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RESEARCH NOTE

Worse than others but better than before: Integrating social and temporal comparison perspectives to explain executive turnover via pay standing and pay growth

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Organizations often pay greater salaries to higher-ranking executives compared to lower-ranking executives. While this method can be useful for retaining those at the organization's apex, it may also incline executives at the bottom of the pay pyramid to see themselves at a disadvantage and thus exit the firm. Naturally, organizations often want to retain some of their lower-paid, but highly valuable executives; the question, then, is how organizations can reduce the turnover of lower-ranking executives. By integrating social with temporal comparison theory, we argue that, when executives earn relatively less than their peers, more pay growth (i.e., individual pay increases over time) leads to less turnover. The results of our analysis, which covered almost 20 years of objective data on a large sample of U.S. top executives, provide support for our theory.

1 | INTRODUCTION

The members of an organization's top management team (TMT) are usually among its most skilled, experienced, and highly remunerated employees. They may also possess unique and specialized knowledge about the organization and thus are difficult to replace. Consequently, companies often pay steep salaries that increase with rank to retain top executives (Main, O'Reilly, & Wade, 1993). These tournament-based compensation systems necessarily produce significant differences in TMT members' internal pay standing, which we define as how a TMT member's pay compares to the pay of his or her fellow TMT members.

Although tournament-based pay schemes can be effective at retaining relatively higher paid TMT members, they sometimes lead those at bottom of the TMT's pay pyramid to be dissatisfied with their pay, resulting in voluntary turnover (Messersmith, Guthrie, Ji, & Lee, 2011). Pay differences among TMT members thus create a dilemma for the organization because the effort to retain executives at the top of the TMT's pay hierarchy may incline those at the bottom to leave (Trevor & Wazeter, 2006).

The effect of low pay standing on turnover can be desirable when the lower-paid TMT members are also those who perform poorly (i.e., a sorting effect) (Carnahan, Agarwal, & Campbell, 2012; Shaw, 2014; Shaw, Gupta, & Delery, 2002). But studies suggest that top executives are rarely compensated based on their performance (Bebchuk, 2009; Tosi, Werner, Katz, & Gomez-Mejia, 2000) and so it is possible that some of them may be performing better than their salaries imply, and others may be in the process of developing their capabilities, which could prove valuable to the organization in the future (Zajac, 1990). Therefore, to fully capitalize on the potential of all TMT members, organizations need to find ways of retaining talented executives at every level of the TMT's pay hierarchy (cf. Collings & Mellahi, 2009).

In the present paper, we integrate social comparison theory (Festinger, 1954) and temporal comparison theory (Albert, 1977) to advance the argument that *pay growth*, defined as a salary that shows a positive trajectory over time, is one of the conditions that could reduce voluntary turnover among the lowest-paid TMT members. Specifically, we hypothesize that pay growth significantly reduces turnover for TMT members at the bottom of the pay distribution. We tested our predictions in a sample of top executives from various industries by looking at actual pay and turnover data between the years 1992 and 2012.

We provide one possible solution to the dilemma of how organizations that adopt a tournament-based pay scheme can still successfully retain executives at the bottom of the TMT's pay hierarchy by highlighting the role of pay growth as an alternative retention mechanism. Our study also answers calls for more research on the dynamic

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nature of executive pay (Nyberg, 2010). Although pay practices have become dramatically more dynamic (Heneman, Greenberger, & Fox, 2002), few studies have closely investigated the consequences of such changes (Nyberg, 2010; Salamin & Hom, 2005; Trevor, Gerhart, & Boudreau, 1997).

1.1 | Internal pay standing and turnover

There is continuing debate in the literature on the consequences of pay differences concerning whether dispersed pay structures are efficient and rational elements of organizational design. Some writers argue that dispersed pay structures are inherently threatening to the growth of organizations (e.g., Nickerson & Zenger, 2008), while others maintain that there are conditions under which dispersed pay structures might help advance organizational goals (Larkin, Pierce, & Gino, 2012). Tournament theory (Lazear, 1998; Lazear & Rosen, 1981) supports the second perspective. According to tournament theory, organizations should allocate greater pay to those in top-ranked positions and smaller pay to those in lower-ranked positions (Lazear, 1998; Lazear & Rosen, 1981). This practice can result in employees at the top (bottom) of the hierarchy being paid above (below) their marginal productivity. Consequently, the theory predicts that employees at the bottom of the pay hierarchy should be motivated to work harder to outperform other employees in the tournament, reap the prize of advancing in the hierarchy, and eventually be able to compete for even higher prizes (Gomez-Mejia, 1994; Lazear, 1998; Lazear & Rosen, 1981). Some studies support these reputed benefits: For example, when participants in an experiment worked under a variable and tournament-type pay scheme, they exerted more effort in a cognitive task (calculating a multiplication problem) than participants in a fixed-pay condition (Dohmen & Falk, 2011). Meanwhile, at the TMT level, pay dispersion has been found to be positively associated with return on asset (ROA) among publicly held U.S. corporations (Main et al., 1993).

However, the empirical data also point to certain costs associated with pay dispersion, one of which is turnover. The relationship between pay differences and executive turnover is most frequently discussed from a social comparison theory perspective (e.g., Baron & Pfeffer, 1994; Eriksson, 1999; Fredrickson, Davis-Blake, & Sanders, 2010; Main et al., 1993; Messersmith et al., 2011; Shaw, 2014; Shaw et al., 2007). This perspective suggests that people care deeply about how their pay compares to that of relevant others because pay signals the degree of status that the organization bestows on its members (Folger & Cropanzano, 1998; Frank, 1984). Those who earn more compared to coworkers should infer more status and feel more valued within the organization (Frank, 1984), which allows them to maintain a positive self-view (Pierce & Gardner, 2004; Pierce, Gardner, Cummings, & Dunham, 1989; Smith, Tyler, Huo, Ortiz, & Lind, 1998); the reverse would hold for those who earn less. As a consequence, these pay systems elicit frequent social comparisons, especially at the TMT level where the high interdependence between tasks and outcomes (e.g., Hambrick & Mason, 1984) gives people greater ability and motivation to engage in such comparisons (Main et al., 1993). Both comparison principles and equity models (Adams, 1965) of motivation suggest that those who rank low in the TMT's pay hierarchy (i.e., low internal pay standing) tend to be dissatisfied with their pay after making social comparisons with their more highly paid colleagues and are more likely to voluntarily leave the organization.

A limitation of past studies of relative pay differences and executive turnover is that they did not consider that pay in tournaments is dynamic and that people also look at how their pay has changed over time to make comparisons of their present conditions to their past conditions (Albert, 1977; Wilson & Ross, 2000). We argue that a more complete perspective on the TMT turnover process is needed to better understand the factors that reduce employees' turnover at the bottom of the TMT's pay hierarchy.

1.2 | Integration of temporal and social comparison theory to explain TMT turnover

Social comparison theory highlights people's need to evaluate how well they fare relative to others on a self-relevant dimension (e.g., pay). The theory suggests that to make such evaluations people form a "standard of comparison" whereby they compare themselves to other people's outcomes on the same self-relevant dimension. However, temporal comparison theory argues that social comparison research is incomplete because it fails to take into account how people use self-related historical information as an evaluation standard (Albert, 1977; Wilson & Ross, 2000). In fact, people compare their present to their past self as often as they compare themselves to other people (Wilson & Ross, 2000).

Both theory and evidence suggest that people use temporal comparison information more frequently when they are motivated by self-enhancement needs. In one experimental study, participants who were primed with the goal of making positive self-evaluations made relatively more temporal comparisons than social comparisons (Wilson & Ross, 2000, Study 5). The need to maintain positive self-views drives people to selectively search for information that can support this view (Pyszczynski, Greenberg, & LaPrelle, 1985). Through experience, people learn that temporal comparison information often permits them to make these types of positive self-evaluations because, by and large, people's outcomes (such as pay) usually increase over time (Rambo & Pinto, 1989). Monitoring such information can therefore be an effective cognitive strategy for shielding the self from threatening social comparisons. For example, someone learning to play tennis is often confronted with the threat of playing against better players. However, the accuracy with which learners hit the ball today is likely better than it was two weeks prior, allowing them to counteract the threat to the self that stems from losing to better players.

Pay is a personal outcome that matches the features of the above-mentioned social and temporal comparison dynamics. First, pay signals status, which people care about and therefore can either threaten or uphold people's positive self-views. Second, most people's pay increases over time (Rambo & Pinto, 1989). Third, pay is often dispersed in teams, with the result that some are paid more (or less) than others. In the logic of our argument, individual pay growths should become salient in the presence of unfavorable social

pay comparisons. As the temporal comparison information for pay growth becomes more positive (i.e., the more pay has increased over time), we expect to see less turnover for lower-paid TMT members, as the temporal comparison information allows them to maintain a positive self-view. Although relatively lower pay suggests that the organization values the respective TMT members less than others with relatively higher pay, the positive change in individual pay still implies an increase in value to the organization and holds the implicit allure of winning the tournament in the future. However, when internal pay standing is high, then temporal comparison information should become less salient because high internal pay standing signals that the employee has high status in the organization. In this case, we expect that pay growth has no effect on turnover because high-ranking employees may infer that they already won the pay tournament. Thus, we predict the following:

> **Hypothesis:** *The lower a TMT member's internal pay standing, the more negative is the relationship between the member's pay growth and his/her turnover.*

2 | METHOD

2.1 | Data and sample

We compiled information on a sample of TMT members' pay and turnover, as well as relevant control variables, using data from Execucomp. Execucomp is a large database containing several years' worth of data on firms' executives. Firms in the United States are legally required to provide pay data on their five highest paid executives, which Execucomp tracks and reports. As the highest paid employees, these executives form, almost by definition, the TMT (Carpenter, Geletkanycz, & Sanders, 2004). We combined these data with information on firm performance and firm size obtained from Compustat.

Our complete data set encompassed 9,152 executives, including the position of chief executive officer (CEO), from 2,480 different publicly traded firms between the years 1992 and 2012. We further restricted the data to executives who joined their TMT after 1992 to avoid problems with left censoring (i.e., executives who entered their TMT at an unknown earlier date). We included only executives below the age of 70 years to decrease the likelihood that executives left a company because they retired or died (Matta & Beamish, 2008). Moreover, we excluded CEOs because it seems highly plausible that the effects we hypothesized might be different for CEOs and non-CEOs (e.g., differences in compensation schemes, status due to position alone). Due to these restrictions and missing data, we were left with 2,585 executives who were nested within 1,153 companies. On average, TMTs were composed of 5.68 executives (SD = 1.08). The average age of TMT members was 51.75 years (SD = 6.94) and the average tenure with the company was 9.41 years (SD = 8.03). Most executives in our sample were male (91%). Executives stayed on the TMT for an average of 5.70 years (SD = 3.77). At the end of our sample period (2012), 86% of all executives had left their initial TMT.

2.2 | Measures

2.2.1 | Turnover

For any given year that an executive spent on the TMT, *turnover* was coded 1 when an executive left the company during that year and 0 if the executive stayed with the TMT. We also coded *turnover* as zero if the executive had retired or is deceased. Note that this information was not available for all turnover events.

2.2.2 | Pay[1]

We measured three pay variables: *total pay*, *internal pay standing,* and *pay growth. Total pay* and *internal pay standing* (i.e., social comparison information in pay) were included to address our argument that an executive's relative pay should predict turnover above and beyond an executive's total income. *Total pay* was calculated as the sum of an executive's salary, bonuses, the total value of restricted stock granted, the new value of stock options exercised, long-term incentive payouts, and all other listed income in the Execucomp database for a given year. We operationalized *internal pay standing* as the ratio of a TMT member's pay to the mean salary of all TMT members (Pfeffer & Davis-Blake, 1992; Trevor & Wazeter, 2006). Higher values indicate more favorable pay relative to other TMT members. This variable was log-transformed to achieve normality because it was highly skewed. We measured *pay growth* as the percentage de/increase in total pay from the last year to the current year through the EXECUCOMP variable *tdc2_pct*.

2.2.3 | Control variables

We included a number of control variables at the executive level that were not of direct interest but could have theoretically affected the results. First, we included *fixed pay*, which is the percentage of an executive's total pay attributable to base salary, because executives might prefer jobs that guarantee them a higher fixed income (e.g., Messersmith et al., 2011). Second, we included an executive's pay relative to other executives in the same industry (i.e., *relative industry pay*) as a previous study among public school teachers showed that employees might compare external standards when forming judgments about their pay fairness (Trevor & Wazeter, 2006). We measured *relative industry pay* by using a regression-based approach that estimated the total pay for each executive based on a range of input variables (firm size, firm performance as measured by ROA, total return to shareholders, executive job position, age, and tenure) and data from executives operating in that industry in a given year (based on the entries in the Execucomp database and determined at the three-digit SIC level) (e.g., Wade, O'Reilly, & Pollock, 2006). We then used the residuals from these predictions. The residuals were correspondingly positive (negative) if executives received higher (lower) pay than their estimated total pay. Third, we controlled for *average pay growth* in the TMT to account for the possibility that executives would form social comparisons about their pay growth. Fourth, we included *tenure* with the company to control whether turnover was affected by the time executives had been with the company, assuming that more tenured employees might be more committed to staying with an organization. Fifth, we included *age* because older executives may be more likely to retire. Furthermore, because

comparisons may be affected by the executive's *position*, we scanned the annual job title description in the variable *titleann* of the Execucomp database and coded for every year that an executive was a chief financial officer (CFO), another corporate officer, a chairman, or a president. We should note that board executives can hold multiple job types/titles, but they do not need to coincide. As a result, we set a dummy for this category to 1 if an executive held the respective position in that year and 0 otherwise. In addition, we used the variable "*execdir*" to control for executive board membership. We also controlled whether an executive was *female* because women were a minority on most TMTs and therefore might have been less committed to staying on the board (Tsui, Egan, & O'Reilly, 1992). The variable *female* was coded as 1 for women and 0 for men. Finally, we controlled for stock ownership measures as the total shares owned by an executive (EXECUCOMP variable *shrown_tot*).

Next, we included a number of control variables at the firm level. We included *pay dispersion* because relative pay differences are stronger in more pay dispersed TMTs. We measured this variable by computing the value of the Gini coefficient for each TMT to capture pay inequality in each team (Donaldson & Weymark, 1980). For each year, we calculated the Gini coefficient using each executive's total compensation levels. Gini coefficient scores ranged from 0 to 1, where 1 indicates higher levels of dispersion and less compensation equality among TMT members. We also included the size and total pay of the TMT, as both might influence competition in the TMT, and more competition can lead to greater turnover (e.g., executives in larger teams may sense greater competition and be more likely to exit the organization than those in smaller teams). We calculated *total TMT pay* by summing the salary, bonuses, and the total value of all other variable pay for a given year (see Carpenter & Sanders, 2002). Moreover, we controlled for *firm performance* by including the yearly ROA measure, as reported in the Compustat database, since firm performance might be a reason for TMT members' turnover (Fee & Hadlock, 2003). ROA is a widely used measure of firm performance in the literature on executive compensation and corporate governance (Carpenter & Sanders, 2002; Finkelstein & Boyd, 1998; Messersmith et al., 2011) because it indicates a firm's efficiency in utilizing its current asset base. We also controlled for *total return to shareholders* (for one, three, and five years) to have a stock-based measure of firm performance. Meanwhile, we operationalized *firm size* as the log of the number of employees (as reported in the Compustat database). Finally, we controlled for the event of *CEO turnover* by including a dummy that was coded 1 if a CEO left a company within a given year and 0 otherwise.

3 | RESULTS

We used survival analysis to examine how internal pay standing, as well as pay growths, impacted the likelihood of turnover. Survival analysis examines both when and if turnover occurs; thus, the dependent variable in our analysis was the hazard rate of executive turnover. One advantage of survival analysis is its use of information on survival time (i.e., time spent on the TMT), rather than relying solely on a simple, dichotomous turnover variable. Furthermore, unlike other techniques, survival analysis accommodates the probability that an event at one point in time could differ from the probability of that same event at a different point in time. Thus, probabilities are not necessarily constant but can be described as a function of time. In this way, it is possible to account for right-censored data, that is, cases in which we observed no turnover, for example, because executives did not leave the TMT during the observed time period, or left the TMT due to retirement or death. Such information can be lost when treating turnover simply as a dichotomous outcome, as in logistic regression analysis, which may result in biased estimations (Morita, Lee, & Mowday, 1993).

We followed Singer and Willett (1991) (see also Cleves, Gould, Gutierrez, & Marchenko, 2008), who offer guidelines for survival analyses using Cox's proportional hazard model in Stata (StataCorp, 2011). First, we extended the proportional hazards using the *tvc* option in Stata to include *total pay*, *tenure*, *total TMT pay*, *internal pay standing*, the dummy for an executive's position as *CFO*, and the dummy for an executive's membership on the *executive board* as time-dependent covariates, as these violated the proportionality hazard assumption (i.e., that the effect of a given covariate does not change over time) (Hosmer, Lemeshow, & May, 2008). Second, using (cumulative) Cox-Snell residuals (Cleves et al., 2008), we identified 13 outliers; however, excluding these cases did not change the significance level of the interaction effect nor the simple slopes and, hence, resulted in the same decision to reject the null hypothesis. So we retained the outliers in the analyses (see Table 2). Third, we performed a graphical examination that revealed a difference in the cumulative hazard functions between TMT entry-year cohorts. Therefore, we stratified our model by TMT entry year to allow the baseline hazard to be different for each TMT entry-year cohort. Fourth, we examined the turnover of TMT executives within their TMT, which entails that our data were nested within TMTs. Fifth, we accounted for industry-specific turnover patterns by adjusting the standard errors of the estimated parameters, thereby accounting for correlations within companies, as well as including fixed effects to control for industry differences (determined at the two-digit SIC level). Finally, we used the Efron method in cases of event ties, such as when two executives left the company during the same year, which would usually violate the assumptions of continuous-time analysis such as in Cox regression. The Efron method is an effective way of dealing with this issue in the case of large data sets and/or a large number of ties (Borucka, 2014; Chalita, Colosimo, & Demétrio, 2002; Efron, 1977; Hertz-Picciotto, & Rockhill, 1997).

Table 1 shows the means, standard deviations, and zero-order correlations of our study variables. Figure 1 shows the Kaplan–Meier survival function of TMT member turnover, which illustrates the estimated probability of turnover relative to an executive's number of years on the TMT. It shows that only about 20% of executives were still working in the company after five years. Table 2 displays the results for the Cox regression model. A negative (positive) coefficient means that, for each standard deviation increase in the respective variable, the turnover hazard will decrease (increase) by the size of the coefficient in percentages. Model 1 includes all the control variables. In Model 2, we included the main effects of pay growth and internal pay standing. Model 3 represented the full model, which

TABLE 1 Descriptive statistics

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Firm size	0.41	0.87														
2. ROA	0.02	0.02	.09													
3. TRS1yr	65.26	3,482.91	.01	.01												
4. TRS3yr	−0.40	27.54	.03	.27	.08											
5. TRS5yr	3.14	23.31	−.04	.26	.03	.52										
6. TMT size	5.68	1.10	.04	−.02	−.03	−.10	−.01									
7. TMT pay (× $1,000)	14,477.36	383.73	.18	.09	−.00	.19	.20	.04								
8. Pay dispersion	0.30	0.13	.09	.11	.00	.16	.21	.15	.37							
9. Average pay growth	1.10	3.76	.10	.01	−.00	.01	.01	.03	.18	.10						
10. CEO turnover	0.14	0.35	.02	−.05	−.01	−.10	−.10	.27	.04	.10	−.01					
11. Position = CFO	0.15	0.35	−.05	−.02	−.01	−.05	.05	.04	.01	.03	−.01	.00				
12. Position = COO	0.58	0.23	−.04	−.00	−.01	−.01	.05	−.01	.02	.03	−01	−.03	−.10			
13. Position = C-suite	0.51	0.50	.24	.01	.01	−.02	−.03	−.08	−.00	−.04	−.00	−.03	.40	.23		
14. Position = chairman	0.06	0.24	.10	.02	−.00	.02	.01	.03	.08	.05	−.01	.13	−.10	−.04	−.10	
15. Position = president	0.26	0.44	−.08	−.03	−.01	−.04	.07	.11	.02	.05	−.02	−.01	.40	.01	.01	−.14
16. Position = exec. Board	0.19	0.40	.08	.02	−.01	.04	.06	.00	.12	.10	.03	.04	−.05	.21	.02	.41
17. Female (1 = female)	0.09	0.28	.01	.01	−.00	−.02	−.02	−.00	−.01	.01	−.01	−.03	.00	−.04	.00	−.10
18. Age	51.75	6.94	.10	.01	−.00	.04	.01	.10	.04	.02	−.10	.10	−.10	−.10	−.12	.24
19. Tenure	9.41	8.03	.10	.10	−.01	.10	.01	−.10	.04	−.00	−.03	−.00	−.14	.03	−.12	.24
20. Total pay (× $1,000)	2,123.31	3,932.77	.15	.10	.00	.16	.16	−.01	.61	.21	.10	.04	−.03	.10	−.00	.20
21. Relative industry pay	−592.10	16,466.26	−.03	−.00	.00	−.01	−.01	−.00	−.02	−.02	.00	.01	.01	−.00	−.01	.01
22. Fixed pay (%)	0.40	0.25	−.17	−.18	−.01	−.29	−.28	.00	−.38	−.22	−.05	.02	.03	−.05	−.02	−.10
23. Internal pay standing	−0.30	0.73	−.02	−.04	−.00	−.04	−.01	.10	−.19	−.37	−.32	.02	−.03	.10	.05	.11
24. Pay growth (× $1,000)	0.97	28.79	.02	.01	.00	.01	.02	.02	.05	.03	.41	−.01	−.00	−.00	−.01	−.01
25. Turnover [a]	5.70	3.77	.12	.04	−.00	.05	−.03	−.04	.07	.02	−.02	.00	−.13	−.00	−.10	.22

Variable	15	16	17	18	19	20	21	22	23	24
1. Firm size										
2. ROA										
3. TRS1yr										
4. TRS2yr										
5. TRS5yr										
6. TMT size										
7. TMT pay (× $1,000)										
8. Pay dispersion										
9. Average pay growth										
10. CEO turnover										

(*Continues*)

TABLE 1 (Continued)

Variable	15	16	17	18	19	20	21	22	23	24
11. Position = CFO										
12. Position = COO										
13. Position = C-suite										
14. Position = chairman										
15. Position = president										
16. Position = exec. Board	−.10									
17. Female (1 = female)	−.00	−.10								
18. Age	−.40	.10	−.10							
19. Tenure	−.10	.30	−.04	.24						
20. Total pay (× $1,000)	−.03	.22	−.03	.10	.11					
21. Relative industry pay	.02	.01	.01	−.01	−.01	.10				
22. Fixed pay (%)	.02	−.10	−.03	−.06	−.10	−.44	−.00			
23. Internal pay standing	−.04	.13	−.03	.10	.10	.24	.05	−.23		
24. Pay growth (× $1,000)	−.01	.03	−.00	−.04	−.00	.02	−.00	−.04	−.20	
25. Turnover[a]	−.11	.21	−.10	.32	.60	.16	−.00	−.14	.15	−.01

Note: Correlations greater or equal |0.01| are significant on the 0.05 level. TMT = top management team; ROA = return on asset. TRS1yr = total return to shareholders for one year. TRS3yr = total return to shareholders for three years. [a]Because we use survival analysis the dependent variable (turnover) is the duration between the moment an executive joins a TMT and the moment the executive leaves the TMT.

FIGURE 1 Survival curve for turnover showing the declining chance of staying on the TMT as time passes

presented a significant interaction effect, b = 1.00, p = .001. Adding this interaction term significantly increased the model fit, $\chi^2(1)$ = 11.82, p < .001, and explained 8%[2] more of the variance in turnover. An examination of this interaction supports our hypothesis (cf. Figure 2): Higher pay growth was accompanied by a lower probability of turnover when an executive's internal pay standing was low (−1 SD), b = −1.12, p <. 01, but pay growth had a positive effect on probability of turnover when the pay level was high (+1 SD), b = .88, p <. 05. This difference was significant, b = −2.00, p = .001. These results fully support our hypothesis that pay growth has a stronger and negative effect when internal pay standing is low. We plotted this interaction in Figure 2.

4 | DISCUSSION

Companies typically seek to retain executives to not only avoid the costs of replacing them but also to facilitate effective succession planning. However, studies on pay and turnover highlight that executives who earn comparatively less than their peers are at a higher risk of leaving the company. Building on this finding, the current study aimed to test how the risk of turnover among executives with relatively low pay can be mitigated by individual pay growth.

We tested our theory using a large sample of top executives from various industries, by investigating objective data across almost 20 years. We found that pay growth reduced the risk of turnover even when executives occupied lower ranks in their TMT's pay hierarchy. The results thus support our hypothesis that pay growth reduces the turnover risk for executives who rank low in the TMT's pay hierarchy.

Our finding is important in light of the social comparison assumption that dispersed pay schemes entail a certain trade-off. Namely, that such schemes risk losing executives at lower pay ranks as much as they help to retain executives at higher ranks. However, this trade-off might not be more nuanced as a strict application of social comparison theory suggests (e.g., Trevor & Wazeter, 2006). Instead, our findings support our theory that people readily switch between temporal (pay growth) and social pay comparisons (pay standing),

TABLE 2 Results of the proportional hazards model using Cox regression to predict turnover

	Step 1		Step 2		Step 3	
Independent variable	**β**	**SE**	**β**	**SE**	**β**	**SE**
Firm level variables						
Firm size (log)	−.10***	(.03)	−.10***	(.03)	−.11***	(.03)
ROA	−.02	(.02)	−.02	(.02)	−.02	(.02)
TRS1yr	−.01	(.03)	−.01	(.04)	−.01	(.04)
TRS3yr	−.05*	(.02)	−.05*	(.02)	−.05**	(.02)
TRS5yr	−.11***	(.03)	−.11***	(.03)	−.11***	(.03)
TMT size	.24***	(.02)	.25***	(.02)	.25***	(.02)
TMT pay	−.03	(.03)	−.37**	(.13)	−.36**	(.13)
Pay dispersion	.02	(.02)	.01	(.02)	−.01	(.02)
Average pay growth	.00	(.01)	−.01	(.02)	−.01	(.02)
CEO turnover	.14**	(.06)	.13*	(.06)	.13*	(.06)
Executive level variables						
Position = CFO	−.45**	(.16)	−.45**	(.16)	−.50**	(.16)
Position = COO	−.15	(.14)	−.15	(.14)	−.17	(.14)
Position = C-suite	−.14***	(.04)	−.15***	(.04)	−.15***	(.04)
Position = chairman	.14†	(.08)	.15†	(.08)	.15*	(.10)
Position = president	−.14	(.09)	−.13	(.09)	−.13	(.10)
Position = exec. Board	−.69***	(.16)	−.80***	(.17)	−.73***	(.17)
Female	−.02	(.06)	−.01	(.06)	−.00	(.06)
Age	.05**	(.02)	.05**	(.02)	.05*	(.02)
Tenure	−.04†	(.02)	−.04*	(.02)	−.16*	(.07)
Total pay	.03	(.02)	.47***	(.13)	.45***	(14)
Relative industry pay	−.00	(.01)	.00	(.02)	.00	(.01)
Fixed pay	−.06*	(.03)	−.07**	(.03)	−.10**	(03)
Internal pay standing			−.15***	(.05)	−.14**	(.05)
Pay growth			−.05	(.03)	−.12	(.24)
Internal pay standing X Pay growth					1.00***	(.30)
$\Delta\chi^2$			11.54**		11.82***	
Somers' D	.24		.24		.32	

Note: Significance levels are two-tailed: † < 0.10; *p < .05; **p < .01; ***p < .001. ROA = return on asset. TRS1yr = total return to shareholders for one year. TRS3yr = total return to shareholders for three years. Somer's D is similar to explained variance in regression analysis (Newson, 2010; Sheridan, 1992).

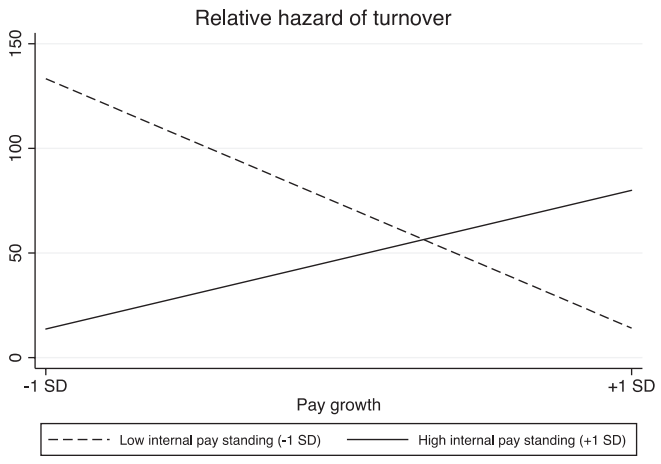


FIGURE 2 The relationship between pay growth and turnover for executives with high levels of internal pay standing and low levels of internal pay standing

depending on which is more favorable to the self, which likely explains why many executives remain with their organizations, even when they are the bottom of the pay hierarchy. In short, our findings suggest that low internal pay standing only leads to more turnover when pay growth is low.

An unexpected finding was that that high internal pay standing leads to lower turnover when pay growth was low compared to high. Although we did not hypothesize this pattern, it does correspond to results reported by Messersmith et al. (2011). They also found that executives who ranked high in terms of internal pay standing in the context of a more hierarchical pay structure were more likely to leave their company. The explanation offered by the authors suggests that these executives may simply feel they have "won" the pay tournament and the only way for them to earn significantly higher pay is to leave their current company and join a new one. Thus, employees might rise to the top of the organization in terms of salary before they take off to other companies where they can then compete for even higher prizes. An additional explanation could be that

employees at the top of the pay hierarchy are the most ambitious among a group of highly ambitious people. This might make them more desirous of pursuing new challenges, presumably at higher pay, in other organizations once they have reached the pinnacle of their current position. Future research is needed to investigate these possibilities, both of which could account for the results found in the present study. Notwithstanding this interesting result, our main hypothesis that pay growth will have negative effects on turnover when internal pay standing is low was fully supported.

Our findings have practical implications for the design of tournament-like pay schemes. Executives at the lower ranks of the TMT can be motivated to stay if they receive constant and incremental promotions. Indeed, psychological research suggests that people prefer a more certain chance of winning a small prize in the short-term than a riskier chance of winning a large reward in the future (Tversky & Kahneman, 1974). Similarly, in the time-restricted world of TMTs, most executives might be more motivated by smaller, more frequent signals that they are still in the race than the prospect of a single, large reward. Main et al. (1993) observed:

> Promotion brings a raise, but not immediately on the order that would be expected if a simple lottery or tournament were operating. Instead, the appropriate analogy seems to be that of a relay race. Executives compete, with winners being rewarded with incremental raises and periodic promotions. (p. 625)

Thus, while organizations seem to rely on steady pay growths to incentivize their employees, our study suggests that pay growths may be more effective at retaining employees at the bottom of the TMT pay hierarchy. This finding seems counterintuitive, as previous research has assumed that even well-paid employees may feel underappreciated if they do not receive adequate pay growth (Nyberg, 2010). Paradoxically, our data suggest that high pay growth can actually facilitate the turnover of high-ranking executives. Above, we proposed possible explanations for these findings, and while we are cautious about drawing firm conclusions, one implication of the result is that organizational resources might be more effectively deployed by giving more rewards to those at the bottom of the TMT pay distribution to ensure that they perceive a positive pay trajectory rather than lavishing those at the top with even higher salaries that separate them further from their peers.

Our study also helps to answer the question of when and for whom pay growth over time matters. So far, little research has been done on the role of pay growth in turnover (for notable exceptions, see, e.g., Nyberg, 2010; Salamin & Hom, 2005). In fact, individual pay growth is not registered as a variable in widely cited meta-analyses dealing with the effects of pay on job satisfaction (Judge, Piccolo, Podsakoff, Shaw, & Rich, 2010) or the predictors of turnover (e.g., Cotton & Tuttle, 1986; Griffeth, Hom, & Gaertner, 2000). Although this may seem surprising given that pay practices have become more dynamic over time (Heneman et al., 2002), there are empirical and theoretical reasons behind why past research might not have seen a relationship between pay dynamics and turnover. First, it may be that pay growth exerts a very low empirical effect on individual outcomes that is difficult to detect. Indeed, a meta-analysis found only a very weak correlation between pay growth and pay level satisfaction (ρ = .08) (Williams, McDaniel, & Nguyen, 2006), while a study by Nyberg, Pieper, and Trevor (2016) found no effect of bonus pay trends, and only a small effect of merit pay trends, on subsequent performance. Theoretically, it may be that pay growth ultimately increases an employee's satisfaction with the current pay level, which entails that the effects of pay growth should be reflected in employees' current pay level (Williams et al., 2006). Another reason for the small effect of pay growth might be that recipients quickly adapt to the new pay level (i.e., the "hedonic treadmill"; Brickman & Campbell, 1971). It might also be that pay raises are generally perceived to be a "drop in the bucket" because they tend to increase in small steps and people are generally insensitive to small changes (i.e., Weber's Law of Just Noticeable Differences) (Mitra, Gupta, & Jenkins, 1997; Mitra, Tenhiälä, & Shaw, 2016). Taken together, these empirical findings and discussions suggest that the main effects of pay growth may be weak at best. Indeed, when we only included the main effect of *pay growth* in our model (Step 2, Table 2), its effect on turnover was not significant. Nonetheless, it is theoretically conceivable that pay growth may send signals to employees that they are appreciated as organizational members (Nyberg, 2010). Thus, rather than looking for main effects, we think that a more promising approach involves asking when, how, and for whom pay growth matters. On this point, we found that pay growth differently predicted turnover for executives who rank low vs. high in the pay hierarchy. On the low pay rank end, this finding accords with our theoretical argument that people switch between self-enhancing temporal and social comparisons depending on which one is more favorable. On the high pay rank end, as discussed above, these results may simply show that winners of pay tournaments leave a company to compete for higher prizes (i.e., pay) in other companies. In any case, our findings suggest that pay growth can be better understood from a contingency perspective. In light of this, future research may investigate other moderators of the pay growth–outcome relationship.

Our study is not without its limitations. First, we measured pay growth as the year-to-year change in pay. We think that the yearly changes in pay should be highly salient for executives because they are experienced close in time and as some of the above discussion suggests, the effect of pay growth may diminish over time. In fairness, however, we do not know exactly *how* executives make temporal pay comparisons. Future research might yield more precise predictions by exploring how far people's temporal comparisons reach back in time and whether they are sensitive to different pay growth trajectories. Second, although we used objective data and controlled for various theoretically relevant variables, we cannot rule out possible alternative explanations for our findings without the aid of additional research, including (quasi-) experiments. For instance, we did not measure the psychological mechanisms that may explain our findings. Future research could investigate whether relative TMT pay and pay growth interact to explain executives' relative feeling of being valued as members of the TMT and the organization. Third, we looked at pay as the total compensation package, but it may be that different forms of pay (e.g., fixed pay vs. variable pay) elicit different

effects. We encourage researchers to consider the possible effects of different pay forms in future research. It is worth noting that we did not find an effect of relative industry pay on turnover, which conflicts with previous findings (Wade et al., 2006). However, Messersmith et al. (2011), who used a subsample of our data, also failed to find a main effect of relative industry pay. Rather, they found that executives with higher than market average pay were more likely to turnover when encountering higher levels of internal pay dispersion, which is the opposite of what one would expect based on social comparison principles. This seems to suggest that external pay comparisons work differently compared to internal pay comparisons. The relationship between relative industry pay and turnover thus remains an issue that deserves attention in future research. Finally, we were not able to specify whether executives left their companies voluntarily or involuntarily. This is a common problem in this research area (cf. Messersmith et al., 2011) as the Execucomp database provides only incomplete records of executives' reasons for turnover, and other data sources such as press accounts are often unreliable or difficult to obtain (Wagner, Pfeffer, & O'Reilly, 1984). Thus, we support recent calls by scholars to obtain separate measures of (in)voluntary turnover in future research (Messersmith et al., 2011).

There has been a lot of discussion around the effectiveness of dispersed pay schemes and the costs of social comparisons in organizations (e.g., Larkin et al., 2012; Nickerson & Zenger, 2008; Shaw, 2014). The present findings support our claim that people readily switch between temporal (pay growth) and social pay (internal pay standing) comparisons depending on which is more favorable to the self. This finding suggests a need to update the discussion on the costs of social comparisons in organizations, mainly by emphasizing that employees may apply both social and temporal comparisons.

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NOTES

[1]We use several measures that are calculated based on TMT members' pay. As a consequence, it is possible that multicollinearity could increase both the number of standard errors and the risk of Type II errors. Thus, multicollinearity might have made the detection of significant results more difficult. However, all variance inflation factors were in the range of 1.02 to 3.36—well below the threshold of 10 (Hair, Anderson, Tatham, & Black, 1998).

[2]We measured explained variance through Somer's D, which is similar to explained variance in regression analysis (Newson, 2010; Sheridan, 1992).

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