THE ACCOUNTING REVIEW Vol. 85, No. 6 2010 pp. 1861–1886

Supervisor Discretion in Target Setting: An Empirical Investigation

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ABSTRACT: In a setting in which corporate headquarters dictates total sales targets, we study how supervisors allocate sales targets to individual stores. Specifically, we analyze whether supervisors strategically use discretion in the target-setting process to address compensation contracting issues. We first examine whether supervisors use discretion to manage compensation risk. The results are consistent with the agency-theoretic prediction that supervisors provide easier targets to stores facing higher levels of store-specific risk. Next, we examine whether discretion is used to mitigate fairness concerns. The results suggest that, consistent with behavioral arguments, supervisors use discretion to deal with fairness issues, even if the area of the supervisor's discretion is not the source of the fairness concerns. Finally, we analyze whether supervisors use discretion in the target-setting process to reduce their potential confrontation costs. Consistent with research in psychology, we find that supervisors provide easier targets to store stores.

Keywords: discretion; sales target; target-setting process; compensation risk; fairness concerns; confrontation costs.

Editor's note: Accepted by Shannon Anderson.

Submitted: March 2009 Accepted: April 2010 Published Online: November 2010

We are grateful to the participating company for allowing us access to the data. We are especially grateful to Joong-Bum Choi for providing us with institutional insights and helpful suggestions. We also thank Shannon Anderson (editor), Steve Kachelmeier (senior editor), two anonymous reviewers, Marsha Keune, Joan Luft, David Marginson, Brian Mayhew, Frank Moers, Chad Proell, Hanno Roberts, Lloyd Tanlu, Michael Williamson, Dae-Hee Yoon, and participants at the 6th EIASM Conference on New Directions in Management Accounting, 2009 AAA Management Accounting Section Conference, 2009 Global Management Accounting Research Symposium, 2009 AAA Annual Meeting, and workshops at Georgia State University, IESE Business School, the University of Illinois at Urbana–Champaign, University of Wisconsin–Madison, and VU University Amsterdam for their helpful comments. We also thank Ho-Sang Shin for his able research assistance. Professors Bol and Shin gratefully acknowledge research support from the Department of Accountancy at the University of Illinois at Urbana–Champaign, and Professors Keune and Matsumura gratefully acknowledge support from the Department of Accountancy at the University of Statement of Accounting and Information Systems at the University of Wisconsin–Madison.

Data Availability: Data in this study are derived from a proprietary source.

I. INTRODUCTION

This study examines supervisor discretion in target setting. Specifically, in a context in which overall regional sales targets are dictated by corporate headquarters, we analyze how regional directors (supervisors) use discretion to allocate regional sales targets to individual stores in the region. Understanding how performance targets are set is important because such targets play a key role in many aspects of management accounting and control. For instance, in the area of performance evaluation, targets communicate supervisors' expectations and directly influence employee incentives, as meeting or exceeding targets leads to increased short- and/or long-term compensation. Despite the importance of targets, however, our knowledge of supervisor target-setting behavior is limited.

A considerable amount of research examines the related topic of goal setting. Much of this literature addresses the relationship between target achievability and employee effort or performance (see, e.g., Locke and Latham 1990). The results from this goal-setting literature, however, do not provide clear insight into supervisors' target-setting behavior. For example, Merchant and Manzoni (1989) find that supervisors set targets at substantially more attainable levels (i.e., at levels with a higher probability of achievement) than the goal-setting theory predicts. The authors' interview data indicate that the targets are more attainable than predicted because eliciting high levels of employee performance is not supervisors' only concern. Other factors, such as increasing the predictability of budgets or discouraging earnings management, also influence supervisors' target-setting decisions. To date, however, there exists little empirical evidence on the array of factors influencing supervisors' target-setting decisions and methods (Ittner and Larcker 2001; Anderson et al. 2010). We address this gap in the literature by analyzing how directors strategically use discretion in the target-setting process to deal with compensation contracting issues.

Specifically, we begin by examining whether directors use discretion to manage compensation risk. Consistent with predictions based on agency theory, we hypothesize that directors provide more attainable targets to stores that face higher levels of store-specific risk. Next, we study whether discretion is used to mitigate fairness concerns. Drawing on behavioral theory, we predict that directors will provide more attainable targets to stores when other elements of the compensation plan are taken to be unfair. Finally, we analyze whether directors use discretion in the target-setting process to minimize confrontation costs. Consistent with research in psychology, we hypothesize that directors provide easier targets to store managers with relatively higher hierarchical status.

We test our predictions using archival data across multiple years and organizational business units. In particular, we employ a rich dataset from the population of 103 business units (referred to as stores) managed by a postal service provider in Korea for the period 2000 to 2003.¹ Our research setting offers important advantages in examining the use of discretion in target setting. First, our data include initial store targets, which are calculated by applying an established formula to the regional targets set by corporate headquarters, and final store targets, which are set by regional directors. Any differences between the initial and the final targets allow us to draw inferences on how directors use discretion in the target-setting process. Second, in our setting, the sum of the store targets within each region must equal the total regional target set by corporate headquarters; that is, when a director adjusts one store's target downward, one or more other stores' targets must be adjusted upward. As a result, directors must be especially assiduous in

¹ We use the same research setting as Matsumura and Shin (2006), but we analyze a different dataset and a different time period.

using their discretion and, hence, the factors driving the use of discretion should be particularly informative in our setting. Moreover, the zero-sum nature of the adjustments creates a situation in which directors, after considering store managers' proposals, must choose which store managers to satisfy and which to displease. This allows us to examine the social construct of conflict avoidance that can arise in such a situation. Third, consistent with reported practice, store managers in our setting participate in the target-setting process by proposing targets and providing supporting documentation (see, e.g., Umapathy 1987; De With and Dijkman 2008; Shastri and Stout 2008). Our setting therefore allows us to expand the study of target setting beyond much of the prior literature that focuses on unilaterally determined targets (e.g., Locke and Latham 1990).

We find a positive and significant relation between downward target adjustments and our proxies for risk and fairness. These results support the view that directors strategically use their discretion in the target-setting process to manage compensation risk and mitigate fairness concerns. We further find a significantly positive relation between downward target adjustments and store managers' hierarchical status relative to both their director and other store managers. This evidence is consistent with directors using their discretion to avoid confrontations with higher-status store managers.

This study makes several important contributions to the literature. First, ours is among the first studies to take a broader perspective on the supervisor's role in the target-setting process. Prior research focuses on the relationship between target levels and employee effort, but does not take into account the fact that the target-setting process can also be strategically used to manage other elements essential in compensation contracting, such as compensation risk. In a setting in which standardized compensation contracts cover multiple units but there is some discretion in target levels, we find evidence suggesting that supervisors manage compensation risk by using their discretion in the target-setting process to compensate stores for additional store-specific risk.

Second, this study is the first to provide field data evidence consistent with supervisors exercising discretion in the target-setting process to counter other elements of the incentive contract that may be considered unfair. In particular, our results are consistent with supervisors using their discretion to improve fairness perceptions, even if the area in which the supervisor is granted discretion is not the source of the fairness concerns. Our results suggest that supervisors view different elements of the compensation contract as interrelated. When supervisors are not granted discretion to adjust every element of the compensation contract, discretion on one dimension is used to improve compensation contracting on other dimensions. More importantly, this evidence on the strategic use of discretion to harmonize elements of the compensation contract highlights the importance of studying the compensation system as a whole.

Third, this study contributes to the literature by examining the participative target-setting process from the supervisor's perspective. In contrast to much of the target-setting literature that focuses on motivating subordinates' decisions or effort levels, we shed light on how supervisors' individual incentives and preferences influence target-setting decisions. Results suggest that supervisors strategically make discretionary target adjustments to reduce confrontation costs. This implies that supervisors' personal preferences and incentives can result in not only biased performance evaluations at the end of the performance period, but also distorted target levels at the beginning of the contract period.

We describe our research setting in Section II and develop our hypotheses in Section III. In Section IV we discuss our sample and variables. Section V presents the results of our main analyses and Section VI presents the results of additional analyses and robustness tests. Section VII summarizes and concludes.

II. RESEARCH SETTING

Our research setting, which we refer to as POST, is the state-owned provider of comprehensive postal services in Korea. POST is a monopolistic service provider with respect to the handling and delivery of regular mail. However, it competes against several large domestic and international couriers, such as Federal Express and DHL, in the expedited delivery market. Although expedited delivery services are subject to more intense competition, their volume is more controllable from a store manager's perspective because it can be influenced in part by store managers' actions. For instance, an individual store manager significantly increased the store's mail volume by targeting marketing efforts for express parcels to families in rural areas that were identified as having children who were a significant distance from home. Regular mail volume (mostly business bulk mail), on the other hand, is largely determined by factors beyond store managers' control. Because expedited delivery services constitute most of a store's "strategic mail services," we henceforth refer to expedited delivery services simply as strategic mail services.²

POST consists of eight regional headquarters, 214 Business Unit (BU) stores, and 2,579 small windows-only stores.³ At the beginning of 2001, POST restructured the tasks and responsibilities of the store-level administrative staff to reduce the number of redundant administrative tasks performed. Some administrative tasks were delegated to other BU stores and some were moved to the marketing and sales department. At the same time, several BU stores merged in order to realize administrative efficiency gains. Although this did not reduce the number of store locations (the number of BU stores remained unchanged at 214), for administrative purposes POST now only recognizes 103 separate stores. We refer to these 103 higher-level BU stores as Evaluation Unit (EU) stores. Beginning in 2001, performance evaluation was performed at this more aggregated level (see Figure 1).

The Incentive Plan

POST's compensation system provides a fixed salary plus a bonus to all EU store employees, including the store manager. The fixed salary is based on individual qualifications and seniority, while the bonus depends on store performance. Bonuses range from 30 percent to 150 percent of the employee's monthly salary. This means that the maximum annual bonus constitutes approximately 12.5 percent of the employee's annual compensation. Management believes that this incentive system should motivate workers because such bonuses are unusually high among Korean state-owned companies.

As of 2001, the following three performance dimensions are measured and rewarded in POST's incentive plan: profitability, sales, and quality of service (see Table 1 for definitions). The incentive weights on the different dimensions are 60 percent, 20 percent, and 20 percent, respectively. The profitability dimension contains two equally weighted parts: profitability compared to the store's own profitability in the previous year and profitability compared to the profitability of a reference group. This relative performance evaluation (RPE) was introduced in 1998 in an effort to create a more fair reward system that takes into account various exogenous factors likely to affect performance.⁴ Specifically, POST used cluster analysis to classify stores into reference groups of stores with similar business environments. In a continued effort to improve fairness, POST revised the reference groups in 1999. Nevertheless, in June 2000, POST recognized that some employees still perceived considerable unfairness in the reward system (Matsumura and Shin 2006).

² POST's definition of strategic mail services includes domestic express mail, international express mail, domestic registered parcel, philately products, and congratulatory and condolence card services. According to an internal document prepared in 2003, POST estimates that their market shares of parcel and express mail services in the Korean market are 10.1 percent and 30.1 percent, respectively.

³ We use the term Business Unit (BU) store to refer to stores that are equipped to perform the complete set of tasks (ranging from mail reception to final delivery), as opposed to small windows-only stores, which are only able to provide a limited set of services.

⁴ Moreover, management also wanted to address gaming behavior that occurred in response to a previous incentive system that placed considerable weight on improvements from the previous year (Matsumura and Shin 2006).



FIGURE 1

POST consists of 214 Business Unit (BU) stores and 2,579 small windows-only stores. For administrative and performance evaluation purposes, POST aggregates the BU stores and windows-only stores into 103 higherlevel BU stores, which we refer to as Evaluation Unit (EU) stores.

The incentive plan's sales dimension contains two unequally weighted parts, one for regular mail services (with an incentive weight of 6 percent) and one for strategic mail services (with an incentive weight of 14 percent).⁵ In both parts, the ratio of actual sales to target sales determines performance.

Finally, quality of service consists of three dimensions: management efficiency, customer satisfaction, and mail service quality. Customer satisfaction and mail service quality are measured

One might wonder why sales are evaluated separately when a significantly large weight is already placed on profitability. The reason behind the separate measure is that the store's revenue used in calculating the profitability measure is "allocated" revenue, which is calculated by comparing the store's contribution to the entire value chain. The rationale is that mail service involves multiple steps, ranging from receiving and processing mail to final delivery, and these steps are usually performed by different stores that together form the value chain. In contrast, sales revenue simply refers to the revenue earned on sales that originate at the particular store.

Performance Dimension	Performance Measure	Weight
Profitability	Store $Profitability(t)$	30%
	Store Profitability $(t-1)$	
	Store Profitability(t)	30%
	Reference Group Profitability(t)	
Sales Target	Actual Sales of Regular Mail Service(t)	6%
	Target Sales of Regular Mail Service (t)	
	Actual Sales of Strategic Mail Service(t)	14%
	Target Sales of Strategic Mail Service (t)	
Quality of Service	Management Efficiency	5%
	Customer Satisfaction	10%
	Mail Service Quality	5%
Store Profitabil Reference Group Profitabil Sales of Regular Mail Servi Sales of Strategic Mail Servi	 <i>ity</i> (<i>t</i>) = store-level allocated revenue divided by operating cost in yea <i>ity</i> (<i>t</i>) = arithmetic mean of profitability of stores that belong to the sp group in year <i>t</i>; <i>ice</i> (<i>t</i>) = sales revenue from regular mail volume received by the store 	ar <i>t</i> ; pecific reference e at year <i>t</i> ; re at year <i>t</i>

TABLE 1Description of Incentive Plan, 2001–2003

by an independent outside agency contracted by corporate headquarters, and management efficiency is assessed by regional headquarters. All three dimensions receive high scores and the scores traditionally exhibit little variation across stores. POST's attention has therefore focused on increasing sales while maintaining cost effectiveness in order to increase profitability.

At the end of the year, a store's performance score is calculated using the performance dimensions and weights in the incentive plan (see Table 1). The stores are then ranked based on their performance scores. The store's rank determines the size of the bonus for each store. Hence, POST's incentive plan employs a two-stage RPE system that involves (1) RPE measures relative to a reference group of stores and (2) a tournament in which the size of the bonus depends on the store's performance score rank among all the stores. When the incentive plan was initially introduced in 1998, only the top 50 percent of the stores received a bonus. Because a large number of managers considered this unfair (Matsumura and Shin 2006), POST expanded the bonus eligibility to 100 percent of the store's rank.⁶ Consequently, some of the weaker stores still feel that the system puts them at a disadvantage.

⁶ POST also made other notable changes to the incentive plan introduced in 1998 (Matsumura and Shin 2006). The most relevant change from the perspective of this study is that as of 2001, POST replaced the cash flow measures with store-level sales targets. POST also eliminated the productivity dimension due to the high correlation between profitability and productivity measures. Instead, the weight placed on the profitability growth measure was significantly increased, leading to an equal weight of 30 percent on both the relative profitability and the profitability growth measures.

Supervisor Discretion in Target Setting: An Empirical Investigation

We focus this study on sales targets because these are the only major incentive plan design measures over which regional directors have discretion (described further below). While the 20 percent weight placed on the sales target measures might appear relatively low, we believe that more attainable sales targets are considered relevant by the stores because of POST's two-stage RPE system that ultimately bases the size of each store's bonus on its performance rank compared to other stores.⁷

The eight regional directors also receive a fixed salary and a bonus, where the bonus is determined by averaging the bonus rate (as a percent of monthly salary) of all stores under their direct supervision. Regional directors are not rewarded for meeting the regional sales target. By tying the regional directors' bonuses to their stores' bonus levels, POST ensures that the regional directors have incentives to consider how sales targets affect store managers' and workers' motivation.

The Target-Setting Process

The company's overall sales target plays an important role within POST, as the sales targets of the eight regional headquarters, and ultimately of the 103 EU stores, are based upon it. Responsibility for determining the company's overall sales target lies with a corporate task force team, which meets each November to set out the key strategic directions of the firm. Based on the overall macro-economic prospects, the business environment, and the intensity of competition, the team forecasts the coming year's mail volume, operating expenses, and sales. The proposed targets are reviewed by the CEO in December, and after the board of governors approves the targets, they serve as the formal financial targets for the coming year.

Using the company's overall financial targets, the corporate task force prepares operating and capital budgets for the eight regional headquarters. Targets for the regional headquarters are set in a top-down manner. In early January, the CEO presides over a target review committee meeting held at the corporate headquarters. In this meeting, the regional headquarters' budgets, including their sales targets, are presented to the regional directors and discussed in detail.

The regional directors then have responsibility for turning the total regional sales targets into store-specific sales targets. Although headquarters asks the regional directors to develop the initial targets based on a formula, the regional directors have discretion in the setting the targets. The only restriction headquarters imposes is that the sum of all individual stores' targets equals the regional sales target. Because the store managers have superior information about local market conditions, POST designed the target-setting process to be participative. Store managers can potentially influence the sales targets they receive by sharing their private information. Specifically, the steps in the target-setting process are as follows. First, the regional director privately determines the initial sales targets for each store by allocating the regional sales target to the stores according to the relative weight of the stores' prior sales. At the same time, without knowledge of the regional director's initial sales estimates, the store managers are requested to submit proposed sales targets for their stores, as well as supporting documentation to the regional director. When proposing sales targets and providing documentation, the store managers have no knowledge of the total regional sales targets or of the store-specific, formula-based initial targets.

When the regional director has received all store managers' information, s/he compares the formula-based initial estimates to the targets proposed by the stores; based on this information the regional director arrives at his/her targets. In cases in which there is a large discrepancy between

⁷ See, for example, Cichello et al. (2009) for evidence on the importance of small performance changes in tournament structures.

⁸ The regional-level sales targets are shared with the store managers at the regional target review meeting in late January.

the director's target and the target the store proposes, the director solicits further information from the store before setting the final targets. By the end of January (about two weeks after the proposals are submitted), the regional director and all his/her store managers meet at the regional headquarters, and the regional director presents and discusses the sales targets.

III. HYPOTHESES

In the budgeting literature, considerable attention is directed to studying targets. The focus of many of these studies is on budgetary slack,⁹ in particular, on how subordinates are able to obtain easier targets (i.e., create slack). The most robust finding from this literature is the relation between private information and slack. Subordinates are found to use their information advantage to negotiate performance targets that are more easily achieved (Schiff and Lewin 1968; Merchant 1985; Blanchard et al. 1986; Lukka 1988). In addition, when information asymmetry allows slack creation, subordinates' efforts to create slack are related to their marginal returns from effort. For example, Anderson et al. (2010) find that performance targets are lower when subordinates' career horizon and economic dependence on the job are greater. This relation suggests that subordinates expend greater effort to create slack when the returns from such effort are higher. Other factors that are relevant for slack creation include subordinates' risk preferences and preferences for honesty (e.g., Young 1985; Dunk and Nouri 1998; Evans et al. 2001).

Research that examines the target-setting process from the supervisor's side mainly focuses on how target achievability is related to subordinates' performance. The main prediction of this goal-setting literature is that there is a strong positive relation between target difficulty and performance (Locke and Latham 1990). Although the goal-setting literature consistently finds evidence indicating that difficult goals motivate better performance than easier goals, (e.g., Locke and Latham 1990), when Merchant and Manzoni (1989) re-examine these conclusions in a budgeting setting, they find that budget targets are more attainable than the goal-setting literature would predict. Interviews that Merchant and Manzoni (1989) conduct with managers suggest that targets are generally attainable because eliciting high levels of employee performance is not supervisors' only concern; their target-setting decisions are also affected by factors such as increasing the predictability of budgets and discouraging earnings management. Nevertheless, to date there exists little empirical evidence on the array of factors influencing supervisors' target-setting decisions and methods (Ittner and Larcker 2001; Anderson et al. 2010). As a result, an understanding of supervisors' target-setting behavior is far from complete.

We contribute to the knowledge on target setting by analyzing supervisors' target-setting decisions. Our study differs from Merchant and Manzoni (1989) in that we do not examine the general attainability of budget levels. Rather, in our setting, the levels of the regional sales targets, as well as the form of the incentive plan, are dictated by corporate headquarters, and we examine how supervisors use discretion to allocate the regional sales targets to specific stores. Specifically, we study how supervisors use discretion in the target-setting process to manage compensation risk, address fairness concerns, and minimize confrontation costs. Below we develop our predictions with respect to each of these three elements.

Compensation Risk

Much of principal-agent theory focuses on situations with outcome uncertainty, information asymmetry between the principal and agent, and compensation contracts based on measures that,

⁹ Some notable exceptions are Murphy (2000) and Indjejikian and Nanda (2002), who study the performance standards that companies use to evaluate performance. Murphy (2000) examines the factors associated with the choice of an internal versus an external performance standard and Indjejikian and Nanda (2002) examine whether firms fully adjust performance standards for past performance.

due to uncertainty, are imperfectly informative about the agent's effort. Linking pay to performance induces the agent to expend effort, but also transfers some risk from the principal to the agent. The principal must compensate the agent for bearing this risk. The optimal compensation contract, therefore, trades off the costs and benefits of imposing compensation risk on the agent (Holmström 1979; Lambert 2001).

At POST, the form of stores' compensation contracts is standardized and set by corporate headquarters. When the regional directors determine each store's initial sales estimates based on the regional targets set by headquarters, the resulting contracts likely imposes excessive risk on specific stores' managers and employees. Because the regional directors cannot raise store managers' base salary to compensate for bearing more risk, we predict that directors will increase expected compensation to cover a risk premium by adjusting the sales targets downward for stores that face greater environmental uncertainty. This prediction is in line with prior budgeting research that finds a positive relation between slack (more attainable targets) and uncertainty (Merchant 1985; Govindarajan 1986; Schoute and Wiersma 2007).¹⁰

In sum, consistent with agency theory, we hypothesize that supervisors use their discretion in the target-setting process to manage store-specific compensation risk. More formally:

H1: Downward discretionary target adjustments are positively associated with store-specific compensation risk.

Fairness Concerns

Behavioral research shows that the perceived fairness of a compensation plan has a significant impact on employee incentives (e.g., Akerlof and Yellen 1988; Lindquist 1995; Konovsky 2000; Libby 2001). If an employee perceives his/her compensation outcome to be unfair, then s/he will have a negative behavioral reaction toward the compensation system and as a result will not be motivated by it (Cohen-Charash and Spector 2001; Colquitt et al. 2001). These negative behavioral reactions are especially strong when employees believe their outcomes would have been better if decision makers had implemented different procedures (Cropanzano and Folger 1989). Considering the significant influence on employee motivation, supervisors have clear incentives to take fairness concerns into account when managing a compensation plan.

Incentive compensation payouts at POST are partly based on a store's performance relative to its reference group (see Section II). Although the reference groups were created with the intention of increasing fairness in performance evaluation by grouping stores with similar operating environments, interview data reveal that some stores still consider the system unfair, as they believe that they are competing against much stronger stores (Matsumura and Shin 2006). Top management therefore remains concerned about dysfunctional behavior due to perceived unfairness and encourages regional directors to take fairness concerns seriously. Regional directors also have direct incentives to mitigate fairness concerns because decreased worker motivation impacts their own bonuses. Consequently, we expect regional directors to address fairness concerns. However, because they are unable to directly adjust the RPE element of the bonus system (the source of the unfairness complaints), we predict that they respond to these fairness issues by using the discretion they do have, which relates to the target-setting process. In particular, we predict that, by making sales targets easier to achieve for the stores facing more challenging reference groups,¹¹ supervi-

¹⁰ Indjejikian and Matejka (2006) find no such relation.

¹¹ Recall that the sum of the targets must equal the regional target dictated by central headquarters, so reducing one store's target requires raising one or more other targets.

sors can make total incentive compensation more equitable in the sense of attainability. This prediction is in line with previous research that finds that more attainable targets help foster a sense of fairness (see, e.g., Merchant and Manzoni 1989).

In sum, we hypothesize that supervisors strategically use discretion in the target-setting process to help restore the perception of fairness among those managers and store employees who feel that the composition of the reference groups impairs the overall fairness of the incentive system. More formally:

H2: Downward discretionary target adjustments are positively associated with fairness concerns arising from other elements of the incentive system.

Conflict Avoidance

Supervisors are often nonresidual claimants whose incentives are not perfectly aligned with those of the company's owners. Hence, when supervisors tend to their own incentives in using their discretion during the compensation contracting process, their decisions will not necessarily be firm-value maximizing (e.g., Bol 2009). In a target-setting context, this suggests that some of the supervisors' target adjustments will reflect their own utility preferences, where utility encompasses both pecuniary and nonpecuniary elements. One way supervisors can reduce personal costs is by using their discretion in the target-setting process to avoid painful conflicts or confrontations, as these conflicts are stressful and hence costly to supervisors (Murphy and Cleveland 1995).

In our setting, where a downward adjustment to one initial target necessitates an upward adjustment in one or more other targets, conflict is inevitable. Nevertheless, supervisors can reduce confrontation costs by strategically determining which subordinates to disappoint and which to (partly) satisfy. By disappointing those subordinates who are less likely to confront their superior, supervisors avoid conflict as much as possible.

One factor influencing how much "push back" a supervisor will likely receive from a subordinate is the subordinate's status, that is, the amount of respect and prominence an individual holds within a social group (Anderson et al. 2001; Anderson and Berdahl 2002). Because of their social standing, high-status individuals are more likely to challenge their supervisor's decision. Consequently, communicating unfavorable information to relatively high-status individuals is expected to be more costly than communicating unfavorable information to relatively low-status individuals who are more likely to accept the decision without a challenge (Rahim 1986). Accordingly, we predict that supervisors are more likely to adjust targets downward for those subordinates who hold a relatively high status within the organization. This prediction is consistent with empirical research from psychology that suggests that managers resolve conflicts differently depending on the status of the individuals involved: supervisors tend to compromise with those who have similar status, whereas they tend to impose decisions on those with lower status (e.g., Rahim 1986; Phillips and Cheston 1979; Yukl and Falbe 1990). This prediction is also in line with findings that show that, consciously or not, individuals concede more to higher-status individuals in negotiations (Thye 2000; Thye et al. 2006).

We note that a related investigation in the accounting domain is Anderson et al. (2010), who examine whether job tenure influences target attainability. The authors find a negative association between subordinates' job tenure and target levels.¹² Although job tenure could proxy for status, Anderson et al. (2010) argue that in their setting, the negative association between job tenure and target levels is more likely the result of bargaining power from increased local knowledge, not status. In contrast, the source of status that is especially pertinent in our setting is job grade within

¹² Indjejikian and Matejka (2006) incorporate business-unit controller job tenure as a control variable but find no evidence that it is related to more attainable targets.

the organization's hierarchy. This source is not correlated with increased knowledge of the local environment, as POST maintains a policy of frequent job rotation.¹³ Hence, supervisors' consideration of hierarchical status arises from individual influence, not from private information.

In sum, we predict that supervisors use their discretion in the target-setting process to decrease the sales targets of high-status store managers to reduce confrontation costs. More formally:

H3: Downward discretionary target adjustments are positively associated with higher relative hierarchical status.

IV. RESEARCH DESIGN

Sample

To study the target-setting process, we collected annual performance evaluation data from 2000 (the first year sales targets were part of the incentive plan) through 2003 for POST's 103 EU stores. We obtained financial and operational data of individual stores from POST's performance measurement system, and control variables such as demographics and individual store characteristics from one of the company's databases that tracks information on individual stores. To gain an understanding of the incentive plan and the company's background, we studied a variety of company documents and interviewed corporate headquarters' managers, including one of POST's incentive plan designers.

Dependent Variable

To capture the regional directors' use of discretion in the target-setting process, we measure the extent to which regional directors adjust the initial formula-based sales estimate. Recall from Section II that the regional directors allocate the regional sales targets set by corporate headquarters into store-level sales targets. The regional director first calculates the initial sales estimate by allocating the regional sales target according to the relative weight of the stores' prior-year sales and then, after receiving information from the individual stores, adjusts this estimate upward or downward to arrive at the final sales target. We use the size of the adjustment (*ADJUST*), measured by subtracting the final store-level sales target (*TAR_SALES*) from the regional director's initial formulaic estimate (*TAR_SALES_SUP*), as our proxy for regional directors' use of discretion at each store. We designate *ADJUST_REG* and *ADJUST_STRA* as the adjustments for regular sales and strategic sales, respectively.

Explanatory Variables

Compensation Risk Due to Environmental Uncertainty

To examine whether regional directors use discretion in the target-setting process to manage compensation risk, we identify stores that face different levels of compensation risk. We do so by capturing store-specific levels of environmental uncertainty. In our setting, regular and strategic mail volumes received by a store are summary measures that capture external changes in the local business environment. These measures allow us to use the change in regular and strategic mail

¹³ We contacted the 103 stores directly and requested store managers' tenure data (as of January of 2001, 2002, and 2003, when the target-setting process occurs). We received 218 store-year managers' tenure data (out of 309 possible observations). The mean (median) store manager tenure was 11 (9) months and the maximum store manager tenure was 35 months. We also obtained a list of the 22 former regional directors who served at a specific regional headquarters from 1970 to 2003 and found that the mean tenure of a regional director was 19 months. The short tenure of store managers and regional directors results from the traditional rank-in-person system of the Korean government, where one is hired not for a specific position but as an individual suited to occupy multiple positions. This system has been criticized for limiting employees from developing expertise in specialized fields. However, this is not the case for POST's store managers because only the location and generally not the job function changes.

volume to capture the volatility of the business environment faced by each store. More specifically, we use the time-series standard deviation of the logarithm of regular (strategic) mail volume received by a particular store over the most recent four years to create *NOISE_MV_REG* (*NOISE_MV_STRA*) (Holthausen et al. 1995; Nagar 2002).

Fairness Concerns

To analyze whether store managers' concerns about the fairness of the incentive plan influence regional directors' use of discretion in the target-setting process, we create a proxy for store managers' fairness perceptions. As described in Section II, one of POST's main performance measures is based on a comparison to a reference group of similar stores. Matsumura and Shin (2006) document that store managers who feel that their reference group is too challenging are not motivated to exert effort because they consider the incentive system unfair. We create a proxy that captures such perceptions of unfairness by measuring how challenging a store's reference group is. To capture the difficulty of the reference group, we examine a store's profitability as compared to its reference group in the prior year. However, because weak performance relative to the reference group could be due to reasons other than a challenging reference group (e.g., poor management or lack of effort), we also incorporate the store's performance compared to the prior year's fixed sales targets. We reason that weak performance relative to the reference group but strong performance compared to the individual target indicates a challenging reference group.

Consistent with Matsumura and Shin (2006), we define UNFAIR_REG as the difference between a store's yearly rank on its RPE profitability measure (profitability divided by the reference group mean) and the store's yearly rank on the regular sales target measure in the prior year. That is:

$$UNFAIR_REG = Rank \left[\frac{Store \ Profitability_{t-1}}{Reference \ Group \ Profitability_{t-1}} \right] - Rank \left[\frac{Actual \ Sales \ of \ Regular \ Mail_{t-1}}{Target \ Sales \ of \ Regular \ Mail_{t-1}} \right]$$

UNFAIR_STRA is defined similarly for strategic mail, using the actual and target sales of strategic mail. Higher values of the *UNFAIR* variables indicate higher unfairness.¹⁴ That is, we expect an increased perception of unfairness when a store's profitability relative to its peers is low even though it meets or beats its sales targets.

Conflict Avoidance

To examine whether directors use discretion in target setting to reduce confrontation costs by avoiding conflicts with relatively higher-status store managers, we use job grade level, which is one of the most important indicators of status at POST.¹⁵ All BU-level store managers of POST are level 4 or 5 employees and regional directors are level 1, 2, or 3 employees of the Korean government's pay schedule. We use this information to create the indicator variable *STATUS*,

¹⁴ Thus, the possible rank differences range from -102 to 102. Suppose store A is ranked 93rd (out of 103 stores) on the RPE profitability measure but ranked 5th on the regular sales target measure in 2000. This indicates that while store A's actual sales far exceeded its regular mail sales target, its profitability relative to peer stores is very low. The difference in ranking for this store is 88, resulting in a value of 88 on our *UNFAIR_REG* variable. In contrast, suppose store B is ranked 1st on the RPE profitability measure but ranked 98th on the regular sales target measure in 2002. Store B's difference in ranking is -97, resulting in a value of -97 on our *UNFAIR_REG* variable.

¹⁵ Similar to the General Schedule of U.S. Federal employees, the Korean government uses job grades that conform to the government's pay schedule. The pay schedule assigns a grade level from 10 to 1 (with 1 the highest) to each job according to the minimum level of education and experience that the position requires. An employee's salary increases as that employee's level on the scale increases. Typically, an employee moves up the grade scale as his/her seniority

which equals 1 if the difference in job grade level between the regional director and the store manager is 2 or less, and 0 otherwise.¹⁶ Hence, *STATUS* is 1 if the status difference between the regional director and the store manager is small.

Control Variables

We include a set of proxy variables that control for differences in target-setting behavior. First, we control for the level of information asymmetry between regional directors and store managers, as the budgeting literature has long recognized the potential effect of information asymmetry in a participative budgeting process (e.g., Schiff and Lewin 1970; Christensen 1982; Baiman and Evans 1983; Indjejikian and Matejka 2006). Drawing on the performance evaluation literature, we identify divisional complexity as an important source of information asymmetry (Holthausen et al. 1995; Bushman et al. 1995; Keating 1997; Bushman et al. 2004; Berry et al. 2006). We capture the complexity of the different EU stores by including the number of small windows-only stores (N_SUB) and the number of BU stores added to an EU store for performance evaluation purposes since 2001 (N_MERGE).¹⁷

Second, we include the number of store employees (N_EMP) as a proxy for size (Indjejikian and Matejka 2006). Because the status variable is likely correlated with store size, it is important to control for size to eliminate potential confounding effects.

Third, we control for the competitive environment of the area (*COMPET*) in which the store operates, as prior research documents that the degree of competition influences budget misrepresentation (Bruggen and Luft 2009). The variable *COMPET* takes the value of 1 for urban areas and 0 for rural areas. We distinguish between urban and rural areas because major competitors of POST, such as domestic and international couriers, mainly operate in profitable urban areas (see Banker and Mashruwala [2007] for a similar distinction in a retail industry setting). This variable also captures the economic viability of the area in which the store operates.

Finally, in addition to year indicator variables, we include seven region indicator variables (*REGION*) to control for unspecified supervisor and region-specific differences in the target-setting process.

The above discussion leads to the following specifications:

$$ADJUST_REG_{i,t} = \alpha_0 + \alpha_1 NOISE_MV_{i,t-1} + \alpha_2 UNFAIR_{i,t-1} + \alpha_3 STATUS_{i,t-1} + \alpha_4 N_SUB_{i,t-1} + \alpha_5 N_MERGE_{i,t-1} + \alpha_6 N_EMP_{i,t-1} + \alpha_7 COMPET_{i,t-1} + REGION_INDICATORS + YEAR_INDICATORS + \varepsilon_{i,t}$$
(1)

$$ADJUST_STRA_{i,t} = \alpha_0 + \alpha_1 NOISE_MV_{i,t-1} + \alpha_2 UNFAIR_{i,t-1} + \alpha_3 STATUS_{i,t-1} + \alpha_4 N_SUB_{i,t-1} + \alpha_5 N_MERGE_{i,t-1} + \alpha_6 N_EMP_{i,t-1} + \alpha_7 COMPET_{i,t-1} + REGION_INDICATORS + YEAR_INDICATORS + \varepsilon_{i,t}$$
(2)

where Equation (1) pertains to regular mail, Equation (2) pertains to strategic mail, i indicates

within the firm increases, although above-average job performance can accelerate this progress. We obtained store managers' salary data for 1997 and found that the average salary for a level 4 store manager is significantly higher than that of a level 5 store manager (p = 0.07).

¹⁶ The mean (median) job grade difference between a store manager and a regional director in our sample is 2.18 (2.00). Thus, we use the median job grade difference (2) as our cut-off to create the indicator variable *STATUS*.

¹⁷ Prior research also documents budget emphasis and the degree of budget participation as factors that influence subordinates' target-setting behavior (e.g., Merchant 1985; Dunk 1993; Dunk and Nouri 1998). However, because the emphasis on targets and the degree of participation in the target-setting process are consistent over our sample, we do not separately control for these factors.

stores (i = 1,...,103), and t indicates time (t = 2001, 2002, 2003).¹⁸ We estimate Equations (1) and (2) using OLS regression analysis with Huber-White robust standard errors clustered by store. These standard errors are robust to both serial correlation and heteroscedasticity (Rogers 1993).¹⁹

V. RESULTS

Descriptive Statistics and Univariate Correlations

Table 2 presents descriptive statistics of the variables used in the analyses.²⁰ The average store-level sales target for regular mail services (TAR SALES REG) is 7.81 billion Korean Won, while the average sales target for strategic services (TAR SALES STRA) is 2.27 billion Korean Won. The mean of ADJUST is 0 by design because the target-setting process at the regional level is a zero-sum game. The mean of NOISE_MV_STRA is higher than that of NOISE_MV_REG, which indicates that strategic mail volume displays higher temporal variability than regular mail volume. The mean of UNFAIR is also 0 by construction because this measure is based on the raw difference between a store's rank on the relative profitability measure and its rank on the sales target measure. The mean of STATUS is 0.57; that is, 57 percent of the store managers have a job grade that is within 2 levels of their regional supervisor. On average, EU stores are responsible for approximately 25 windows-only stores and two BU stores (the mean of *N_MERGE* is 1.07). While not reported in Table 2, regional headquarters are responsible for supervising 22 EU-level stores on average. Consistent with Merchant and Manzoni's (1989) field-based findings that targets are set to be achievable 80 to 90 percent of the time, POST stores' actual sales in regular (strategic) mail exceed target sales 73 percent (83 percent) of the time.²¹ Table 3 provides details on Pearson correlations among the variables used in the analyses.

Determinants of Supervisors' Target Adjustments

Columns (1) and (2) of Table 4 present the estimation results of Equations (1) (regular mail) and (2) (strategic mail), which examine regional directors' use of discretion in the target-setting process. Consistent with H1, the coefficient on *NOISE_MV*, our proxy for environmental uncertainty, is positive and significant at the 5 percent level for strategic mail. This is consistent with regional directors using their discretion in the target-setting process to manage compensation risk arising from environmental uncertainty. The coefficient on *NOISE_MV* is not significant for regular mail. A possible explanation for this finding is that the lower differential compensation risk for regular mail (the temporal variability of mail volume is lower for regular mail than for strategic mail, as seen in Table 2) reduces the need for risk adjustments to a level where our tests are not powerful enough to detect them empirically. The low environmental uncertainty in conjunction with the much lower weight placed on the regular mail sales target (i.e., 6 percent for regular mail

¹⁸ Because the BU store-level sales targets are determined at the beginning of the year, all explanatory variables are lagged values.

¹⁹ Because the sum of all store-level adjustments that a regional director makes in a given year must be zero, we check whether our findings are robust to potential error dependence among stores in the same region for a given year by using standard errors clustered by 24 region-year pairings (8 regions for 3 years). In addition, we run yearly regressions of Equations (1) and (2) using standard errors clustered by region. The results are similar to those reported in Table 4.

²⁰ Descriptive statistics are based on 309 store-year observations from 2001 to 2003 for multivariate analyses.

²¹ We compare the relative forecast accuracy of the final targets (*TAR_SALES*) and the director's initial formula-based estimate (*TAR_SALES_SUP*) with respect to predicting actual sales. Consistent with the measurement of analyst forecast error in financial archival research, we construct a measure of forecast accuracy by taking the absolute value of the difference between the final sales target (initial sales estimate) and actual sales, scaled by actual sales. We find that the regional director's initial formula-based estimate is a more accurate predictor (i.e., exhibits smaller forecast error) of actual sales for both regular and strategic mail. The paired t-tests suggest that the difference in forecast accuracy is statistically significant at the 1 percent level. This finding lends support to the conjecture that supervisors' strategic and self-serving use of discretion in target setting may result in targets that are less predictive of future performance.

TABLE 2								
Descriptive Statistics								
Variable	Mean	Std. Dev.	Q1	Median	Q3	n		
TAR_SALES_REG _t	7.81	7.29	3.84	5.97	8.67	309		
TAR_SALES_STRA _t	2.27	1.86	1.29	1.83	2.48	309		
$ACT_SALES_REG_t$	8.42	7.38	4.01	6.46	9.63	309		
ACT_SALES_STRA _t	2.46	1.78	1.49	2.02	2.84	309		
TAR_SALES_REG_SUP _t	7.81	6.83	3.72	6.01	9.05	309		
TAR_SALES_STRA_SUP _t	2.27	1.70	1.31	1.83	2.61	309		
$ADJUST_REG_t$	0.00	1.15	-0.23	-0.03	0.28	309		
$ADJUST_STRA_t$	0.00	0.32	-0.08	0.02	0.12	309		
$NOISE_MV_REG_{t-1}$	0.11	0.13	0.04	0.07	0.12	309		
$NOISE_MV_STRA_{t-1}$	0.16	0.11	0.09	0.14	0.20	309		
$UNFAIR_REG_{t-1}$	0.00	40.79	-26.00	-2.00	29.00	309		
$UNFAIR_STRA_{t-1}$	0.00	40.84	-28.00	1.00	26.00	309		
$STATUS_{t-1}$	0.57	0.50	0.00	1.00	1.00	309		
N_SUB_{t-1}	25.11	13.93	14.00	22.00	35.00	309		
N_MERGE_{t-1}	1.07	1.01	0.00	1.00	2.00	309		
N_EMP_{t-1}	2.50	0.86	1.88	2.43	3.05	309		
$COMPET_{t-1}$	0.61	0.49	0.00	1.00	1.00	309		

Variable Definitions: *TAR_SALES_REG* = store-level sales target for regular mail (in billion Korean Won); TAR_SALES_STRA = store-level sales target for strategic mail (in billion Korean Won); ACT_SALES_REG = store-level actual sales from regular mail (in billion Korean Won); ACT_SALES_STRA = store-level actual sales from strategic mail (in billion Korean Won); TAR_SALES_REG_SUP = regional director's initial sales estimate for regular mail (in billion Korean Won); TAR_SALES_STRA_SUP = regional director's initial sales estimate for strategic mail (in billion Korean Won); $\overline{ADJUST}_{REG} = TAR_{SALES}_{REG}_{SUP} - TAR_{SALES}_{REG};$ $ADJUST_STRA = TAR_SALES_STRA_SUP - TAR_SALES_STRA;$ $NOISE_MV_REG$ = time-series standard deviation of the logarithm of regular mail volume received by the store over the most recent four years; $NOISE_MV_STRA$ = time-series standard deviation of the logarithm of strategic mail volume received by the store over the most recent four years; $UNFAIR_REG =$ difference between the store's rank on relative profitability and rank on the sales target measure for regular mail, with higher values indicating stores that exhibited a high achievement of regular mail sales compared to their target, but low relative profitability; UNFAIR_STRA = difference between the store's rank on relative profitability and rank on the sales target measure for strategic mail, with higher values indicating stores that exhibited a high achievement of strategic mail sales compared to their target, but low relative profitability; STATUS = indicator variable that takes the value of 1 if the difference in job grade level between the regional director and the store manager is 2 or less, and 0 otherwise; $N_SUB =$ number of small windows-only stores the EU manager is responsible for; N_MERGE = number of BU stores added to an EU store for performance evaluation purposes; N_EMP = number of employees (in hundreds); and COMPET = indicator variable that takes the value of 1 for stores in urban areas and 0 for stores in rural areas.

versus 14 percent for strategic mail) make it less likely that the costs of making the adjustment outweigh the benefits.

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TABLE 3 Pearson Correlations among Variables											
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. $ADJUST_REG_t$	1.00										
2. $ADJUST_STRA_t$	0.33	1.00									
3. NOISE_ MV_REG_{t-1}	$0.09^{ m NS}$	0.07^{NS}	1.00								
4. NOISE_ MV_STRA_{t-1}	$0.09^{ m NS}$	0.10*	0.49	1.00							
5. STATUS	0.02^{NS}	-0.01^{NS}	-0.11*	-0.15	1.00						
6. $UNFAIR_REG_{t-1}$	0.28	0.15	0.06 ^{NS}	0.10*	-0.11^{**}	1.00					
7. $UNFAIR_STRA_{t-1}$	0.25	0.23	-0.11^{NS}	0.00^{NS}	0.06^{NS}	0.41	1.00				
8. N_SUB_{t-1}	0.08^{NS}	0.13**	-0.21	-0.22	0.44	-0.02^{NS}	0.11 *	1.00			
9. N_MERGE_{t-1}	$0.08^{ m NS}$	0.15	-0.22	-0.25	0.38	0.00^{NS}	0.10 *	0.84	1.00		
10. N_EMP_{t-1}	-0.13^{**}	-0.13^{**}	-0.24	-0.17	$0.08^{ m NS}$	-0.08^{NS}	-0.06^{NS}	0.76	0.67	1.00	
11. $COMPET_{t-1}$	-0.01^{NS}	-0.08^{NS}	0.21	0.30	-0.33	0.02^{NS}	-0.08^{NS}	-0.40	-0.31	-0.05^{NS}	1.00

*,**Significantly different from 0 at the 0.10 and 0.05 percent level, respectively (two-tailed). ^{NS} Not significantly different from 0 at the 0.10 level (two-tailed).

All other correlation coefficients are significantly different from 0 at the 0.01 percent level (two-tailed). For variable definitions, see Table 2.

TABLE 4 Determinants of Supervisors' Target Adjustments (t = 2001-2003)

$$\begin{split} ADJUST_{i,t} &= \alpha_0 + \alpha_1 NOISE_MV_{i,t-1} + \alpha_2 UNFAIR_{i,t-1} + \alpha_3 STATUS_{i,t-1} + \alpha_4 N_SUB_{i,t-1} \\ &+ \alpha_5 N_MERGE_{i,t-1} + \alpha_6 N_EMP_{i,t-1} + \alpha_7 COMPET_{i,t-1} \\ &+ REGION_INDICATORS + YEAR_INDICATORS + \varepsilon_{i,t} \end{split}$$

		(1)	(2)		
		ADJUST			
		ADJUST_REG	ADJUST_STRA		
Variable	Predicted Sign	Coefficient (t-statistic)	Coefficient (t-statistic)		
Constant	?	0.944**	0.378***		
NOISE_MV _{t-1}	(+)	(2.15) 0.154	(2.95) 0.305**		
UNFAIR _{t-1}	(+)	(0.30) 0.006^{***}	(2.02) 0.001*		
$STATUS_{t-1}$	(+)	(2.64) 0.604***	(1.40) 0.107**		
N_SUB_{t-1}	(+)	(2.95) 0.069***	(1.65) 0.022***		
N_MERGE_{t-1}	(+)	(3.47) 0.143	(3.30) 0.097**		
N_EMP_{t-1}	?	(1.09) -1.024***	(2.92) -0.357***		
COMPET _{t-1}	?	(-4.65) 0.351**	(-3.45) 0.053		
n		(2.11) 309	(1.09) 309		
Adjusted R ²		23.5%	31.6%		

*, **, *** Significant at the 0.10, 0.05, and 0.01 levels, respectively (one-tailed test if a signed prediction is provided, two-tailed otherwise).

For parsimony, coefficients on region and year indicators are not reported. Reported t-statistics are based on the Rogers (1993) standard errors.

Variable Definitions:

ADJUST = ADJUST_REG or ADJUST_STRA; ADJUST_REG = TAR_SALES_REG_SUP - TAR_SALES_REG; ADJUST_STRA = TAR_SALES_STRA_SUP - TAR_SALES_STRA; NOISE_MV_REG = time-series standard deviation of the logarithm of regular mail volume received by the store over the most recent four years; NOISE_MV_STRA = time-series standard deviation of the logarithm of strategic mail volume received by the

store over the most recent four years;

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TABLE 4 (continued)

UNFAIR_REG = difference between the store's rank on relative profitability and rank on the sales target
measure of regular mail, with higher values indicating stores that exhibited a high
achievement of regular mail sales compared to their target, but low relative profitability;
$UNFAIR_STRA =$ difference between the store's rank on relative profitability and rank on the sales target
measure of strategic mail, with higher values indicating stores that exhibited a high
achievement of strategic mail sales compared to their target, but low relative profitability;
STATUS = indicator variable that takes the value of 1 if the difference in job grade level between
a regional director and a store manager is 2 or less, and 0 otherwise;
$N_SUB =$ number of small windows-only stores the EU manager is responsible for;
N_MERGE = number of BU stores added to an EU store for performance evaluation purposes since
2001;
N_EMP = number of employees (in hundreds); and
COMPET = indicator variable that takes the value of 1 for stores in urban areas and 0 for stores in
rural areas.

Next, as predicted by H2, the results in Table 4 suggest that regional directors use their discretion to address apparent unfairness of other elements of the incentive contract. The coefficients on *UNFAIR* are positive and significant at the 1 and 10 percent levels for regular and strategic mail, respectively. Recall from Section II that from a store manager's perspective, regular mail is less controllable than strategic mail. This difference is relevant, as competing against a reference group of stronger stores will likely be even more frustrating when the manager has little control over the specific dimension. When addressing fairness concerns, regional directors are therefore more likely to adjust targets on the less controllable dimension than on the more controllable dimension. Hence, the stronger result for regular mail, which is less controllable, is consistent with our fairness-based predictions.²²

Table 4 also shows that, consistent with H3, the coefficients on *STATUS* are positive and significant at the 1 percent level for regular mail and at the 5 percent level for strategic mail. This finding suggests that supervisors assign more attainable targets to store managers of more similar social status to reduce confrontation costs.

Finally, our results corroborate the findings of prior literature on budgetary slack, suggesting that complexity of operations creates information asymmetry that subordinates use to their advantage to obtain more attainable targets. Specifically, the coefficients on N_SUB are positive and significant at the 1 percent level for both regular and strategic mail and the coefficient on N_MERGE is positive and significant at the 5 percent level for strategic mail.

²² As discussed in Section II, a regional director's bonus rate is the average bonus rate of all stores in the same region. Hence, assigning more (less) attainable sales targets to stores when poor (favorable) RPE performance is anticipated may also be consistent with a regional director's economic incentive. If a regional director's economic incentive drives our results, however, we would expect stronger results for strategic mail than for regular mail because strategic mail receives a higher incentive weight (14 percent as compared to 6 percent of regular mail) and therefore provides an easier way to create an impact. This is not what the results show (see Table 4). Furthermore, if a regional director solely tries to maximize his/her bonus payout when setting store-level sales targets, s/he would only consider a store's prior year performance on the RPE incentive element rather than comparing the store's RPE performance to its sales target performance. When we replace UNFAIR_REG and UNFAIR_STRA with a store's rank on relative profitability in the prior year to better capture a director's self-interest, we find that the coefficient on RPE rank is insignificant (p = 0.13 (0.35) one-tailed) for regular (strategic) mail in contrast to the results reported in Table 4. Overall, we conclude that our results are more consistent with our fairness-based predictions.

VI. ADDITIONAL ANALYSES AND ROBUSTNESS TESTS Related Dependent Variables: Attainability

In the main analysis, we use the extent to which the regional directors adjust their formulaic initial estimate upward or downward for final target determination as a proxy for supervisors' use of discretion in target setting. Because of the focus in the budgeting literature on the related issue of target attainability, and because target attainability is one of the factors that regional directors consider as they adjust initial targets upward or downward, we compare our findings to results using two measures of target attainability as the dependent variable.

First, in the target-setting process, supervisors likely make a private estimate of future store sales that, unlike the initial sales estimate, is based not only on past sales, but also on the regional director's knowledge of the store's characteristics and competitive environment. We try to capture this private estimate by using a prediction model that includes past sales, store characteristics, and environmental characteristics available in POST's databases (see the Appendix for details). We use the store-year-level predicted values of sales resulting from the prediction model to proxy for the regional directors' private estimates of future sales. We then compute target attainability (*AT*-*TAIN1*) by taking the difference between the proxy for the directors' estimates of sales and the final sales targets. A positive (negative) value means that the target is set lower (higher) than the level predicted by the exogenous factors influencing the store-level sales, which we interpret as implying that the sales target is more (less) attainable.

Second, following prior studies (e.g., Merchant and Manzoni 1989; Indjejikian and Nanda 2002; Indjejikian and Matejka 2006; Anderson et al. 2010) we use the difference between actual sales and target sales as an additional proxy for target attainability (*ATTAIN2*).

Table 5 presents the results from estimating Equations (1) and (2) when we use our proxies for target attainability, *ATTAIN1* and *ATTAIN2*.²³ In contrast to the results of our main analysis concerning H1, the coefficient on *NOISE_MV* is positive and significant at the 1 percent level for regular mail but is not significant for strategic mail when *ATTAIN1* is used as a dependent variable. When we use *ATTAIN2* as a dependent variable, however, the results are similar to those reported in Table 4.

Consistent with the results of our main analysis presented in Table 4, we find support for H2 and H3 when using the alternative dependent variables. The coefficient on *UNFAIR* is positive and significant at the 5 percent level or less except in column (4), where the coefficient is not significant at the 5 percent level or less except in column (4), where the coefficient is not significant at the 5 percent level except in column (4), where the coefficient is not significant at the 5 percent level except in column (4), where the coefficient is not significant (p = 0.12, one-tailed). We also confirm the effect of information asymmetry on target attainability. In all four regressions, the coefficients on *N_SUB* are positive and significant. Overall, we are able to confirm the findings from our main analysis when we replace the extent of regional directors' discretionary target adjustments with measures of target attainability,²⁴ suggesting that target attainability appears to be a key factor underlying regional directors' target adjustments. This result is also consistent with findings in prior research that supervisors consider a number of factors when they determine business units' targets (Merchant and Manzoni 1989).

²³ As expected, our proxies for target attainability are positively correlated with our measure of supervisors' target adjustments (ADJUST) at the 1 percent level. The correlation between ADJUST_REG (STRA) and ATTAIN1_REG (STRA) is 0.30 (0.36) and the correlation between ADJUST_REG (STRA) and ATTAIN2_REG (STRA) is 0.64 (0.81).

²⁴ By comparing actual performance against target performance over time, prior research documents that exceeding the target in the current year is positively associated with the probability of exceeding the target in the next year (Indjejikian and Nanda 2002; Indjejikian and Matejka 2006). This suggests that our measures of target attainability, and ATTAIN2 in particular, could be serially correlated. To control for potential serial correlation we include the lagged value of ATTAIN1 and ATTAIN2 in the estimation models; this does not change our inferences.

TABLE 5Determinants of Target Attainability(t = 2001-2003)

$$\begin{split} ATTAIN_{i,t} &= \alpha_0 + \alpha_1 NOISE_MV_{i,t-1} + \alpha_2 UNFAIR_{i,t-1} + \alpha_3 STATUS_{i,t-1} + \alpha_4 N_SUB_{i,t-1} \\ &+ \alpha_5 N_MERGE_{i,t-1} + \alpha_6 N_EMP_{i,t-1} + \alpha_7 COMPET_{i,t-1} \\ &+ REGION_INDICATORS + YEAR_INDICATORS + \varepsilon_{i,t} \end{split}$$

		(1)	(2)	(3)	(4)			
		Alternative Dependent Measure						
	Duradiated	ATTAI	N1	ATTAIN2				
	Sign	REG	STRA	REG	STRA			
Constant	?	0.178	0.738**	0.884**	0.235**			
$NOISE_MV_{t-1}$	(+)	(0.49) 1.646***	(2.16) 0.531	(2.20) 0.429	(2.36) 0.352**			
$UNFAIR_{t-1}$	(+)	(2.48) 0.012***	(1.26) 0.005***	(0.62) 0.006**	(2.17) 0.000			
STATUS _{t-1}	(+)	(4.99) 0.708**	(3.38) 0.399**	(1.97) 0.292**	(0.10) 0.064			
$N SUB_{t-1}$	(+)	(2.13) 0.067***	(2.14) 0.038***	(1.99) 0.034**	(1.18) 0.017***			
N_MERGE_{t-1}	(+)	(3.07) 0.013	(2.38) 0.051	(2.09) -0.171	(3.41) 0.060**			
N_EMP_{t-1}	?	(0.09) -0.655**	(0.61) -0.701***	(-1.43) -0.129	(2.12) -0.210***			
<i>COMPET</i> _{t-1}	?	(-2.13) 1.161***	(-2.60) 0.480***	(-1.05) 0.450***	(-2.85) 0.068*			
n		(6.28) 309	(3.86) 309	(2.97) 309	(1.51) 309			
Adjusted R ²		42.3%	23.4%	32.3%	24.3%			

*, **, *** Significant at the 0.1, 0.05, and 0.01 levels, respectively (one-tailed test if a signed prediction is provided, two-tailed otherwise).

For parsimony, coefficients on region and year indicators are not reported. Reported t-statistics are based on the Rogers (1993) standard errors.

Variable Definitions:

ATTAIN = ATTAIN_REG or ATTAIN_STRA; ATTAIN1_REG = store and year-specific predicted value obtained by estimating Equation (3) in the Appendix minus TAR_SALES_REG; ATTAIN1_STRA = store and year-specific predicted value obtained by estimating Equation (4) in the Appendix minus TAR_SALES_STRA; ATTAIN2_REG = ACT_SALES_REG - TAR_SALES_STRA; ATTAIN2_STRA = ACT_SALES_STRA - TAR_SALES_STRA; NOISE_MV_REG = time-series standard deviation of the logarithm of regular mail volume received by the store over the most recent four years;

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TABLE 5 (continued)

NOISE_MV_STRA = time-series standard deviation of the logarithm of strategic mail volume received by the	
store over the most recent four years;	
UNFAIR_REG = difference between the store's rank on relative profitability and rank on the sales target measure for regular mail, with higher values indicating stores that exhibited a high achievement of regular mail sales compared to their target, but low relative profitability;	
UNFAIR_STRA = difference between a store's rank on relative profitability and rank on the sales target measure for strategic mail, with higher values indicating stores that exhibited a high achievement of strategic mail sales compared to their target, but low relative profitability;	
STATUS = indicator variable that takes the value of 1 if the difference in job grade level between the regional director and the store manager is 2 or less, and 0 otherwise;	
$N_SUB =$ number of small windows-only stores the EU manager is responsible for;	
N_MERGE = number of BU stores added to an EU store for performance evaluation purposes since 2001;	
N_EMP = number of employees (in hundreds); and	
COMPET = indicator variable that takes the value of 1 for stores in urban areas and 0 for stores in rural areas.	

Robustness Tests

Alternative Measures of Environmental Uncertainty

To test the robustness of our findings related to compensation risk due to environmental uncertainty, we capture environmental uncertainty in alternative ways. Specifically, in line with Nagar (2002), we use the average percentage growth rate in regular and strategic mail volume received by a store over the past three years and the prior year's percentage growth rate. All inferences remain unchanged when using these alternative measures.

Alternative Measures of Unfairness

We explore the robustness of our findings related to fairness concerns by re-estimating Equations (1) and (2) using alternative measures of unfairness. First, we use an indicator variable that takes the value of 1 if the rank difference between the RPE profitability measure and the sales target measure is in the top 10 percent (50 percent), and 0 otherwise. Second, we take the difference between the store's yearly rank on its RPE profitability measure and the store's yearly rank on its profitability growth measure (instead of the sales target measure) in year t-1. Finally, we use the raw value of the RPE profitability measure in year t-1. All inferences remain unchanged under the first and second alternative measures. When we use the third alternative measure, the coefficient is significantly negative at the 5 percent level for regular mail, but is insignificant for strategic mail (p = 0.21, one-tailed).

Alternative Measures of Status

We also examine the robustness of our findings related to conflict avoidance using an alternative measure of status. Specifically, we use a measure that captures a store manager's status relative to other store managers in the same region, rather than relative to the regional director. This measure is constructed by creating an indicator variable that equals 1 for store managers whose job grade level corresponds to grade 4, and 0 for store managers whose job grade level corresponds to grade 5. All inferences remain unchanged when we re-estimate Equations (1) and (2) using this alternative measure of status.

Potential Scale Effects

To ensure that the results are robust to potential scale effects, we deflate the dependent variables ADJUST, ATTAIN1, and ATTAIN2 by target sales and re-estimate all regression equa-

tions. The re-estimated results (not tabulated) are similar to those reported in Tables 4 and 5.

Additional Controls

We also perform additional tests to control for two alternative explanations for our results. First, more experienced regional directors may have greater ability to unravel the slack-building behavior of store managers with private information. To test for this possibility, we create the indicator variable *EXPER*, which takes the value of 1 for directors who are internally promoted and 0 for directors hired from outside of POST, and interact this variable with *N_SUB*, one of our information asymmetry variables. The results (not tabulated) show that the interaction term between *EXPER* and *N_SUB* is insignificant for regular mail (p = 0.39, one-tailed) and only marginally significantly negative for strategic mail (p = 0.08, one-tailed). All other inferences remain unchanged.

Second, we examine whether unknown individual store manager traits that are correlated with store characteristics drive our results. We analyze this by calculating the average store observation for all variables and using these newly created variables to estimate Equations (1) and (2). Because the mean store manager tenure is less than one year,²⁵ averaging yearly observations for a given store eliminates any potential effect of store manager traits on target adjustments. The results are robust to averaging yearly observations for a given store.

VII. CONCLUDING REMARKS

Using 2001 to 2003 annual performance evaluation data on 103 postal stores in Korea, we analyze how regional directors use their discretion to allocate regional sales targets set by corporate headquarters to individual stores in the region. Our findings are consistent with predictions based on agency and behavioral theories that regional directors strategically use discretion in the target-setting process to manage compensation risk and address fairness concerns. The results are also consistent with our prediction based on research in psychology that regional directors provide easier targets to store managers with relatively higher hierarchical status to reduce confrontation costs.

Our study has several important implications. First, our results suggest that supervisor discretion is used strategically to improve incentive contracting. In our setting, some stores' initial sales targets based on the regional targets set by corporate headquarters may impose excessive risk because of higher store-specific levels of environmental uncertainty. We find evidence that supervisors manage this risk by using their discretion in the target-setting process to assign more attainable targets to stores facing higher levels of store-specific risk. These adjustments effectively provide a risk premium for bearing more risk.

Our study also suggests that supervisors strategically use discretion in the target-setting process to deal with fairness concerns. Importantly, this study is the first to provide field data evidence consistent with supervisors exercising discretion in the target-setting process to counter other elements of the incentive contract that may be considered unfair. This strategic use of discretion to harmonize the elements of the compensation contract underscores the importance of studying the compensation system as a whole. While the majority of studies that examine compensation contracts focus on one or two elements in isolation, our results suggest that supervisors view different elements of the compensation contract but has discretion over others, spillover effects are likely to occur (Bol and Smith 2009).

²⁵ See footnote 13.

Our findings also emphasize the importance of considering supervisors' personal preferences and incentives when analyzing the target-setting process. We provide evidence consistent with supervisors using their discretion in target setting not only to improve compensation contracting, but also to decrease the personal costs involved in managing the performance evaluation process. Our results suggest that supervisors reduce confrontation costs by strategically determining who to disappoint with relatively harder-to-attain targets and who to satisfy with more attainable targets. In particular, supervisors appear to disappoint those subordinates who are less likely to confront them and as a result avoid painful conflicts as much as possible. Viewed from a decision-theory perspective, the supervisors seem to try to maximize their expected utility over both pecuniary and nonpecuniary elements.

More generally, our study illustrates that discretion is relevant at more than just the performance evaluation stage. Most studies that examine the role of supervisor bias focus on supervisor discretion in the evaluation phase of the compensation process. In contrast, our study shows that biasing behavior may also take place when agreeing on the specifics of the incentive system. Future research could examine what drives principals to provide supervisors with discretion in target setting in certain situations, while allowing discretion in evaluation in other settings. Similarly, in a setting where supervisors are allowed multiple forms of discretion, future research could analyze when supervisors prefer to use their discretion in the target-setting process compared to their discretion in *ex post* evaluation.

This study is subject to several limitations, the most important of which is the fact that the observations come from a single firm, limiting the extent to which we can generalize the results. Another important caveat is the lack of access to the store managers' sales target proposals, because these proposals likely impact regional directors' use of discretion in setting targets. While we attempt to capture the effect of store managers' proposals by controlling for information asymmetry, as store managers' informational advantage is expected to be reflected in their target proposals, we are unable to capture this dimension directly because of data limitations. Future research could collect more complete information on the participative element of the target-setting process and investigate how store managers' proposals affect supervisors' use of discretion in the target-setting process.

APPENDIX

To develop a reliable prediction model for future sales, we use a comprehensive set of independent variables that are likely to explain much of the variation in store-level sales. Our main explanatory variable is prior-year sales because it is likely the key input in estimating this year's sales. In addition, we include the variables that POST used in their cluster analysis to create the RPE reference groups (Matsumura and Shin 2006).²⁶ POST believes that these variables are predictive of store profitability; because profitability and sales are highly correlated, it is reasonable to assume that these variables are also predictive of sales. We use all explanatory variables measured in year t-1 under the assumption that the regional directors will make their own forecasts based on the information available at the beginning of year t. Because there are two sales targets, regular and strategic, we estimate the following cross-sectional regressions using the dependent variables ACT_SALES_REG and ACT_SALES_STRA :

$$ACT_SALES_REG_{i,t} = \alpha_0 + \alpha_1 ACT_SALES_REG_{i,t-1} + \alpha_2 SERVICE_AREA_{i,t-1} + \alpha_3 POP_{i,t-1} + \alpha_4 N_BANK_{i,t-1} + \alpha_5 METRO_{i,t-1} + \alpha_6 NEW_MGR_{i,t-1} + \alpha_7 DIST_{i,t-1} + \alpha_8 SKILL_{i,t-1} + YEAR_INDICATORS + \varepsilon_{i,t}$$
(3)

²⁶ Among the variables POST used in their cluster analysis, we do not use the number of employees (N_EMP) in our prediction model because that variable is used as a predictor when estimating columns (1) and (2) of Table 5.

$$ACT_SALES_STRA_{i,t} = \alpha_0 + \alpha_1 ACT_SALES_STRA_{i,t-1} + \alpha_2 SERVICE_AREA_{i,t-1} + \alpha_3 POP_{i,t-1} + \alpha_4 N_BANK_{i,t-1} + \alpha_5 METRO_{i,t-1} + \alpha_6 NEW_MGR_{i,t-1} + \alpha_7 DIST_{i,t-1} + \alpha_8 SKILL_{i,t-1} + YEAR_INDICATORS + \varepsilon_{i,t}$$

$$(4)$$

where:

ACT_SALES_REG = store-level actual sales from regular mail (in billion Korean Won);
ACT_SALES_STRA = store-level actual sales from strategic mail (in billion Korean Won);
SERVICE_AREA = area that the store is responsible for (in hundreds of square kilometers);
POP = natural log of the population in the service area;
N_BANK = number of financial institutions in the service area (in hundreds);
METRO = 1, 2, 3, and 4 for rural area, small-sized city, middle-sized city, and metropolitan area, respectively;
NEW_MGR = indicator variable that is equal to 1 if the new manager is appointed in the given year, and 0 otherwise;
DIST = average daily delivery distance per mail carrier (in hundred kilometers);
SKILL = natural log of average labor cost per employee.

We use the store-year-level predicted values of sales to proxy for regional directors' sales estimates. The adjusted R^2s from estimating Equations (3) and (4) are 94 percent and 70 percent, respectively, suggesting that a substantial part of the variation in sales can be explained by the set of store-specific information available to the regional directors at the beginning of year *t*.

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