result in higher returns after 3 years. These inconsistent findings call for future investigation into the long-term impact of layoff announcements on stock return.

In summary, we believe our meta-analysis offers useful insights for theory and practice, while providing avenues for future research.

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Not applicable.

CONFLICT OF INTEREST STATEMENT

The authors declare that they have no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available in EBSCO at <https://libraries.indiana.edu/>.

ENDNOTES

- ¹ "Quality refers to the underlying, unobservable ability of the signaler to fulfill the needs or demands of an outsider observing the signal" (Connelly et al., 2011, p. 43).
- ² <https://www.bls.gov/news.release/union2.nr0.htm>
- ³ <https://www.vox.com/policy-and-politics/2017/4/17/15290674/union-labor-movement-europe-bargaining-fight-15-ghent>
- ⁴ Some studies have more than one sample. Please see Online Appendix (Table D1) for the list of included studies.
- ⁵ We also tested H_{2a} and H_{2b} using meta-analytic regression in the robustness check with smaller sample size.

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SUPPORTING INFORMATION

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