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Managerial Prosocial Preferences and Guilt as an Emotional Barrier to Exit Decisions

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Abstract. Despite economic setbacks, managers may resist exiting to avoid harming employees who will lose their jobs. We propose that managers with higher prosocial preferences set lower exit thresholds and select conservative investments that reduce the risk of having to exit because they experience stronger feelings of anticipatory guilt. Our field study shows that, in responding to intensifying Chinese import competition, prosocial managers are less likely to exit or divest. Our experiments ($N = 1{,}411$), including a sample of senior executives, show that anticipatory guilt mediates the negative effect of prosocial preferences on exit thresholds and risky investments. Anticipatory guilt and its effect are stronger when employees suffer greater harm from the firm's exit due to the absence of social insurance programs, such as public health insurance or unemployment insurance. Our study presents an emotion-processual account of firm exit decisions and highlights anticipatory guilt as an emotional barrier to efficient decision-making.

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> I understood the human consequences of my decision: it wasn't just a business that was closing, people's lives were involved. When a plant shuts down, it's traumatic for everyone involved.[1] —Susan T. Spencer

1. Introduction

Evolutionary biology research highlights the care for others as a fundamental aspect of how humans organize and adapt (Becker 1976, Axelrod and Hamilton 1981, Fehr and Fischbacher 2003). Managers, of course, are humans, yet there is deep-seated skepticism about whether managers care for their employees and whether their prosocial preferences can affect corporate strategic decisions made under external scrutiny and financial pressures (Fehr and Schmidt 1999, Keum and Meier 2024). Even when chief executive officers (CEOs) invest in employee relations and act prosocially, these actions are often viewed skeptically as reflecting their narcissistic need for praise (Tang et al. 2015, Petrenko et al. 2016) or strategic investments in employee productivity (Bénabou and Tirole 2010, Flammer and Luo 2017, Burbano and Chiles 2021). In this study, we examine how managers' desire to care for their employees and avoid feelings of guilt from harming them impedes corporate restructuring, in particular, firm exit decisions.

Firm exit is a variable of foundational interest to research on firm growth and resource allocation (Harrigan 1980, Davis et al. 1996, Guler 2007, Kaul 2012, Elfenbein and Knott 2015, Lieberman et al. 2017). Models of firm entry-exit dynamics often characterize firm exits as a predetermined financial variable that leaves little room for managerial agency (Jovanovic 1982, Dixit 1989, Hopenhayn 1992, Chang 1996, Klepper 1996), for example, as a hard stop imposed by the inability to repay maturing debt, exemplified by metrics such as Altman's Z bankruptcy score (Altman 1968). In contrast, corporate strategy research views exiting as a strategic decision made under significant economic uncertainty (Porter 1980, Levinthal and Wu 2025). Accordingly, this literature emphasizes the role of managerial decision making (Adner and Helfat 2003, Guler 2018) and documents a comprehensive list of self-centered biases that explain why managers escalate commitment and persist with questionable businesses, such as their own job security (Jensen 1993, Gormley and Matsa 2016) and overconfidence (Malmendier and Tate 2015, Schumacher et al. 2020).

We propose that firm exit and restructuring decisions may not only be biased by "dark" self-centered characteristics. They are also influenced by managers' concern for others. In particular, incumbent

employees represent an essential yet under-discussed stakeholder who lacks the ability to diversify their exposure and is most acutely affected by a manager's decision to exit. A firm exit often results in mass layoffs, a traumatic event for its employees who rely on its continued operations for their livelihood, food purchases, social contact, and medical insurance for themselves and their families (Sullivan and Von Wachter 2009, Wanberg 2012). To the extent that managers are prosocial and not solely self-centered, they may anticipate feelings of guilt from causing harm to their employees and take actions to avoid this negative moral emotion.

A nascent but influential body of management research explores the role of emotions such as fear, anger, or anxiety in managerial decision making (Hodgkinson and Healey 2011, Vuori and Huy 2022, Wang et al. 2023). However, by downplaying or rejecting CEO prosocial preferences, this research presents a dispassionate view of corporate restructuring decisions devoid of moral emotions. Our emotion-processual model (Figure 1) suggests that managers with stronger prosocial preferences (1) anticipate greater feelings of guilt from harming their employees and (2) hence set lower exit thresholds (i.e., the minimum level of firm performance managers are willing to accept before choosing to exit) and select less profitable yet safer investments that reduce the risk of having to exit, (3) especially when exiting causes more severe harm to their employees. For example, prosocial managers may persist until return on assets falls to zero rather than 3%, especially when employees' medical insurance coverage depends on continued employment.

Measuring managers' psychological characteristics poses a foremost challenge in behavioral CEO research (Harrison et al. 2019, Recendes et al. 2022). We adopt a multimethod approach that combines a field study with preregistered experiments. Table 1 provides a summary of our studies and their role in supporting our model. In the field study, we show that prosocial managers are less likely to exit or divest despite deteriorating industry conditions from intensifying Chinese import competition. Because we do not directly observe guilt in the field study, we next conduct a series of experiments ($N = 1{,}411$) to measure and test anticipatory guilt as the underlying mechanism. Across all four experiments including a sample of full-time working executives enrolled in a part-time executive MBA program, we find that feelings of anticipatory guilt mediate the negative main effect of managerial prosocial preferences on exit thresholds.

By demonstrating moral emotions, specifically guilt, as a barrier to exit decisions, our study contributes to three streams of research. First, we add to the nascent body of research on *managerial* prosocial preferences. Current corporate strategy, CEO, and agency research largely overlooks the role of CEO prosocial preferences based on the implicit or explicit assumption that their effects are suppressed under external scrutiny or financial pressure (Fehr and Schmidt 1999, Yonker 2017, Keum and Meier 2024). Revising this view that ascribes a limited and contingent role, our findings suggest that managers' prosocial preferences can generate powerful emotions and affect even closely scrutinized corporate restructuring activities. Second, we demonstrate negative moral emotions, specifically anticipatory guilt (Baumeister et al. 2007), as a key input to managerial decision making, answering repeated calls for more work on "emotional and moral overtones" underpinning firm behaviors (Hodgkinson and Healey 2011; Liu et al. 2018; Hirshleifer 2020, p. 1812; Vuori and Huy 2022; Wang et al. 2023). During the corporate restructuring process, prosocial managers think about the potential harm to employees, feel anticipatory guilt, and resist exiting. Third, we highlight the dark side of managerial prosocial preferences. Our findings qualify the common assumption that moral emotions inhibit selfish decisions with immediate gains and facilitate long-term relational commitments with adaptive benefits (Tangney 1991, Fiske 2002, Kajackaite and Sliwka 2020, Feng et al. 2023). We show that, somewhat ironically, being selfless or selfish can both lead to

Figure 1. (Color online) Conceptual Model

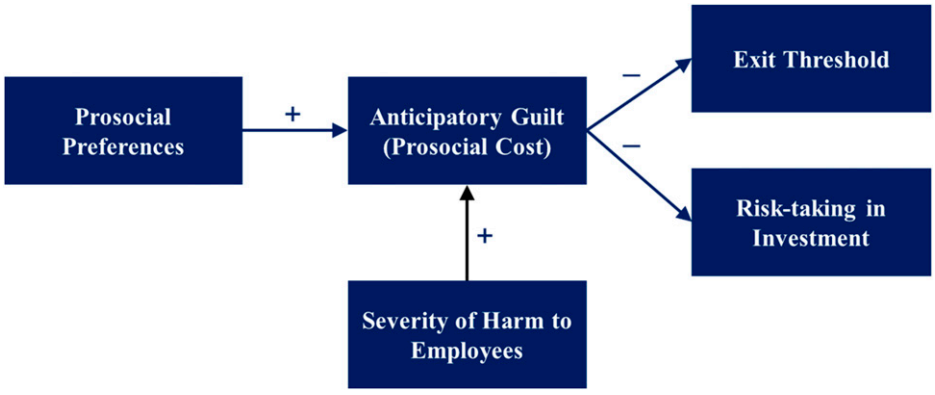


Table 1. (Color online) Summary of Studies

Study	Sample characteristics	Measures of independent variable	Fit in the conceptual model
Field Study	Universe of Compustat firms (2002–2010)	Prosociality: 4 proxies (e.g., charity engagement)	
Experiment 1	1A: Working adults with >5 years of managerial experience ($N = 444$) 1B: Executive MBA students from a top business school ($N = 64$)	Prosociality: Three conditions (high versus neutral versus low) based on picture priming	
Experiment 2	Working adults ($N = 358$)	Severity of harm: Two conditions (high versus low) based on the loss of medical insurance	
Experiment 3	Working adults ($N = 433$)	2 × 2 Design: Four conditions Prosociality: Two conditions based on direct manipulation Severity of harm: Two conditions based on job loss after exit	

delayed exits (Bertrand and Mullainathan 2003) and myopic underinvestment in research and development (R&D) activities (Manso 2011, Aghion et al. 2013).

2. Related Literature and Hypothesis Development

2.1. Exiting as a Behavioral Decision Under Uncertainty

A varied body of research spanning management, economics, finance, and accounting has examined the determinants of firm exits, emphasizing the importance of timely exits to the efficient reallocation of resources and firm performance (Chang 1996; for a review, refer to Elfenbein and Knott 2015). For example, Guler (2007) finds that venture capital firms' performance depends more on the timely termination of failing investments than the initial selection of successful ones. At the national level, Caballero et al. (2008) attribute Japan's economic stagnation to banks' continued lending to unproductive firms, which creates "zombie" firms and resource congestion.

Extant research on firm exits centers on rational financial considerations based on the seemingly straightforward premise that a firm should exit when the expected net present value of future profits falls below the opportunity cost of resources. This perspective emphasizes economic analysis and affords a minimal role to managers and their emotions. However, forecasting future profits is hampered by the uncertainty in future demand (Dixit 1989), in a firm's ability (Jovanovic 1982), and in the residual option value of firm resources (Levinthal and Wu 2010, Sakhartov and Folta 2014, Lieberman et al. 2017). Some firms persist despite consecutive years of losses only to exit eventually at a greater cost to investors, whereas others stage remarkable comebacks, as seen in Tesla's turnaround from near bankruptcy in 2017. As a result, it is often unclear for shareholders and creditors whether it is better to inject additional capital in hopes of a turnaround or undertake a fire sale of firm assets in an attempt to salvage any value (Adler 1992, Shleifer and Vishny 2011). The competing risks of premature and belated exits create a "weak" situation (Davis-Blake and Pfeffer 1989, Judge and Zapata 2015), where the optimal exit threshold remains ambiguous. As a result, managers often have the discretion to set higher or lower thresholds based on their preferences.

Accordingly, behavioral and agency research characterizes the exit threshold as a decision variable subject to managerial influence. This research documents a comprehensive list of self-centered biases on why managers persist with questionable businesses despite negative feedback, such as their own job security (Jensen 1993, Gormley and Matsa 2016), status (Ross and Staw 1986), self-enhancement (Audia et al. 2015, Lim and Audia 2020), self-serving attribution (Shi et al. 2023), motivated reasoning (Elfenbein et al. 2017), and political quid pro quo (Noda and Bower 1996, Guler 2007). The broader corporate strategy research has likewise focused on revealing the influence of self-centered CEO characteristics, such as narcissism, overconfidence, and jealousy (Zhu and Chen 2015, Gartenberg and Wulf 2017, Feldman et al. 2018, Gupta et al. 2019, Schumacher et al. 2020). Smith et al. (2018, p. 200) summarize that "the dominant focus on

personality in strategic management research has been dark traits."

However, managers also possess "bright" characteristics and the capacity to care for others, driven by moral instinct and emotions (Haidt 2001), yet little is known about how they influence managerial decision making. We examine the consequences of caring for employees in the context of a firm's exit decisions. Porter (1980, p. 37), in his early discussion of exit barriers, hints that a firm exit is a complex decision that reflects multiple motives: managers may be "unwilling to make economically justified exit decisions because of loyalty to employees, fear of consequences for their own careers, pride or other emotional reasons." Building on this observation, we propose that setting an exit threshold is not only an economic decision but also an emotional decision that incorporates the guilt that managers anticipate from causing harm to their employees in the process of halting firm operations. This prosocial cost, defined as the psychological cost managers experience from violating their prosocial preferences, increases aversion to exiting.

2.2. Prosocial Preferences and Anticipatory Guilt

A person's prosocial preferences is a multidimensional construct that encompasses being fair, loyal, and moral in interpersonal relations, and different disciplines have emphasized different components of being prosocial according to their theoretical and empirical focus.[2] However, distinct from "doing good," "doing no harm" constitutes its most basic and important foundation (Haidt 2001, Greene and Haidt 2002, Carnes and Janoff-Bulman 2012). For example, an emergency room doctor would not harm a patient by taking live organs, even if doing so can save the lives of multiple other patients. In characterizing prosocial preferences, there is now a consensus that, similar to a person's regulatory focus (Gorman et al. 2012), prosocial preferences can be both an innate trait that remains stable across time and situations and a state influenced by the situation or the desire to care for a specific group of people (Caprara et al. 2012, Bolino and Grant 2016). Managers differ in their level of concern for their employees as they differ in other characteristics, such as overconfidence and narcissism (Petrenko et al. 2016, Recendes et al. 2022); managers' prosocial preferences can also fluctuate over time, for example, with more prosocial behavior observed during the Christmas season (Guenzel et al. 2023).

Although intuitive, the conceptualization of prosocial cost as the psychological disutility from violating one's desire to not harm others can remain somewhat abstract. We elaborate on the emotional, in contrast to economical or physiological, component of prosocial cost. The anticipation of causing harm to others can trigger powerful negative moral emotions, such as guilt, shame, and remorse (Baumeister et al. 2007), which may even lead to adverse health outcomes.[3] We focus on anticipatory guilt as a key component of prosocial cost. Guilt is an intense negative emotion that arises from failing to live up to one's moral standards and self-identity, especially when one's behavior has caused interpersonal harm that could have been avoided (Tangney et al. 2007). People with stronger moral and prosocial values feel more responsible for others' well-being, tendency that disposes them to greater feelings of guilt for behaviors that cause the same level of harm to others (Silfver et al. 2008, Grant and Wrzesniewski 2010).

A small but growing number of management studies explores how managers' emotions influence their attention, cognition, and behaviors during the strategy formulation process (Hodgkinson and Healey 2011, Vuori and Huy 2022). Guilt is one of the most common forms of emotional distress and a significant driver of behavioral decision making in the interpersonal context (Baumeister et al. 1994). Yet, by assuming that managers lack both prosocial preferences and the discretion to act on them, there has been little to no consideration of guilt and other moral emotions. We expect managers with stronger prosocial preferences to internalize the suffering of laid-off workers. We hypothesize the following.

Hypothesis 1. *Prosocial managers experience greater anticipatory guilt while considering strategic actions that can harm their employees.*

2.3. Anticipatory Guilt and Exit Thresholds

We examine anticipatory guilt as a powerful moral emotion that affects a manager's exit decisions. Psychology research posits that even "a twinge of *anticipatory* guilt may be enough to steer the person away from doing something" (Baumeister et al. 2007, p. 174, emphasis added).[4] Unlike actual emotions, which are often transient and regulated by organizational processes (Vuori and Huy 2022), anticipatory emotions often remain internal to the decision maker and may even operate unconsciously (Haidt 2001). As a result, these emotions can exert more stable and enduring effects by escaping organizational scrutiny, constraining managers' behavior over an extended period of time (Wilson and Gilbert 2003, Baumeister et al. 2007).

In line with the potential role of anticipatory guilt, a nascent but growing body of research presents evidence that CEOs incur prosocial costs from laying off their employees and resist layoffs, albeit with significant differences across individuals and specific circumstances (Matsa and Miller 2014, Yonker 2017, Guenzel et al. 2023, Keum and Meier 2024). However, both prosociality and corporate strategy research remains

skeptical regarding whether managers have the discretion to influence corporate strategic decisions made under external scrutiny and financial pressure. Fehr and Schmidt (1999) show in an experiment setting that financial pressure induces participants to behave as if they only care about their own interests. Yonker (2017) finds that the bias against layoffs near a CEO's hometown disappears under strong corporate governance. Keum and Meier (2024) document that CEO prosocial preferences are "fragile" and readily suppressed by shareholder or financial pressures. More generally, corporate governance, agency, and CEO research suggests that external monitoring suppresses CEO effects on firm behaviors (Bertrand and Mullainathan 2003, Tang et al. 2015, Petrenko et al. 2016). In particular, avoiding exits and persisting despite poor performance typically require negotiating with external stakeholders, for example, for debt renewal (Bolton and Sharfstein 1996), and take place under financial distress and board oversight, potentially minimizing any role of CEOs.

While recognizing earlier studies that ascribe a more limited role, we propose that anticipatory guilt is a psychological mechanism that can affect exiting and other restructuring decisions. The robust effect of anticipatory guilt is based on four considerations. First, exit decisions are nonreversible (O'Brien and Folta 2009, Klingebiel 2022) and hence leave little room for reparation to mitigate managers' guilt. In contrast to layoffs from which the harm to employees can potentially be reversed, for example, through rehiring upon improved industry conditions, firm-level exiting is a terminal decision. Second, exit decisions leave little room for self-justification (Bandura 1999). Managers may justify layoffs as a "necessary evil" (Molinsky and Margolis 2005) required to ensure the survival and long-term growth of the firm. However, the terminal nature of exit decisions makes it difficult to reduce the feelings of anticipatory guilt by pointing to the potential for greater good in the future. In other words, exit decisions are less amenable to reparation and self-justification: two primary responses to alleviating feelings of guilt (Xu et al. 2011). Third, firm-level exits likely induce greater guilt relative to other restructuring decisions, such as layoffs. They affect all employees indiscriminately and do not provide the option to save in-groups with stronger emotional and social attachment, such as employees of the corporate headquarters or the CEO's hometown (Guler 2007, Landier et al. 2009, Yonker 2017). Lastly, the ambiguity of optimal exit thresholds and the potential to avoid exits could further magnify the feelings of personal responsibility and guilt (Tangney et al. 2007). Taken together, we expect prosocial managers to experience greater guilt and take more aggressive actions to avoid exiting.

Psychology research emphasizes how employee prosocial preferences and associated moral emotions foster cooperation and organizational citizenship (Podsakoff et al. 2000, Grant and Wrzesniewski 2010). Moral emotions can also facilitate relational contracts and enhance transaction efficiency by curbing opportunistic behaviors aimed short-term gains (Uzzi 1997). However, unlike the positive performance effects of *employee* prosocial preferences, *managerial* prosocial preferences can hinder even necessary restructuring and lead to persisting with failing businesses. We hypothesize the following.

Hypothesis 2. *Managers with stronger prosocial preferences set lower exit thresholds.*

If some managers are indeed prosocial and set lower exit thresholds to avoid anticipatory guilt from exiting, we expect their effects to extend beyond exit decisions and influence the aggressiveness of firm financial investments. Previous research indicates that having someone to care for, such as a spouse, child, or sibling, can reduce one's risk-taking propensity (Wang et al. 2009, Roussanov and Savor 2014). We propose that prosocial managers who care for employees will choose more conservative investments to reduce the risk of having to exit if investments fail. This effect on firm risk taking suggests a much more expansive role of prosocial preferences in firm behaviors than currently considered. They not only affect layoffs and restructuring activities that directly harm employees but also firm investment decisions.

According to current theories, lower exit thresholds (namely, the willingness to tolerate "worse" worst-case outcomes) encourage risk taking and investment in high-variance projects, pushing firms in the direction of maximizing the maximum potential payoff (i.e., "max-max" strategy). In particular, innovation and behavioral theory of the firm research emphasizes tolerance for failure as encouraging greater exploration and R&D investment (March and Shapira 1987, Tian and Wang 2014). However, if the lower threshold stems from the anticipated prosocial cost of exiting, managers may pursue a strategy that maximizes the minimum potential payoff (i.e., "max-min" strategy) to reduce the risk of the firm or project performance falling below the exit threshold. For example, prior research on tolerance for failure suggests that a firm with an exit threshold of 1% return on assets (ROA) will choose more aggressive investments relative to a comparable firm with an exit threshold of 3%. However, if the lower exit threshold stems from concern for employees, then the firm will choose more conservative investments. The theorized negative relation between exit thresholds and risky investment cannot be explained without considering managerial prosocial preferences, highlighting its novelty and importance

as a psychological mechanism. We hypothesize the following.

Hypothesis 3. *Managers with stronger prosocial preferences select less risky investments.*

2.4. Moderation by Harm to Employees

To further demonstrate anticipatory guilt as the underlying mechanism that drives the effects on exit thresholds and risky investments, we next consider the role of the severity of the harm that exiting causes employees. Exiting does not always bring the same level of harm to employees and, in turn, the prosocial cost of exits. We expect the severity of guilt to be directly influenced by the severity of objective harm inflicted upon employees due to managerial action. In situations where the harm is more severe, prosocial managers will perceive a greater violation of their prosocial preferences, experience greater anticipatory guilt, and thus decrease exit thresholds and risky investments to a greater extent. The explicit consideration of the severity of harm helps to articulate the role of prosocial cost, specifically the regard for *others*, that has remained implicit in previous discussions of managers' psychological attachment to employees (Landier et al. 2009, Devigne et al. 2016, Yonker 2017). Managers are reluctant to exit not only due to the personal cost of severing ties with their colleagues, employees, and friends to whom they are socially and emotionally attached but also because of their aversion to inflicting harm.

This suggests the severity of harm as a moderator to the influence of managerial prosocial preferences. In situations where exiting causes no harm to employees, we expect prosocial preferences to have little effect on firm exit and investment decisions. In the context of layoff decisions, Keum and Meier (2024) find that managers make larger layoffs when expansions in unemployment insurance provide a stronger economic cushion for laid-off employees. Guenzel et al. (2023) document that managers are less likely to make layoffs during recessions when employees will have more difficulty finding a new job. We expect prosocial managers to experience less guilt and increase exit thresholds and risky investments when strong safety nets are in place to reduce the harm to employees from job loss. We hypothesize the following.

Hypothesis 4A. *The anticipation of less harm to employees mitigates the negative effect of prosocial preferences on exit thresholds.*

Hypothesis 4B. *The anticipation of less harm to employees mitigates the negative effect of prosocial preferences on risky investments.*

In testing our theory, we adopt a multimethod approach that combines a field study with four experiments (Table 1). We first present empirical evidence on exit decisions in an externally valid field setting. The experiments build on a long tradition of psychology and behavioral economics research (Levitt and List 2007, Engel 2011, Grant and Berry 2011, Hu and Liden 2015) and allow us to directly manipulate and observe anticipatory guilt as the underlying mechanism.

3. Field Study

In contrast to target performance, managers rarely disclose exit thresholds (Keum and Eggers 2018, Keum and Ryan 2024). We examine whether high and low prosocial managers systematically differ in their exit response to (exogenous) industry-wide negative shocks that afflict all firms in the same industry similarly: Chinese import competition. In responding to plausibly exogenous industry-level shocks, firms that do not exit or downsize can be inferred as having lower exit thresholds.

3.1. Proxies of Managerial Prosocial Preferences

It is exceedingly difficult to directly measure a CEO's prosocial preferences due to their reluctance to answer psychometric questions (Cycyota and Harrison 2006) and the presence of social desirability bias in their responses (Richman et al. 1999). This difficulty has left researchers to infer them indirectly based on creative proxies, such as the birth of a male versus female child (Dahl et al. 2012), the sudden death of a socially close director (Chen et al. 2020), personal charitable donations (Liu et al. 2023), or attendance of religious schools (Chen et al. 2023). We use novel and previously used approaches to measuring managerial prosocial preferences. We provide more detailed descriptions of variable construction, data sources, and sample years in the Online Appendix.

1. **"We" pronoun use:** We examine the frequency of self-inclusive, first-person plural pronouns (we, ours, us) during quarterly earnings conference calls as a proxy for prosocial preferences that indicates stronger attachment to employees. Pronoun use in speech reflects the psychological state of the speaker and their values and beliefs (Raskin and Shaw 1988). For example, Chatterjee and Hambrick (2007) use the frequency of the first-person singular pronoun *I* as a proxy for self-absorption and narcissism. People use the *we* pronoun more often when they describe a positive communal relation or possess a stronger sense of collective experience (Pennebaker and Lay 2002). The data on CEO pronoun use is obtained from Chen and Loftus (2019), who parsed conference call transcripts between 2002 and 2016.[5] A one-standard-deviation increase equates to approximately 2.83 additional uses of the *we* pronoun beyond the baseline of 11.10 during each conference call. We_use_t is the frequency of *we* pronouns used in the presentation and Q&A sections of earnings

calls. This count is normalized by the total number of words spoken and averaged across all earnings calls in a given year. We use the average from years t and $t-1$. We also estimate the effects of *I* and *they* pronoun use in a falsification test and find null results. There is a concern that CEOs may strategically change their pronoun use to diffuse responsibility or claim credit. However, one's pronoun use shows persistence over time, and it is especially difficult to change one's pronoun use during spontaneous verbal exchanges. We show in Online Appendix A.2 that our results are robust to *we* pronoun use from year $t-1$ or $t-2$ when firm performance or industry conditions at year $t+0$ are unlikely to have been foreseen.

2. **Employee-prosocial language:** As an official document that a CEO must sign and is held legally responsible for, prior CEO research has used the contents of firm annual reports to infer CEO characteristics. For instance, Chatterjee and Hambrick (2007) and subsequent studies use the size of CEO portraits and signatures as a proxy for narcissism. We build on behavioral economics (Kahneman et al. 1986, Capraro et al. 2024) and moral psychology research (Graham et al. 2013), which suggests fairness as a key foundation of prosociality. We adopt a word-embedding approach and create a measure of prosocial language (Mikolov et al. 2013) by calculating the cosine similarity of word vectors representing the terms "employee" and "fair" within a firm's 10-Ks and DEF-14A filings each year. We use the proximity of the terms employee and fairness in a 300-dimensional vector space as a proxy for managerial prosociality. The overall approach closely resembles Rodriguez and Spirling (2022), who use a text measure to show that the distance between immigrant and hardworking is smaller for liberals than for conservatives. We acknowledge that annual reports are often drafted or edited by the Investor Relations department, which strives to portray its CEO in a positive light. However, this shortcoming results in noise and a downward bias against finding significant results.

3. **CEO career history:** We expect internally promoted managers to possess stronger prosocial preferences for current employees and incur a greater prosocial cost from exiting relative to externally recruited managers. People feel greater guilt when causing harm to those they are socially close with or have interacted with longer (Bohnet and Frey 1999, Tangney et al. 2007). Bai and Mkrtchyan (2023) show that external CEOs are more likely to close factories, reduce headcounts, and increase the capital intensity of production. Keum and Meier (2024) document that external CEOs make more aggressive layoffs relative to internal CEOs while confronting the same industry-level negative shocks. In our empirical analysis, a CEO is identified as external if their first year as a CEO is the year that they joined the firm. We obtain CEO-related information from the Execucomp database. External CEOs represent approximately 40% of our firm-year observations. We further explore the possibility that the difference between external and internal CEOs weakens, as external CEOs become attached to employees over time with increasing tenure.

4. **CEO charity participation:** We look at CEOs' involvement with charitable organizations based on the assumption that those who spend more time volunteering derive greater utility from helping others and possess stronger prosocial preferences (Meier and Stutzer 2008, Rodell 2013). We closely follow the procedure outlined in Feng et al. (2023). We first identify the CEO's involvement in all outside organizations by going through their "other activities" listed in the BoardEx database. We then identify whether each organization is categorized by the IRS as a "Charitable Organization." Charity participation is the percentage share of charitable organizations among all of the CEO's external activities. Approximately 15.9% of the external organizations with which CEOs are affiliated are charitable organizations.[6]

3.2. Empirical Strategy

Prior research on how CEO psychological characteristics affect firm investment and layoffs provides well-established precedents for our empirical strategy. We estimate the following Ordinary Least Squares (OLS) regression:

$$\begin{aligned} Exit_{it+1} &= \alpha_i + \alpha_t + \beta_1 Prosocial\ Preferences_{it} \\ &\quad + \beta_2 Negative\ Industry\ shock_{kt} + \beta_3 Prosocial\ Preferences_{it} \\ &\quad \times Negative\ Industry\ shock_{kt} + \mathbf{X}_{ikt} + \varepsilon_{ikt}, \end{aligned} \tag{1}$$

where i indexes a firm, k indexes its primary industry of operation, and t indexes year; α_i and α_t are firm and industry fixed effects. We set n to one in our baseline specification (Hombert and Matray 2018) and explore longer lags in Online Appendix A.4. $\boldsymbol{X}$ is a vector of firm and industry controls. Our main variable of interest is the β_3 coefficient on the interaction term $Prosocial\ Preferences_{it} \times Negative\ Industry\ shock_{kt}$, which estimates whether firm response to increasing exit pressure from negative industry shocks varies with the strength of managerial prosocial preferences. Our theory predicts β_3 to be negative because prosocial preferences lead to setting lower exit thresholds and persisting despite adverse economic conditions.

In estimating Equation (1), it is not feasible to randomly assign CEOs with varying strengths of prosocial preferences for causal inference. However, to the extent that industry-level negative shocks at year t do not stem from CEOs' own actions and are exogenous to the distribution of prosocial CEOs at year t, we can compare how high and low prosocial CEOs differ in

their propensity to exit for causal inference. In other words, the β_3 coefficient on the interaction term can be interpreted causally as long as the two interacted variables, *Prosocial Preferences*$_{it}$ and *Negative Industry shock*$_{kt}$, do not contemporaneously influence each other (Bun and Harrison 2019). In an analogous design, Matsa and Miller (2014) and Yonker (2017) examine whether CEO gender and employees' geographical distance to the CEO's hometown affect layoffs in response to industry-level negative shocks. Hirshleifer et al. (2012) estimate whether CEO overconfidence affects investments in response to industry upturns. Beyond CEO characteristics, Opler and Titman (1994) and subsequent finance research (Rajan and Zingales 1998) examine how firm leverage affects firm response to industry downturns.

The logic behind our empirical design has been formalized by the research on Bartik (1991) instruments. Bartik or Bartik-like instrumental variable designs look at the interaction between time-varying shocks and differential exposure to these shocks based on some preshock characteristics (Autor et al. 2013, Cowgill et al. 2021). In our case, CEO psychological characteristics (i.e., prosocial preferences) are the exposure variable. Goldsmith et al. (2020) and Borusyak et al. (2022) show that exogenous independent shocks to many industries lead the Bartik estimator to be consistent, even when the exposure variable is endogenous. To the extent that industry shocks are uncorrelated with the potential bias from the exposure variable, the presence of many shocks causes this bias to average out to zero. In our context, the requirement is violated, for example, if the board of directors foresees an industry downturn and appoints external or less charitable CEOs to drive more aggressive downsizing. However, it is unlikely that the board of directors can foresee the precise level of Chinese import competition years in advance and preemptively engage in the costly and rare replacement of their CEOs (Yermack 2006, Schepker et al. 2017). In Online Appendix A.1, we verify that all our proxies of managerial prosocial preferences are not significantly correlated with industry-level negative shocks at year t.

To demonstrate CEO prosocial preferences as an independent driver of firm exit thresholds, the vector $\boldsymbol{X}$ includes extensive firm- and industry-level controls that have been shown to affect firm exit and investment decisions. We control for firm size as the most robustly documented factor that affects the probability of firm exits (Caves 1998), in part by affecting firm access to external funding (Hadlock and Pierce 2010). Any industry-level effects, for example, based on the technological life cycle or competitive intensity (Klepper 1996), are absorbed into industry × year fixed effects and industry concentration (the Herfindahl index and its square) based on the revenue of Compustat firms. We additionally control for firm performance based on *ROA* and firm-specific growth opportunities using *Tobin's Q*. Because financial slack directly affects firms' ability to avoid bankruptcy, we include four proxies of a firm's financial resources: leverage based on its *debt ratio*, *current ratio*, *working capital-to-sales ratio*, and *Altman's Z-score*. All of our results remain little changed when we additionally control for firm diversification (Sakhartov and Folta 2014, Lieberman et al. 2017), but we do not include it in our baseline specification because the limited coverage of Compustat segment-level data necessary for its calculation results in significant sample attrition. Additionally controlling for firm R&D spending or patent stocks (Hombert and Matray 2018, Aghion et al. 2021) or excluding all controls other than firm and industry × year fixed effects does not change any of the results. All standard errors are double-clustered at the firm and industry levels.

3.3. Chinese Import Competition

We leverage increases in Chinese import competition a well-established exogenous industry-level shock that increases firm exits (Autor et al. 2016). A number of influential studies have examined increasing Chinese import competition as the cause of the decline in the U.S. manufacturing sector (Autor et al. 2013) and have explored the societal costs of resulting unemployment (Autor et al. 2020, Pierce and Schott 2020). We follow Acemoglu et al. (2016) and calculate Chinese import competition (ΔIC) for each four-digit Standard Industrial Classification (SIC) code as below but for each year rather than at five-year intervals. $\Delta Chinese\ import_{kt}$ is the change in imports from China from the previous year, and the denominator is initial absorption measured as the sum of U.S. industry shipments and Chinese imports minus U.S. exports.

$$\Delta IC_{kt} = \frac{\Delta Chinese\ import_{kt}}{US\ Production_{kt} + Chinese\ import_{kt} - Export_{kt}}. \tag{2}$$

The annual median value of ΔIC is 0.28%, and the mean value is 14.47%. The large difference reflects the uneven exposure to import competition across industries. Our results are robust to winsorizing ΔIC at the top and bottom 1%, but they lose statistical significance as we further expand winsorization and limit the analysis to minor increases in import competition that are unlikely to require exiting or downsizing.

3.4. Proxies of Exits

We proxy for exits based on a firm being delisted from Compustat, which indicates that its securities are no longer publicly traded. In the presence of well-functioning secondary markets for corporate assets,

acquisition by another firm is the most common cause of delisting for struggling firms in the United States (approximately 60%), followed by liquidation and bankruptcy (approximately 4% and 3%, respectively).[7] As a proxy for partial exits, we examine the number of divestitures reported in the SDC platinum database (Bettinazzi and Feldman 2021). Divestiture counts exhibit an extreme right skew, so we winsorize this variable at the 99th percentile.

3.5. Sample

We start with a sample of public firms in the Compustat database with nonmissing variables and ROA above negative 100%. Our sample window (2002–2010) is determined by the joint requirement for Chinese import competition data and proxies of managerial prosocial preferences that are mostly available starting in 2002 (refer to the Online Appendix for details). The specific sample size varies across analyses based on the proxy of managerial prosociality in use. Table 2 provides summary statistics for the baseline sample. A mean value of 3.58% for *Exit* indicates that exiting is rare but not an exceedingly uncommon occurrence. On average, there is a 50% chance that a firm will still be active after 19 years. Consistent with our sample that consists of larger public firms, the probability is lower than estimates from Caves (1998) and Furman and Orszag (2018) who document an exit probability of 6%–8% for a sample that includes both public and private firms.

3.6. Results

Exits. In Table 3, we estimate Equation (1) with four proxies of managerial prosocial preferences. We first estimate with firm and year fixed effects and include SIC4 × year fixed effects in the next column to control for any industry-level economic conditions. In column 1, the independent effect of *we* pronoun use is negligible in economic significance and statistically insignificant. This weak effect obscures the contingent effect of managerial prosociality, which should primarily affect firms during industry downturns that increase pressure for exiting. As the main variable of interest, the coefficient on the interaction term *Prosociality* × *Chinese Import Competition* is negative and significant (-0.733, $p < 0.01$) in support of Hypothesis 2. In column 2, the independent effect of *Chinese Import Competition* is subsumed in SIC4 × year fixed effects and dropped from the estimation. We find consistent support for Hypothesis 2 with a twofold increase in the coefficient on *Prosociality* × *Chinese Import Competition* ($-0.733 \rightarrow -1.401$). In response to a 10% increase in Chinese import competition, a one-standard-deviation increase in CEO *we* pronoun use (0.896) reduces the likelihood of exiting by 12.55% in column 2.

We find consistent patterns from the three other proxies. The coefficient on *Prosociality* × *Chinese Import Competition* based on the use of employee prosocial language is negative but lacks statistical significance (-3.762, $p = 0.107$) in column 3, but it attains both economic and statistical significance after controlling for industry trends in column 4 (-18.858, $p < 0.01$). In response to a 10% increase in Chinese import competition, a one-standard-deviation increase in employee prosocial language (0.038) reduces the likelihood of exiting by 7.10% in column 4. In columns 5 and 6, we find that external CEOs are more likely to exit from increasing Chinese import competition. The positive effect on exits is more than two times larger in columns 7 and 8, where we restrict the firm-year observations to the first three years of an external CEO's tenure when they would have had little time to develop personal relations with employees. In response to a 10% increase in Chinese import competition, firms with external CEOs are 44.0% more likely to exit than firms

Table 2. Sample Statistics (Field Study)

No.	Variables	*N*	Mean	Standard deviation	Minimum	Maximum
1.	$Exit_{t+1}$	5,783	0.036	0.186	0.00	1.00
2.	$Divestiture_{t+0}$ (*log*)	5,783	0.059	0.193	0.00	0.69
3.	*Chinese import competition*$_t$	5,783	0.145	0.888	−1.96	19.00
4.	*CEO 'we' pronoun use*$_t$	3,368	5.243	0.896	2.26	9.23
5.	*Employee prosocial language*$_t$	5,783	−0.035	0.038	−0.19	0.12
6.	*External CEO*$_t$ (=1)	1,989	0.403	0.491	0.00	1.00
7.	*Charity*	2,853	0.159	0.228	0.00	1.00
8.	ROA_t	5,783	−0.049	0.232	−0.99	1.63
9.	*Tobin's* Q_t	5,783	2.261	1.712	0.29	27.14
10.	*Debt ratio*$_t$	5,783	0.162	0.209	0.00	2.62
11.	*Current ratio*$_t$	5,783	3.897	3.450	0.10	44.81
12.	*Working capital to sales ratio*$_t$	5,783	10.764	415.716	−498.60	31,115.4
13.	*Distance to bankruptcy*$_t$	5,783	5.045	9.159	−53.21	268.88
14.	*Total asset*$_t$ (*log*)	5,783	5.864	1.928	0.96	12.62
15.	*Industry concentration*$_t$	5,783	0.235	0.191	0.05	1.00
16.	*Industry concentration*^2_t	5,783	0.092	0.162	0.00	1.00

Table 3. Managerial Prosocial Costs and Exits (Field Study)

Dependent variable	$Exit_{t+1}$									
Proxy for Managerial Prosociality	"We" pronoun		Emp. prosocial language		External CEO (=1)				Charity	
					All		First three years of tenure			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
$Prosociality_t$	0.006	0.007	−0.070	−0.049	0.016	0.009	0.018	−0.008	−0.035	0.009
	[0.008]	[0.010]	[0.084]	[0.087]	[0.019]	[0.021]	[0.038]	[0.047]	[0.027]	[0.029]
Chinese Import Competition$_t$	4.726***		−0.913***		0.063		0.632		0.514	
	[1.145]		[0.246]		[0.906]		[0.575]		[0.525]	
$Prosociality_t \times$ *Chinese Import Comp.*$_t$	−0.733***	−1.401*	−3.762	−18.858***	1.341**	1.866***	3.412***	4.399***	−1.796	−2.488**
	[0.177]	[0.809]	[2.315]	[6.326]	[0.628]	[0.553]	[1.197]	[1.267]	[1.507]	[1.126]
R^2	0.33	0.41	0.30	0.37	0.28	0.45	0.37	0.60	0.26	0.43
Observations	3,368	3,121	5,783	5,603	1,989	1,734	806	540	2,853	2,599
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SIC4 × year fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes. Standard errors are clustered at the firm and industry level and reported in brackets.
*, **, and *** statistical significance at the 10%, 5%, and 1% levels, respectively.

with internal CEOs in column 8. This result, although providing nuanced support for Hypothesis 2, needs to be interpreted with caution due to the small sample size ($N = 540$). In a supplementary analysis, we verify that consistent results are obtained when using a larger sample ($N = 1{,}071$) that extends the sample period to 1992–2010 (versus 2002–2010). In columns 9 and 10, CEOs volunteering at charitable organizations are less likely to exit despite intensifying Chinese import competition. In response to a 10% increase in Chinese import competition, a CEO with half of their outside activities in charitable organizations is 12.44% less likely to exit relative to a CEO who does not volunteer at all in column 10.

Beyond firm-level exit decisions, we examine in Online Appendix B whether our theory extends to partial exits via divestiture. Divestitures can be highly disruptive, resulting in the acquiring firm laying off approximately 30% of the acquired employees (Marks et al. 2017). Of the four proxies, we find support from employee prosocial language, external CEO status, and CEO charitable engagement but not *we* pronoun use.

Overall, we find robust support for Hypothesis 2 across four proxies of CEO prosocial preferences. These proxies are individually imperfect with distinct weaknesses along with their strengths, but they are theoretically grounded in prior research and, collectively and taken together with collaborating experimental evidence, provide a robust measurement of CEO prosocial preferences across their trait and state characteristics. The magnitude varies across different proxies but is also sizable. Elfenbein and Knott (2015) estimate that a one-standard-deviation decline in relative cost and net income affects expected exit time by −11% and 18%, respectively. Although based on a different sample, the effects of prosociality show comparable magnitudes, decreasing exiting by 6.22%–44.0%. CEO prosocial preferences are not only a novel but also economically significant determinant of how CEOs make exit decisions.

3.7. Prosocial Preferences and Risky Investments

It is difficult to assess in a field setting whether prosocial managers select conservative max-min investments over max-max investments (Hypothesis 3) at an economic cost to the firm. We rely on experiments to demonstrate the economic cost of prosocial investment decisions and focus more narrowly on testing its effect on riskiness in firm investment in our field study. Building on innovation (Ederer and Manso 2013) and behavioral research (March and Shapira 1987, Chen and Miller 2007), we use firm R&D investments as a proxy for risky investments, albeit with important caveats. To conserve space, we show in Online Appendix C that the employee-prosocial language, external CEOs and their low tenure, and charity participation affect risky R&D activities in the direction predicted in Hypothesis 3. As an exception, we do not find support from *we* pronoun use.

3.8. Alternative Explanation: Sorting, Self-Interest, and External Image Considerations

The unexpected and exogenous nature of Chinese import competition effectively rules out sorting as an alternative explanation, where firms with limited need for layoffs strategically appoint prosocial CEOs.

Results from the three state-based proxies (e.g., *we* pronoun use, employee prosocial language, tenure of an external CEO) use within-person variations in CEO concerns for employees, further addressing sorting as the alternative explanation. There is also a concern that managers display prosociality for external image concerns or self-interest. However, to overturn our prosociality-based explanation, the intensity of external image concern has to vary positively with *we* pronoun use and employee-prosocial language at a yearly frequency while varying negatively with CEO tenure. We find this to be unlikely. Keum and Bhatia (2024) find that prosocial CEOs are more likely to be dismissed following increases in import competition due to poor fit with industry conditions that demand aggressive restructuring of human resources. Furthermore, both self-interest and external image considerations have difficulty explaining the negative effects of managerial prosociality on firm R&D spending during periods of intensifying import competition.

4. Experiments

While offering a rare examination of CEO prosocial preferences in the field, our field study does not allow direct observation of anticipatory guilt as the underlying mechanism. We next conduct a series of experiments to probe prosocial costs, specifically anticipatory guilt, as the psychological mechanism underpinning exit decisions (for another study that uses experiments to study exit decisions, see Elfenbein et al. 2017). We manipulate prosocial preferences in Experiment 1, the harm to employees from a firm exiting in Experiment 2, and both of them in Experiment 3. We test the mediation by anticipatory guilt across all experiments. All data can be accessed via the Open Science Framework at https://osf.io/g6uqv/.

4.1. Experiment 1A: Prosocial Preferences and Exit Threshold

Our first experiment tests the causal link between a manager's prosocial preferences and exit-related decisions and demonstrates mediation by anticipatory guilt. This study was preregistered at https://aspredicted.org/VGB_D8R.

4.1.1. Participants. We used G*Power to determine the sample size necessary to identify a small-sized effect: 400 participants are required for the study to be powered at 95%. To exceed this sample size, we compensated each participant one U.S. dollar and aimed to recruit 450 participants from Prolific, a commonly used online platform for recruiting participants. We only recruited individuals with more than five years of managerial experience to participate in this study to ensure ecological validity. We obtained 444 effective responses (50.23% female, $Mean_{age} = 44.91$, $SD_{age} = 8.31$), and their educational backgrounds were as follows: 31.08% associate degree or below, 44.37% bachelor's degree, and 24.55% master's degree or above.

4.1.2. Procedures and Measures

4.1.2.1. Baseline Prosociality: Dictator Game. Before our manipulation, we measured participants' prosociality using the Dictator Game, a widely used one-shot game to capture individual prosocial preferences in behavioral economics (Engel 2011). The game's rules are as follows: "Divide a pie of $100 between yourself and an anonymous recipient." A person who allocates a greater sum to another is considered to be more prosocial. The dictator game allows us to measure (versus manipulate) participants' innate prosocial preferences and provides an alternative trait-based proxy to test our theory.

4.1.2.2. Background Information. After consenting to the study, participants read a vignette that asked them to imagine being a manager of a company with several chain stores. Their industry has had no revenue growth in the past three years: three years ago, the average industry revenue was around $100k, yet during the last three years, this number fluctuated between $60k and $80k. They were told that many companies in their industry would stop operating a store when the revenue fell below $55k–65k, although some companies continued to operate stores even with revenue lower than $40k. All participants were told that part of their salary is linked to firm performance and could be negatively impacted by operating low-performing stores, and once they stopped running a store, all employees of this store would be laid off.

4.1.2.3. Manipulation of Prosocial Preference. Participants were then randomly assigned to one of three conditions in a between-subject design: the high prosociality condition, the low prosociality condition, and the neutral condition. We used picture priming to manipulate different levels of prosocial mindsets (Carr et al. 1982, Gilad and Kilger 2008, Oveis et al. 2010). In each group, we used five pictures to prime the mindset of participants. Participants were informed that as managers, they had hung a few pictures on the wall of their office, and were then shown these pictures one by one. In the high prosocial condition ($N = 147$), participants were shown pictures that clearly convey high prosocial value. For example, in one of the pictures presented, a large hand protectively hovers over a group of people, shielding them from a storm. In the low prosociality condition ($N = 151$), participants were shown pictures conveying a focus on the self or financial interest. For example, in one of the pictures

presented, there is a single bold dollar sign centered on a target with question marks discarded around it. In the neutral condition ($N = 146$), participants were shown pictures that were not related to any specific values or beliefs, such as paintings of fruit, cubes, and colors. See Online Appendix D.1 for all the sample pictures used.

To check the effectiveness of our manipulation, we asked participants to rate whether they perceived themselves, as the protagonists in the vignette, to be prosocial. We used four items adapted from the scale developed by Caprara et al. (2005), including "I care about others," "I try to help others," "I am empathetic with those who are in need," and "I am a prosocial manager" (1 = "not at all," 7 = "a great deal").

4.1.2.4. Exit Threshold.

Participants were then asked the minimum revenue they would accept to continue operating a store.

4.1.2.5. Conservative Investment.

Participants were asked to choose between two locations to open a new store. They were told that the two locations are similar, but some have more volatile customer traffic than others: Location A is ~$70k–90k and Location B is ~$50k–130k. Although Location A has a lower expected revenue than Location B ($80k versus $90k), choosing Location A eliminates the risk of falling below the average exit threshold ($55k) and corresponds to a max-min option. Location B corresponds to both max-mean and max-max options. We thus coded *Conservative Investment* as one if Location A was chosen and coded it as zero if Location B was chosen. We expect that participants in the high prosociality condition are more likely to choose Location A despite its lower expected revenue to avoid having to close their stores and lay off employees.

4.1.2.6. Anticipatory Guilt (Mediator).

We asked participants the extent to which they expected themselves to feel the following emotions for employees' loss if they stopped operating the store. The six guilt-related items draw from the well-established "Positive and Negative Affect Schedule–Expanded Form" (Watson and Clark 1994): guilty, ashamed, blameworthy, angry at self, disgusted with self, dissatisfied with self (1 = "not at all" to 7 = "extremely").

4.1.2.7. Perceived Self-Cost (Alternative Explanation).

We also directly measured whether our manipulations affected participants' concern for their own job security and did not find any significant differences across conditions ($F = 0.113$, $p = 0.893$), ruling this out as a potential alternative explanation.

4.1.3. Results.

The F-test results are plotted in Figure 2(a).

4.1.3.1. Manipulation Check.

The one-way analysis of variance (ANOVA) test confirmed that we successfully manipulated prosociality across the three conditions ($F = 265.3$, $p < 0.001$).

4.1.3.2. Exit Threshold.

The one-way ANOVA test among the three conditions was significant ($F = 17.51$, $p < 0.001$), indicating that the exit thresholds were significantly different across the three conditions. The exit threshold was significantly lower in the high prosociality condition ($Mean = 50.52$, $SD = 10.04$) than in the low prosociality condition ($Mean = 57.00$, $SD = 8.59$, $t = -5.98$, $p < 0.001$) and the neutral condition ($Mean = 54.73$, $SD = 10.07$, $t = -3.58$, $p < 0.001$). The exit threshold was significantly higher in the low prosociality condition than in the neutral condition ($t = 2.09$, $p = 0.037$).

4.1.3.3. Conservative Investment.

The likelihood of choosing the conservative investment differs significantly across the three conditions based on the one-way ANOVA test ($F = 10.86$, $p < 0.001$). Participants in the high prosociality condition were more likely to choose the conservative investment option ($Mean = 0.72$, $SD = 0.45$) than those in the low prosociality condition ($Mean = 0.46$, $SD = 0.50$, $t = 4.67$, $p < 0.001$) and the control condition ($Mean = 0.62$, $SD = 0.49$, $t = 1.91$, $p = 0.057$). The participants in the low prosociality condition were less likely to choose the conservative investment option than those in the neutral condition ($t = -2.67$, $p = 0.008$).

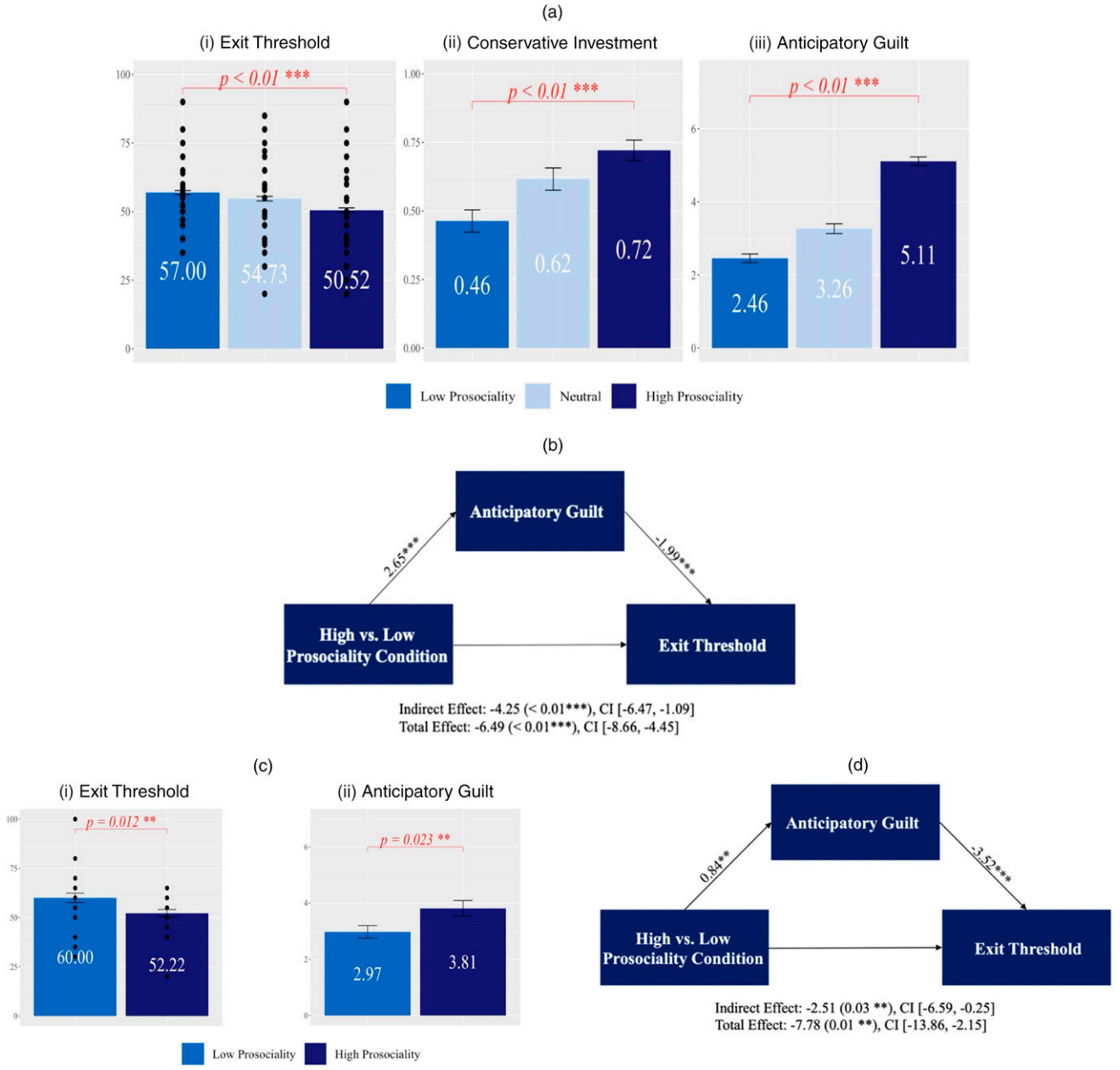
4.1.3.4. Mediation by Anticipatory Guilt.

The one-way ANOVA test on anticipatory guilt among the three conditions was significant ($F = 121.7$, $p < 0.001$) and significantly higher in the high prosociality condition ($Mean = 5.11$, $SD = 1.44$) than in the low prosociality condition ($Mean = 2.46$, $SD = 1.45$, $t = 15.81$, $p < 0.001$). We conducted mediation analyses with the R package "mediation" (Tingley et al. 2014). Figure 2(b) presents the path coefficients, the indirect effect, and the total effect for high versus low prosociality conditions. The negative effect of the high prosociality condition (versus low prosociality condition) on exit thresholds is significant and partially mediated by anticipatory guilt (indirect effect = −4.25, $p < 0.001$, 95% confidence interval (CI) = [−6.40, −1.85]). In Online Appendix D.2, we show that the mediation is also significant for the high versus neutral and low versus neutral comparison.

4.1.3.5. Dictator Game.

On average, participants kept $10.69 more than the amount they gave to the other recipient, and this amount did not differ across the three groups ($F = 0.09$, $p = 0.92$), indicating that the randomization worked. In addition, consistent with our hypothesis, a selfish allocation shows a positive correlation with the exit threshold (sample correlation = 0.08,

Figure 2. (Color online) Results (Experiment 1A and 1B)



Notes. (a) *F*-test results (Experiment 1.A). (b) Mediation by guilt (Experiment 1.A). (c) *t*-test results (Experiment 1.B). (d) Mediation by guilt (Experiment 1.B).

$t = 1.73$, $p = 0.085$), and the regression coefficient is significant after controlling for age and gender ($B = 0.03$, standard error (SE) = 0.02, $p = 0.097$). On average, allocating 10 additional dollars to oneself leads to setting a \$338.74 higher exit threshold, yet this did not significantly relate to the choice of conservative investment (sample correlation = −0.01, $t = 0.12$, $p = 0.905$).

4.1.4. Experiment 1B: Replication with Executive Managers. There is a debate about whether high-level executives are less prosocial than the average employee or individual (Fehr and List 2004, Fang and Tilcsik 2022), raising questions on the external validity of the experimental results of Experiment 1A. To increase external validity, we next repeat the experiment with a sample of full-time working executives enrolled in a part-time executive MBA program at a top U.S. business school during one of their elective courses. These executive MBA students typically possess several additional years of managerial experience and occupy a more senior role in their organization compared with regular full-time MBA students. Because of the small

class size, we collected 64 valid responses, which were randomly assigned to one of the two conditions: high prosociality ($N = 27$) and low prosociality ($N = 37$). The manipulation involved the same picture priming used in the previous experiment. To run a short survey that takes less than two minutes, we only measured the exit threshold.

We continue to find robust support for our theory. As shown in Figure 2(c), the exit threshold was significantly lower in the high prosociality condition (*Mean* = 52.22, $SD = 9.54$) than in the low prosocial condition (*Mean* = 60.00, $SD = 14.48$, $t = -2.59$, $p = 0.01$). The anticipatory guilt was significantly higher in the high prosociality condition (*Mean* = 3.81, $SD = 1.46$) than in the low prosociality condition (*Mean* = 2.97, $SD = 1.39$, $t = 2.31$, $p = 0.02$). The anticipatory guilt again significantly mediated the effect of prosociality on the exit threshold (Figure 2(d)). These results validate our results from online samples and offer rare evidence of the effects of prosocial preferences in a sample of executives. To the best of our knowledge, Fehr and List (2004) involving coffee mill CEOs is the only other study that investigates the effects of prosocial preferences on real working executives.

4.2. Experiment 2: Harm to Employees (Loss of Medical Insurance)

The results of Experiment 1 support our theory that managers with stronger prosocial preferences are more likely to set a lower exit threshold and choose a more conservative investment option. In addition, we find that anticipatory guilt mediates these effects. In Experiment 2, we directly tuned the potential harm to employees from exiting. We expect managers to be more reluctant to exit when losing one's job causes greater harm to employees' well-being due to the loss of medical insurance because they feel greater anticipatory guilt. We create three conditions: keeping medical insurance after being laid off, losing medical insurance after being laid off, and not being laid off (and retaining medical insurance).

4.2.1. Participants. To identify a small-sized effect, we aimed to recruit 350 participants and obtained 358 effective responses from Prolific (42.30% female, $Mean_{age} = 37.86$, $SD_{age} = 10.19$). We compensated each participant one U.S. dollar. Their educational backgrounds were as follows: 40.50% associate's degree or below, 44.41% bachelor's degree, and 15.08% master's degree or above.

4.2.2. Procedures and Measures. The background information was the same as in Experiment 1.

4.2.2.1. Manipulation of Severity of Harm. Participants were randomly assigned to one of three conditions: high harm, low harm, and no harm. In the high harm condition ($N = 124$), participants were told that once they stopped running a store, all employees of this store would be laid off, and they would no longer be covered by company-sponsored medical insurance. In the low harm condition ($N = 113$), the laid-off employees will continue to have medical insurance coverage for the next six months (or until finding a new job). In the third condition ($N = 121$), participants were told that once they stop operating a store, "the ownership of the store will be handed over to another company, and all employees will be kept without any layoffs." Because this condition presents less harm than the previous two conditions, we named it the "no harm" condition. To check the effectiveness of our manipulation, we asked participants to rate how negatively employees would be affected if they were to stop operating a store.

4.2.2.2. Dependent Variables. They were the same as in Experiment 1.

4.2.3. Results. The *F*-test results are plotted in Figure 3(a).

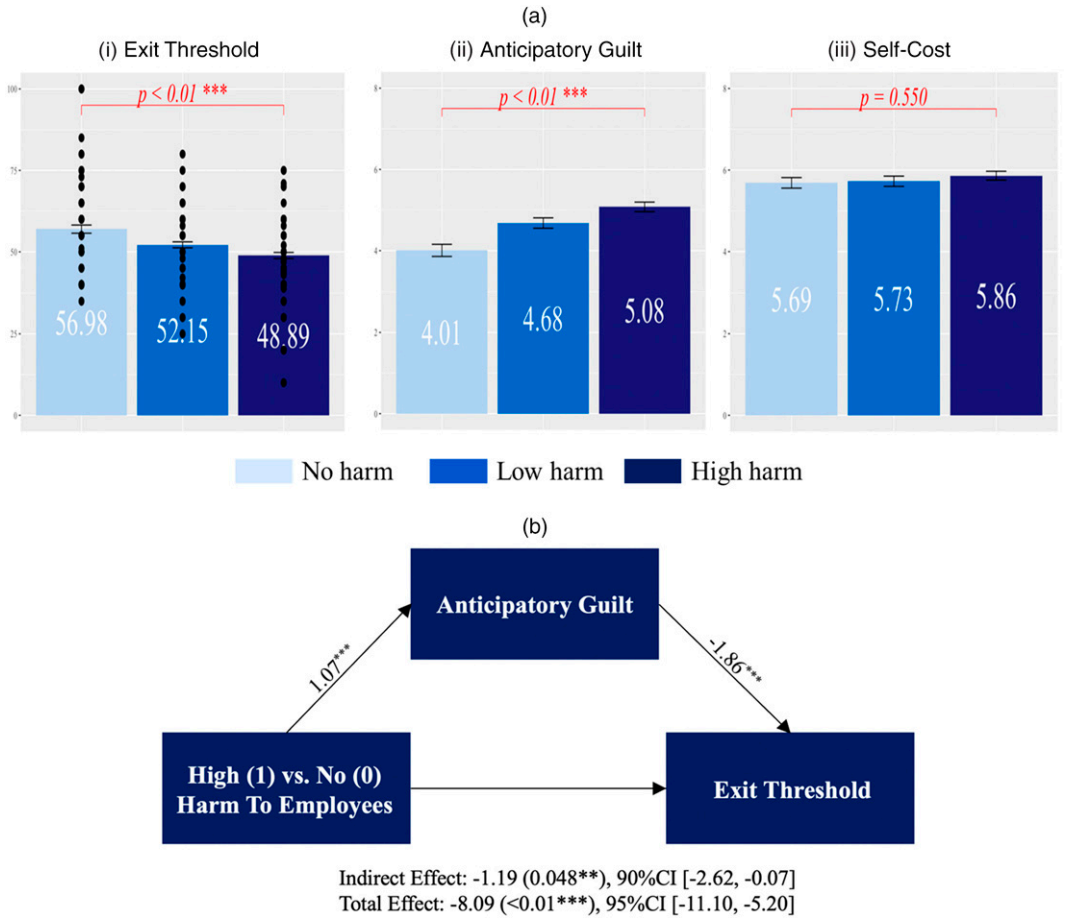
4.2.3.1. Manipulation Check. The results of the ANOVA test show that the three conditions differ significantly in participants' rating of the severity of harm in the vignette ($F(2) = 202.3$, $p < 0.001$).

4.2.3.2. Exit Threshold. The three conditions differ significantly in how participants set their exit threshold ($F(2) = 15.3$, $p < 0.001$). Participants in the high harm condition (*Mean* = 48.89, $SD = 10.41$) on average reported lower exit thresholds than those in the low harm condition (*Mean* = 52.15, $SD = 9.74$, $t = -2.49$, $p = 0.013$) and the no harm condition (*Mean* = 56.98, $SD = 13.84$, $t = -5.16$, $p < 0.001$). Moreover, exit thresholds were significantly lower in the low-harm condition than in the no-harm condition ($t = -3.10$, $p = 0.002$).

4.2.3.3. Self-Interest. Participants in the three conditions do not differ significantly in their concern for their own jobs from closing the store ($F(2) = 0.60$, $p = 0.55$), suggesting that their exit decision is not driven by self-interest.

4.2.3.4. Mediation by Anticipatory Guilt. Participants in the three conditions differ significantly in their guilt from closing the store ($F(2) = 17.12$, $p < 0.001$). Participants in the high harm condition were more likely to expect feelings of guilt (*Mean* = 5.08, $SD = 1.31$) than those in the no harm condition (*Mean* = 4.01, $SD = 1.64$, $t = 5.63$, $p < 0.001$). As hypothesized, anticipatory guilt significantly mediated the effect of high harm (versus

Figure 3. (Color online) Results (Experiment 2)



Notes. (a) *F*-test results (Experiment 2). (b) Mediation by guilt (Experiment 2).

no harm condition) on exit thresholds (indirect effect = 1.19, $p = 0.048$). Figure 3(b) presents the path coefficients, the indirect effect, and the total effect for high- versus no-harm conditions. Refer to Online Appendix D.3 for additional results.

4.2.4. Replications. We next test the robustness of our findings by varying the details of our manipulation. In Online Appendix D.4, we conduct the same experiment as in Experiment 2 but do not emphasize that the manager's salary is tied to store performance during the manipulation. We obtain significant results for not only exit thresholds but also conservative investment. In Online Appendix D.5, we tune the harm to employees as in Experiment 2 but use the generosity of unemployment insurance instead of medical insurance and find robust results.

4.3. Experiment 3: 2 × 2 Full Factorial Design

In Experiment 3, we adopted a between-subjects, full 2 × 2 factorial design (a manager's prosocial preferences: High versus Low × Harm to employees: High versus Low) to test Hypotheses 1–4 in a single experiment and establish the robustness of our earlier findings. We manipulated a manager's prosocial preferences and severity of harm simultaneously, yet in a more straightforward way. The study was preregistered at https://aspredicted.org/G7N_FZC. We find robust support for our theory. We also tested a moderated mediation model using PROCESS package (Hayes 2013), which shows that mediation through anticipatory guilt is strengthened when the harm to employees is more severe.

4.3.1. Participants. We used G*Power to determine the sample size necessary to identify a small-sized effect: 400 participants are required for the study to be powered at 95%. To exceed this sample size, we aimed to recruit 450 participants from Prolific, and those who participated in our previous studies were prescreened. We compensated each participant one U.S. dollar and obtained 433 effective responses (45.96% female, $Mean_{age} = 34.18$, $SD_{age} = 8.55$). Their educational backgrounds were as follows: 42.73% associate's degree or below, 42.26% bachelor's degree, and 15.01% master's degree or above.

4.3.2. Procedures and Measures

4.3.2.1. Manipulation of Prosocial Preferences. We follow Hu and Liden (2015) and take an alternative, more direct approach to manipulating prosocial preferences compared with the subtle picture priming in Experiment 1. In the high prosociality condition ($N = 211$), participants were told that they consider employee welfare and financial performance to be equally important and would think about employees' welfare when making tough decisions. In the control condition ($N = 222$), participants were told that they consider financial performance to be the most important and think about their company's financial performance when making tough decisions.

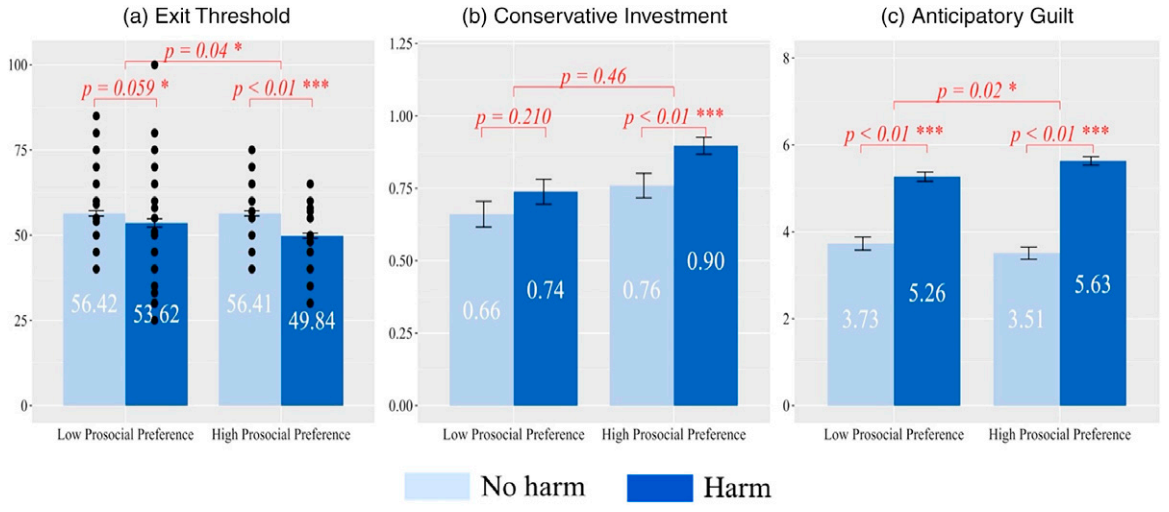
4.3.2.2. Manipulation of Severity of Harm. We used a more direct approach to manipulating the severity of harm. Participants were told that once they stop operating a store, the ownership of the store would be handed over to another company. They were told that "all employees will be laid off" in the high-harm condition ($N = 214$) and "all employees will be kept *without* any layoffs" ($N = 219$) in the no-harm (control) condition. To test whether we successfully manipulated the (perceived) harm to employees, we asked participants the extent to which employees would be negatively affected if they were to stop operating the store (1 = "not at all," 7 = "a great deal").

4.3.3. Results

4.3.3.1. Exit Threshold. The results are plotted in Figure 4. Consistent with our findings in Experiment 1, participants in the high prosocial preference condition showed significantly lower exit thresholds (*Mean* = 53.08, $SD = 8.27$) than in the low prosocial preference condition (*Mean* = 55.07, $SD = 10.87$, $t = -2.15$, $p = 0.03$). Consistent with our findings in Experiment 2, participants in the high-harm condition set significantly lower exit thresholds (*Mean* = 51.73, $SD = 10.79$) than those in the low-harm condition (*Mean* = 56.42, $SD = 7.93$, $t = -5.14$, $p < 0.001$). When prosocial preferences are high, the minimum revenue required to continue operating a store was significantly lower in the high harm condition (*Mean* = 49.84, $SD = 7.69$) than in the low harm condition (*Mean* = 56.41, $SD = 7.52$, $t = -6.28$, $p < 0.001$). However, when prosocial preferences are low, the high- and low-harm conditions showed a much smaller marginally significant difference in exit thresholds ($t = -1.90$, $p = 0.059$), indicating a significant interaction between managerial prosocial preferences and harm to employees ($F = 4.37$, $p = 0.037$).

4.3.3.2. Conservative Investment. Consistent with our findings in Experiment 1, participants in the high prosocial preference condition were more likely to choose the conservative investment option (*Mean* = 0.83, $SD = 0.38$) than those in the low prosocial preference condition (*Mean* = 0.70, $SD = 0.46$, $t = 3.25$, $p = 0.001$). In addition, participants in the high-harm condition were more likely to choose the conservative investment option (*Mean* = 0.82, $SD = 0.39$) than those in the low-harm condition (*Mean* = 0.71, $SD = 0.46$, $t = 2.71$, $p = 0.007$). When prosocial preferences are high, participants in the high harm condition (*Mean* = 0.90, $SD = 0.31$) were more likely to choose the conservative investment option than those in the low harm condition (*Mean* = 0.76, $SD = 0.43$, $t = 2.68$, $p = 0.008$, $\chi^2 = 6.12$, $p = 0.013$). In contrast, when prosocial preferences are low, the high- and low-harm conditions did not significantly differ in their choice of the conservative investment option ($t = 1.26$, $p = 0.210$).

Figure 4. (Color online) *F*-Test Results (Experiment 3)



Note. Top horizontal bars show a two-way interaction between prosocial preference and harm to employees.

4.3.3.3. Mediation by Anticipatory Guilt. Participants in the high-harm condition were more likely to expect feelings of guilt (*Mean* = 5.45, *SD* = 1.08) than those in the low-harm condition (*Mean* = 3.62, *SD* = 1.54, $t = 14.30$, $p < 0.001$). Moreover, in the high prosociality condition, the anticipatory guilt was significantly higher in the high harm condition (*Mean* = 5.63, *SD* = 1.01) than in the low harm condition (*Mean* = 3.51, *SD* = 1.44, $t = 12.34$, $p < 0.001$). In the high prosociality condition, the anticipatory guilt also partially mediated the effect of the high harm condition (versus low harm condition) on exit thresholds (indirect effect = −1.99, $p = 0.036$) and the choice of conservative investment (indirect effect = 0.10, $p = 0.012$). Online Appendix D.6 presents the mediation results and a moderated mediation model using PROCESS package (Hayes 2013), which further specifies that the mediation through guilt is moderated by the severity of harm. The model shows that mediation through anticipatory guilt is strengthened when the harm to employees is more severe. The analysis reinforces our earlier findings of anticipatory guilt as a key component of prosocial cost that affects decision making.

5. General Discussion and Conclusion

We show that managers' concern for employees can shape some of the most consequential corporate strategic decisions, notably exits and divestitures. By identifying anticipatory guilt as a negative moral emotion that serves as a barrier to exiting, we elaborate on the nature of the prosocial cost managers bear when their actions risk harming their employees. The effects of managerial prosocial preferences are much more robust and expansive than previously considered (Yonker 2017, Feng et al. 2023, Keum and Meier 2024), withstanding external scrutiny and affecting not only firm ESG investments and layoffs but also firm financial investments. Our multimethod approach presents a body of evidence across multiple proxies and manipulations of prosocial preferences, dependent variables, moderators, and samples that make a false positive highly unlikely.

Our findings inform three broad streams of literature. First, they contribute to the nascent body of research on *managerial* prosocial preferences that explores the consequences of individual-level prosocial preferences in the organizational context. In particular, our study reinforces the negative view of prosocial tendencies and behaviors (Masulis and Reza 2015, König et al. 2020, Brahm and Poblete 2024, Keum and Meier 2024). Managerial decision making can be biased by not only "dark," self-centered characteristics, such as narcissism and overconfidence, but also "bright" characteristics based on the care for others. Beyond the economic costs associated with inefficient downsizing, managerial prosocial preferences can lead to subtle forms of ingroup bias, specifically a myopic focus on the welfare of current employees at the expense of potential future hires, highlighting a complex moral and welfare calculus (Batson et al. 1995, Bloom 2017). For example, the lack of employment opportunities and slow economic growth can disproportionately penalize the inexperienced youth seeking employment, contributing to a "generational divide" in unemployment rates (Addison and Teixeira 2003). We are cautious not to draw any definitive implications to overall firm performance and the desirability of prosocial CEOs. During industry upturns that demand hiring, the positive effect on employee motivation and retention increases in importance, whereas the negative effect of prosocial CEOs' aversion to layoffs and exits likely remains latent. We expect the overall effect on firm performance to vary over time based on industry conditions.

Second, our findings contribute to the research on the role of emotions in managerial decision making and strategy implementation. Hodgkinson and Healey (2011, p. 1501) lament that the recent growth in behavioral research, although filling the gaps of rational and analytical theories, nonetheless focuses asymmetrically on "cold" cognition based on information processing. These nascent studies tend to depict strategic management as a series of affect-free decisions and activities. Many corporate strategic decisions can cause severe harm to employees, yet little research examines the effect of moral emotions in shaping managerial decisions. We elaborate on guilt as a powerful moral emotion that can have pervasive effects on various firm-level behaviors. By showing how the reconfiguration of firm (human) resources is governed by managers' "thoughts *and* feelings (Hodgkinson and Healey 2011, p. 1512)," our study advances an emotion-based microfoundation of managerial dynamic capabilities (Adner and Helfat 2003, Teece 2007, Håkonsson et al. 2016, De Massis and Foss 2018, Huy and Zott 2019, König et al. 2020). Beyond exit thresholds, examining other organizational decisions and processes that allow managers' emotions to have a significant durable effect promises to be a fertile area for future research.

Lastly, our findings have implications to the psychological design of the managerial decision environment and public policy (Thaler and Sunstein 2008, Powell et al. 2011, Keum 2025). By lessening economic hardship for laid-off workers, social safety nets reduce prosocial managers' guilt and their aversion to reconfiguring human resources. There are concerns that enhancing social safety nets may exacerbate moral hazard and decrease employee productivity by taking away the threat of unemployment as a disciplinary tool (Shapiro and Stiglitz 1984, Flammer and Luo 2017). However, in addition to this negative individual-level effect, our experimental results suggest that there is a counter-veiling positive effect at

the manager level: Medical insurance (Experiment 2, Experiment D.4) and unemployment insurance (Experiment D.5) help prosocial managers make more efficient restructuring decisions by alleviating feelings of guilt. In other words, social insurance programs are a crucial component of the managerial decision environment, affecting the willingness to undertake strategically necessary yet organizationally disruptive actions. As a case in point, Silicon Valley entrepreneurs developing artificial intelligence and other labor-replacing technologies, including OpenAI chief executive Sam Altman, have actively supported universal basic income (NYT 2024).[8] Whether the availability of opportunities to engage in prosocial behaviors (e.g., CSR investment) insulates CEOs against anticipatory guilt and leads to more economically efficient yet ethically questionable decisions promises to be a fertile avenue for future research.

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Endnotes

[1] See https://www.forbes.com/sites/work-in-progress/2011/07/18/shutting-down-a-business-tests-your-leadership.

[2] For example, organizational behavioral research on *employee* prosocial preferences focuses on being "just" and "good," with cheating and helping (organizational citizenship) behaviors as key dependent variables. Behavioral economics research on *individual* prosocial preferences focuses on fairness in resource allocation.

[3] For instance, the emotional toll of implementing layoffs has been linked to increased rates of insomnia, ulcers, depression, thoughts of suicide (De Vries and Balazs 1997, Horowitz and Kenerly 2014, Knight 2020), and even premature death (Guenzel et al. 2023). Lieberman and Eisenberger (2009) show that emotional distress caused by identity threat activates the same neural networks as physical pain.

[4] Anticipatory guilt plays a powerful and familiar role in our daily lives. We often think about taking selfish or immoral actions (e.g., cheating or stealing) but stop because of anticipatory guilt (Grant and Wrzesniewski 2010, Attanasi et al. 2019). Even classical economics, which tends to adhere to a self-centered view of humans, acknowledges that anticipatory guilt restrains selfish tendencies and spurs prosocial action (Smith 1759, Battigalli and Dufwenberg 2007).

[5] We are grateful to Zhenhua Chen for generously sharing his data.

[6] We obtain consistent but slightly weaker results when we use a binary variable *Charity* set to one if a CEO has been involved with at least one charitable organization during their career.

[7] We use the variable *dlrsn* in Compustat ("Research Co Reason for Deletion") to identify specific reasons for exits. We obtain consistent and slightly sharper results when we examine exiting by acquisition or by acquisitions, liquidation, and bankruptcy only.

[8] See https://www.nytimes.com/2024/07/16/technology/ubi-openai-silicon-valley.html.

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