

# In Search of the Elusive U-Shaped Performance–Turnover Relationship: Are High Performing Swiss Bankers More Liable to Quit?

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This project revisits the perennial debate over the relationship between job performance and turnover. Disputing traditional findings, C. Trevor, B. Gerhart, and J. Boudreau (1997) observed that high and low performers quit more than do average performers. They further challenged received wisdom by showing that promotions can induce turnover, especially among poor performers, by signaling ability. The authors sought to replicate and extend these unconventional findings by exploring curvilinear and moderating effects on the performance–exit relationship among 11,098 Swiss nationals employed in a bank. Survival regression revealed that performance is curvilinearly related to quits and that bonus pay deterred superior performers from leaving more than did pay increases. Further, the average number of job levels advanced per promotion rather than promotion rate increased quit risks. Cultural and organizational moderators of performance–termination associations and effective strategies for retaining top performers are discussed.

*Keywords:* curvilinear, performance, turnover, relationship, Switzerland

From labor economics to organizational psychology, diverse disciplines have sought to identify who quits, recognizing that turnover is dysfunctional for companies when leavers are profitable, possess proprietary knowledge, or have extensive customer networks (Baron, Hannan, & Burton, 2001; Coff, 1997; Cooper, 2001; Dalton, Todor, & Krackhardt, 1982; Hayes & Schaefer, 1999; Lazear, 1998). Industrial psychologists have long studied this so-called *turnover functionality* by probing how performance relates to quits (McEvoy & Cascio, 1987; Williams & Livingstone, 1994). Summarizing a quarter century of research, meta-analyses have consistently estimated negative, linear performance–turnover relationships (Bycio, Hackett, & Alvares, 1990; Griffeth, Hom, & Gaertner, 2000; McEvoy & Cascio, 1987; Williams & Livingstone, 1994).

Despite this consensus, several scholars have deemed such conclusions premature or oversimplified (Trevor, Gerhart, & Boudreau, 1997; Williams & Livingstone, 1987). Using sophisticated methodology, Trevor, Gerhart, and Boudreau (1997) furnished strong evidence for a curvilinear association between performance and turnover, and Allen and Griffeth (2001) documented that nonlinearity is more common than previously believed (Griffeth & Hom, 1995). These recent discoveries revive a controversy over

the shape of the performance–turnover curve that appeared long decided by various meta-analytic reviews. These demonstrations further imply that the paucity of findings for nonlinearity arises more from researchers' failure to explicitly check for this form or application of insensitive methodologies. Because of its far-reaching theoretical and practical significance, we revisit the performance–turnover curve and build upon Trevor et al.'s lead to further corroborate curvilinearity.

## Conventional Wisdom About the Performance–Turnover Relationship

Dalton et al. (1982) pioneered the idea of turnover functionality, disputing traditional assumptions that job separations are always detrimental to organizations. Their insight that a leaver's value to an employer determines whether turnover is dysfunctional initiated a long research stream over whether good or bad performers most often quit. Some investigators have discerned positive performance–termination relationships, lending support to the view that top performers' abundant employment prospects impel them to exit (Schwab, 1991). Others have observed inverse associations, inferring that greater institutional rewards given superior performers bind them to employment (Lance, 1988). Still other researchers have noted curvilinear relationships and concluded that marginal performers, denied organizational inducements, and high performers, lured away by outside alternatives, are most exit prone (Jackofsky, Ferris, & Breckenridge, 1986). Resolving such conflicting results, successively more comprehensive meta-analyses over the years have uniformly estimated negative performance–turnover linearity (Bycio et al., 1990; McEvoy & Cascio, 1987; Williams & Livingstone, 1994). Most recently, a meta-analysis by Griffeth et al. (2000) thus computed a corrected correlation of  $-.17$  from aggregating 72 correlations ( $N = 25,234$ ).

Apart from pinpointing its form, organizational scientists have identified moderators of the performance–quit relationship (Hom & Griffeth, 1995). In particular, many studies report that perfor-

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mance-contingent incentives strengthen job incumbency more for high than for low performers (Allen & Griffeth, 2001; Griffeth et al., 2000; Harrison, Virick, & William, 1996; Williams & Livingstone, 1994). According to available evidence, promotions do not affect performance–turnover associations, despite being performance based (Powell & Butterfield, 1994; Rosenbaum, 1979). Although Performance  $\times$  Promotions interactions are rarely assessed, the bulk of empirical findings attests that promotions bond both high and low performers to their jobs (Carson, Carson, Griffeth, & Steel, 1996; Elvira & Cohen, 2001; Griffeth et al., 2000; Lyness & Judiesch, 2001; Malos & Campion, 2000; Munasinghe, 2001). Altogether, this body of work yields practical prescriptions: Employers should avoid overreacting to elevated quit rates (as subpar performers most often leave) and can secure valued contributors' allegiance by promoting and compensating them.

### Challenging Conventional Wisdom

In spite of such overwhelming evidence, negative performance–quit linearity is not always sustained (cf. Jackofsky et al., 1986; Mossholder, Bedeian, Norris, Giles, & Field, 1988). Mounting the first major challenge to received wisdom, Williams and Livingstone (1994) derived a nonlinear relationship when meta-analyzing eight semipartial correlations ( $N = 1,506$ ) after removing linear performance effects. Even so, this meta-analytic test included studies assessing turnover intentions (Johns, 1989), omitted non-supportive tests (Birnbaum & Somers, 1993; Wright & Bonett, 1993), and did not control for the biasing effects of performance interactions before estimating quadratic effects (Ganzach, 1997).

Applying the most rigorous methodology to date, Trevor et al. (1997) established that performance covaries with exits in a curvilinear fashion: Effective and ineffective incumbents quit more than do average incumbents. Their test better captured nonlinearity for several reasons. For one, they sampled a much larger population ( $N = 5,143$ ), boosting statistical power to detect curvilinearity. Previous tests with small sample sizes (e.g., Birnbaum & Somers, 1993,  $N = 142$ ; Wright & Bonett, 1993,  $N = 93$ ) likely failed to verify quadratic effects, as higher order terms lower reliability and multicollinearity weakens statistical power (Cohen, Cohen, West, & Aiken, 2003). Moreover, Trevor et al.'s analyses included performance interactive terms. Their omission in prior studies (Birnbaum & Somers, 1993; Wright & Bonett, 1993) possibly obscured curvilinear effects (Ganzach, 1997). Trevor and his colleagues also pioneered survival regression to predict *turnover hazard*, or rate of occurrence of exits at time  $t$  given employment until this time (Allison, 1995). Unlike the coarser turnover scale used in ordinary least squares regression analyses (Birnbaum & Somers, 1993), turnover hazard represents a continuous criterion, which can facilitate discovery of higher order effects (Aguinis, 1995, 2004; Shepperd, 1991). Finally, Trevor and his associates sampled a broad range of managerial and professional occupations in which accomplishments are rewarded (increasing low performer quits) and potentially visible to the external marketplace (encouraging top performer exits; Allen & Griffeth, 1999; Trevor, 2001). Given these preconditions, curvilinear performance–turnover relationships are more likely to emerge.

Beyond this, Trevor et al. (1997) questioned prevailing facts about the moderation of performance–turnover associations. Gen-

eralizing findings that monetary inducements moderate linear relationships, they documented that salary growth can alter performance–quit curvilinearity. Despite greater quit propensity, superior performers will stay if amply rewarded. Moreover, Trevor and his colleagues raised doubts about promotions' ability to engender loyalty, maintaining that promotions can boost quits by signaling to the marketplace the talent of those promoted. Signals are evidence of worker productivity (e.g., credentials) that are visible to potential employers (Lazear, 1998). Outside companies lack direct knowledge of worker productivity in other firms and must infer worker capacity from their personnel actions (Scoones & Bernhardt, 1998; Spence, 1973; Waldman, 1990). That is, a "worker's visibility is enhanced by assignment to a higher level job" (Milgrom & Oster, 1987, p. 456). When informed about worker quality elsewhere (Ricart i Costa, 1988), competing firms try to hire productive incumbents away from their current workplace (Hayes & Schaefer, 1999; Lazear, 1998). Testing this thesis, Trevor et al. statistically controlled the salary increases awarded by promotions, because their exit-inhibiting effects can counteract promotions' signaling effects. After holding pay raises constant, Trevor et al.'s survival regression did determine that promotions elevate quit risks.

Trevor et al. (1997) also contested leading turnover perspectives by documenting that promotions can influence how performance relates to quits (Mobley, 1982; Price & Mueller, 1986). By signaling competency, they argued, promotions (after accounting for wage growth) most encourage underperformers to leave. Before their true ability is fully known to their employers (Scoones & Bernhardt, 1998), weak performers might attain promotions early in their career on the basis of criteria other than merit (e.g., completing probation; Rosenbaum, 1979). In contrast, exceptional performers possess more indicators of worth than just promotional progress (e.g., a history of accomplishments). Consequently, prospective employers discount promotions when reviewing high performers' richer resumes but weigh promotions more heavily for substandard performers (Hurley & Sonnenfeld, 1998). Affirming a discounting effect, Trevor and his associates showed that advancements induce more unsatisfactory than top performers to vacate their jobs.

### The Present Investigation

Trevor et al.'s (1997) unique results cannot be interpreted as overturning established work about performance's linear and moderating effects on turnover without further verification (Griffeth et al., 2000). Indeed, they noted that the "the exact shape and reasons for curvilinearity is best made on a study-by-study basis" (Trevor et al., 1997, p. 45). The precise form of performance–turnover curve may shift from firm to firm because performance rating distributions and contingent pay contracts differ across firms (cf. Iverson & Deery, 1999). To illustrate, Zenger (1992) reported that typical merit pay plans that reward the extremes of a performance distribution and disregard distinctions for moderate performers produce cubic associations between performance and resignations. Under such contracts, the lowest and the above-average performers (the latter feeling pay inequity) most often quit. Conceivably, Trevor et al.'s quadratic relationship was drawn from a distressed business; few corporations can long survive when their best performers exit at the same rates as their worse performers (R. Smith,

personal communication, April 15, 2004). Given the popularity of forced-ranking appraisal systems that reserve large incentives for the highest ranked ("Forced Rankings," 2002; Pfeffer, 2001), most businesses surely avoid the mass exodus of top talent witnessed by Trevor and his colleagues. Because Trevor et al.'s discovery is at odds with prevailing meta-analytic evidence and may not generalize to companies employing more common pay-for-performance schemes, replication of their pronounced U-shaped curve is essential.

Moreover, Trevor et al.'s (1997) demonstration that promotions stimulate departures, especially among nonperformers, by communicating ability merits further scrutiny. Their result contradicts predominant theoretical and empirical work from organizational psychology that advancements help to retain both high and low performers (Griffeth et al., 2000; Mobley, 1982; Price & Mueller, 1986). Also of importance, subsequent survival analyses have failed to uphold signaling effects, showing that promotions decrease exits even after the researchers controlled for salary (Benson, Finegold, & Mohrman, 2004; Lyness & Judiesch, 2001). Besides this, Trevor et al. estimated a small Performance  $\times$  Promotions interaction that did not replicate with a continuous performance scale.

Finally, Trevor and his colleagues (1997) neglected to evaluate whether performance and other substantive predictors met the proportionality hazard (PH) assumption (Harrison, 2002). Cox regression assumes that hazard functions (frequency distributions of quit rates across time) for all persons be a constant multiple of a baseline hazard function (Morita, Lee, & Mowday, 1993). Unfortunately, PH violations are the rule rather than exception (Singer & Willett, 1991), and simulation studies show how ignoring such violations can distort parameter estimates (Page, 1998; Schemper, 1992). Therefore, the quadratic and interactive performance effects Trevor et al. uncovered may be spurious if the proportionality assumption is untenable and uncontrolled.

#### *Testing Performance–Turnover Curvilinearity in Switzerland*

Refining Trevor et al.'s (1997) pioneering methodology, we further generalize performance–turnover curvilinearity to another occupation and country: Swiss bankers. Given higher labor mobility in Switzerland relative to other European countries (Organisation for Economic Co-Operation and Development, 1997), turnover is amenable to inquiry in this society. To illustrate, a Swiss household survey reveals that 21% of working respondents desire to leave their job (Diekmann, Englehardt, Jann, Armingeon, & Geissbühler, 1999). Additionally, cross-cultural research and Swiss banking studies suggest that general conditions for both high performer and low performer turnover also exist in Swiss banks (Allen & Griffeth, 2001). Specifically, Swiss employers endorse a cultural norm for performance excellence (House, Javidan, Hanges, & Dorfman, 2002; Jesuino, 2002; Szabo et al., 2002) and favor competency over nepotism when recruiting (Hofstede, 2001). Because Swiss firms hire for competency (Tixier, 1996), star performers can more easily change jobs (Black, 2001). Swiss banks routinely raid top producers or those with scarce skills from other firms (Rappaport, 2003; "UBS Poaches," 2003). Befitting a performance-oriented society (House et al., 2002), Swiss enterprises in banking (Salamin, 2000; Schütz, 2000) and other indus-

tries (Brewster, Hegewisch, & Mayne, 1994) also withhold incentive pay and recognition from marginal performers. Such reward contingencies may prompt them to quit (Zenger, 1992). Because of greater marketability for effective performers and fewer job enticements for ineffective performers in Swiss banks, these groups may exit more than do adequate performers (Allen & Griffeth, 2001). Accordingly, we postulated:

*Hypothesis 1.* Job performance bears a quadratic relationship to turnover.

#### *Salary Growth and Bonuses as Moderators of Performance–Turnover Curvilinearity*

Following Trevor et al. (1997), our research determines whether salary growth keeps superior performing Swiss bankers from exiting. Like U.S. business, Swiss firms often award larger pay increases to their best performers. According to a survey of European personnel practices, 65% of Swiss companies offer merit pay (Brewster et al., 1994), and in-depth studies of Swiss banks disclose that performance more than seniority underpins pay raises (Boyd & Salamin, 2001; Salamin, 2000). Because of Swiss affinity for equity- over equality-based rewards (Gomez-Mejia & Welbourne, 1991; Hofstede, 2001; House et al., 2002; Miles & Greenberg, 1993), high-performing Swiss nationals should commit to organizations that compensate them with inducements proportionate to their contributions. Drawing on the above rationale and observations, we proposed the following for evaluation:

*Hypothesis 2a.* Pay growth binds superior rather than marginal performers closer to employment.

Extending Trevor et al.'s (1997) work, we examine whether merit bonuses represent a more powerful moderator of the performance–turnover curve. Criticizing Trevor et al.'s pay index, Allen and Griffeth (1999) pointed out that "it is not clear that salary growth is necessarily indicative of contingent rewards" (p. 532–533). By contrast, merit bonuses provide a clearer line of sight between employee efforts and rewards than do merit pay plans (which also reflect current salary and seniority; Harris, Gilbreath, & Sunday, 1998; Heneman, Ledford, & Gresham, 2000) and must be reearned with continued performance yearly (Milkovich & Newman, 2002; Schuster & Zingheim, 1992). Because maximally contingent incentives most reinforce performance–quit relationships (Harrison et al., 1996), merit bonuses should most commit productive incumbents to employing institutions. Given that bonus pay is more contingent on performance than are pay hikes in Swiss banks (Boyd & Salamin, 2001; "Great Disappearing," 2002), we envisioned the following:

*Hypothesis 2b.* Bonuses induce more high rather than low performers to stay.

#### *Promotions' Signaling and Moderating Effects*

Widespread speculations notwithstanding (Ricart i Costa, 1988; Spence, 1973; Waldman, 1990), Trevor et al. (1997) first provided direct evidence for promotions' signaling function. Though recent tests failed at replication (Benson et al., 2004; Lyness & Judiesch, 2001), we have reason to believe that advancements might signal

productive capability in Swiss banking. Job titles and levels within the occupational hierarchy are uniform and convey similar status distinctions across Swiss banks (Schütz, 2000; Studer-Walsh, 1991). Thus, a vice-presidency carries the same prestige and meaning across Swiss banks, like partnership in law and public accounting firms (Malos & Campion, 2000; Robson, Wholey, & Barefield, 1996). Further, the concentration of Swiss banks within a relatively small country territory expedites news about personnel actions across interfirm grapevines (Kydd, Ogilvie, & Slade, 1990) as well as hiring on the basis of employee referrals (Fujiwara-Greve & Greve, 2000). Given shared meaning of job titles and rapid transmission of personnel news, especially about executive promotions (Dalla-Costa, 2003; “Moves in Brief,” 2003), upward mobility in this career may represent a highly visible, industry-wide sign of accomplishment (Rosenbaum, 1979). Favoring competency when hiring (Tixier, 1996), Swiss employers may readily recruit highly promoted bankers rather than their less-promoted counterparts. For these reasons, we advanced the following:

*Hypothesis 3a.* After pay growth and bonus are controlled, the promotion rate increases the likelihood of quitting.

Heeding Trevor’s (2001) call for more inquiry into other kinds of *movement capital*—personal attributes that facilitate job mobility—our study investigates multilevel promotions, or number of hierarchical levels skipped during promotions, as a potential ability signal. The tournament theory of career mobility (Rosenbaum, 1979) posits that swift career velocity that encompasses advancements spanning more than one rung on a job ladder more reliably denotes employee worth to the labor market (Hurley & Sonnefeld, 1998). In light of their rarity in banking, fast-track hierarchical promotions appear in sharp relief to conventional seniority-driven advancement patterns (Seltzer & Simons, 2001). For example, a biographic profile of two Swiss bank CEOs noted how their rapid upward trajectory, reaching executive vice presidency at the age of 42, foreshadowed their eventual CEO ascension (Schütz, 2000). All told, we formulated the prediction below, because Swiss bankers advancing more than one job level during promotions achieve greater labor market visibility:

*Hypothesis 3b.* Multilevel promotions are positively related to turnover risks.

Given Trevor et al.’s (1997) tenuous support for Performance  $\times$  Promotions interactions, we pursue more confirmation for whether promotions can enhance mobility for marginal performers. On the one hand, cultural portrayals that the Swiss feel no greater corporate loyalty and pride than U.S. nationals imply that underperforming Swiss bankers will readily resign once they are promoted (Ashkanasy, Trevor-Roberts, & Earnshaw, 2002; Jesuino, 2002; Szabo et al., 2002). After all, nonperformers have few indicators of productivity and anticipate that future indicators are not forthcoming from the current workplace (Trevor et al., 1997). For instance, Groysberg and Nanda (2002) observed that equity analysts who are publicly recognized for the first and only time in their career turnover more than do analysts regularly earning favorable publicity. On the other hand, poor performers who win early promotions may develop stronger allegiance to their employers to reciprocate for such supportiveness (Eisenberger, Stinglhamber,

Vandenberghe, Sucharski, & Rhoades, 2002). Owing to conflicting predictions (and absent data about how Swiss nonperformers react to promotions), we considered these research questions:

*Research Question 1.* Do promotions alter the performance–turnover relationship?

*Research Question 2.* Do multilevel promotions affect performance–quit curvilinearity?

Because of the extent to which Trevor et al.’s (1997) work disputed orthodoxy, our goal is to replicate and extend their discoveries about performance’s curvilinear and interactive effects. Toward that end, we capitalize on methodological strengths of their test by sampling a large workforce ( $N = 11,098$ ) employed in professions in which achievements are rewarded and potentially visible to external organizations (Rappaport, 2003; Salamin, 2000). While including interactive performance terms as controls (Ganzach, 1997), we further improve upon Trevor et al.’s survival regression by controlling for PH violations to more validly gauge performance’s varied effects. Besides this, our inquiry adds to the limited knowledge base about turnover in cultures other than Anglo American culture by generalizing performance’s nonlinear and moderating effects to Switzerland. Finally, we extend Trevor et al.’s findings by introducing a stronger ability signal (i.e., multilevel promotions) as well as a more powerful moderator of performance–exit curvilinearity (namely, merit bonus). Figure 1 summarizes our key hypotheses and research questions.

## Method

### *Participants*

We collected personnel data on all 11,098 Swiss nationals entering a Swiss bank between October 1, 1994 and March 22, 1999. Rather than sampling a cross-section of the entire workforce (“stock sample,” Singer & Willett, 2003), we used a cohort sampling design that tracked everyone from common beginning dates—namely, all those entering the firm during this 5-year period (cf. Trevor et al., 1997). By contrast, the problem of late entrants to the risk set (or employees hired before the measurement window) is endemic to survival analyses using stock samples (Allison, 1995; Singer & Willett, 2003). Because our design ensures that everyone is observed from the day they are hired, our cohort sampling avoids the potential bias to parameter estimates that arises from inclusion of late entrants.

Study participants worked in positions as varied as director of investment banking, credit risk analyst, and marketing manager for private banking. Fifty-seven percent were men, and 43% were women. In a seven-level career track, 75% worked in the lowest job level. Their bank tenure averaged 22.8 months, and mean age was 32.2 years. Sixty-six percent had no children. Forty-seven percent were single. The rest were married (27%), widowed (9%), divorced (12%), or separated (5%). Eighty-one percent worked full time.

### *Measures*

*Voluntary quits.* The Human Resources Department classified exits into six categories: voluntary quits, retirement, dismissals, death, illness and disability, and layoffs. On the basis of these codes, 35.7% of the total sample had voluntarily terminated as of March 22, 1999.

*Performance.* For annual performance reviews, the bank used a 5-point global performance rating, in which 5 represents highest perfor-

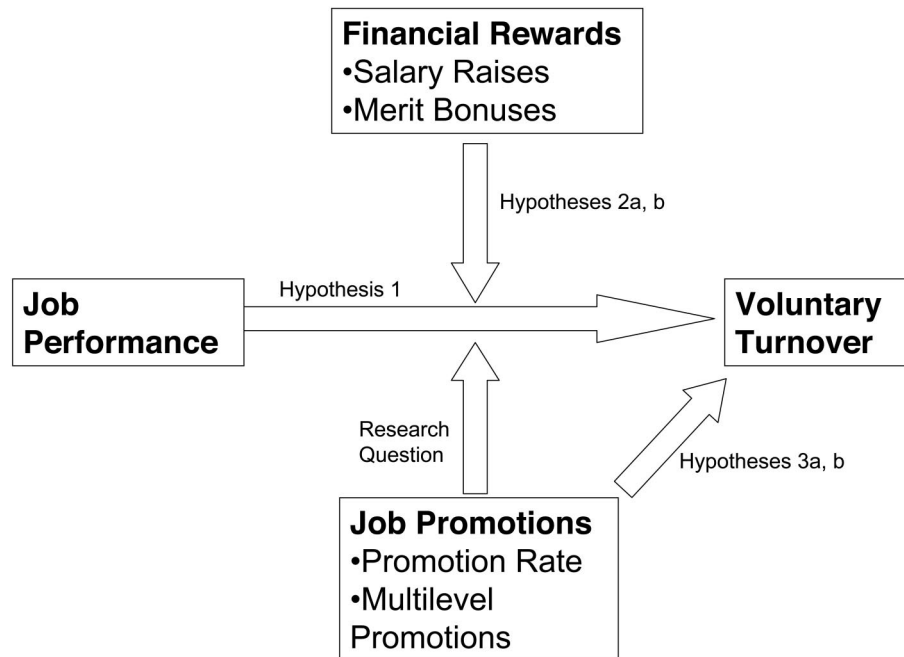


Figure 1. Model of performance–turnover relationship and contextual factors.

mance. Unlike skewed performance distributions observed in American firms, performance ratings in this bank roughly followed a symmetric curve: 1 = 2.9%, 2 = 23.7%, 3 = 40.5%, 4 = 24.7%, and 5 = 8.6%.

**Pay raise.** Like Trevor et al. (1997), we computed mean percentage of pay raise during firm tenure. Drawn directly from the central Human Resources Information System database, this information was quite accurate. Accurate payroll data was essential, as such data determines a menu of benefits for employees (e.g., pension contributions) and taxes owed to the government.

**Merit bonus.** For a reward better linked to performance, we computed the latest bonus (percentage of base pay) earned. Annual incentives (which vary yearly) are based on individual performance (measured by financial indicators and subjective appraisals of behaviors, such as client orientation and people management) and divisional results (A. Salamin, personal communication, June, 1998). Studying the same firm, Boyd and Salamin (2001) established that bonuses positively correlated with job performance (and job level). In our study, employees whose performance ratings were 1 or 2 received a bonus averaging 0.92%, whereas top performers rated as 5 earned an average bonus of 30.5%.

**Promotion rate.** We adopted Trevor et al.'s (1997) measure, which divides the employee's total number of promotions by years of tenure. They argued that this time-indexed scale is a stronger ability sign than is raw number of promotions. Promotion progress was derived from the central Human Resources Information System database and was accurate, as promotions dictate certain employee benefits and legal responsibilities for certain positions. For example, certain job titles bestow upon job incumbents the authority to represent the organization and sign contracts.

**Multilevel promotions.** For a more visible signal, we multiplied number of promotions during firm tenure by average number of job levels advanced per promotion (divided by tenure).

**Control variables.** Cox regression analyses also included sex, age, tenure, marital status, number of children, percentage of time worked (or full-time equivalent), job level, and base pay (Elvira & Cohen, 2001; Griffith et al., 2000; Organisation for Economic Co-Operation and Development, 1997; Spilerman & Petersen, 1999; Trevor et al., 1997). Because the bank originated from the union of two preexisting banks that differed

in culture and size (Schütz, 2000), we controlled for prior bank membership.

### Statistical Analyses

Following Hom and Kinicki (2001), we measured employment duration as number of days employed in the organization. This finer-grained duration measure reduces the amount of tied data (identical points in time), as excessive ties can bias continuous-time models. The Cox regression treated involuntary quits as censored data. Wald statistics tested the significance of the predictor coefficients, and model likelihood-ratio chi-squares evaluated whether all coefficients were null. We further stratified survival analyses by year of hire to allow each cohort to have potentially different baseline hazard functions (Trevor et al., 1997). Further, we tested the PH assumption by assessing Predictor  $\times$  Time interactions and corrected for PH violations by including such terms in all equations (Allison, 1995; Singer & Willett, 1991).

We began with a baseline Cox regression model that includes all control variables and Predictor  $\times$  Time interactions. To test hypotheses, we estimated different models by adding different sets of pay, promotion, and performance predictors (and interaction and quadratic terms) to the baseline model. To examine how promotions affect exit risk, we evaluated a linear model that added promotion and compensation indices to the baseline model (cf. Trevor et al., 1997). To assess performance–quit curvilinearity, another model (Quadratic Model No. 1) introduced performance and a quadratic performance term as well as Pay  $\times$  Performance and Promotion  $\times$  Performance interactions to the baseline model (Trevor et al., 1997). On the basis of substantive meaningfulness (Aguinis, 2004; MacCallum & Mar, 1995), we entered these particular product terms as covariates to better substantiate curvilinearity (Ganzach, 1997). To test pay moderation of this curve, another model (Quadratic Model No. 2) added average pay increase and bonus and their interactions with performance to the baseline model (Trevor et al., 1997). This latter regression also included the quadratic performance term to assess Pay  $\times$  Performance interactions more accurately (Cortina, 1993; Ganzach, 1997). To test whether promotions moderate this curve, another model (Quadratic Model No. 3) included

promotion rate and multilevel promotions and their interactions with performance and performance squared (along with the quadratic performance term) to the baseline model (Trevor et al., 1997).

## Results

### *Linear Effects of Pay Increases, Bonuses, and Control Variables*

Table 1 reports variable intercorrelations, and Table 2 shows the Cox regression tests. The baseline model reveals that prior bank affiliation, sex, age, marital status, job level, full-time equivalent, and base pay predict quits. That is, women, younger, and part-time bankers are predisposed to quit, whereas high-ranking, lower paid, and single bankers are less so. The linear model next estimated the linear effects of salary growth and bonus pay. This analysis replicated Trevor et al.'s (1997) finding that wage growth deters turnover. According to Allison's (1995)  $100(e^{\beta} - 1)$  formula, a 1% pay raise increase lowered the instantaneous quit probability by 81.3%. All things being equal then, a banker earning a 1% greater salary raise is 81% less likely to leave than is his or her lower paid counterpart. Going beyond Trevor et al.'s work, we observed that latest bonus attained also lessened turnover risk: A 1% bonus increase diminished this risk by 98.1%.

### *Performance–Turnover Curvilinearity*

In Table 2, Quadratic Model No. 1 detected a significant curvilinear performance effect ( $\beta = -.06, p < .05$ ). To interpret this finding, Figure 2 plots job survival rates for various durations of job tenure against performance. Although not as pronounced as Trevor et al.'s (1997) finding, top performers (rated 5) exhibited a lower survival rate than those evaluated 4, as Figure 2 shows. According to analysis of variance, the performers rated 5 remained for a shorter duration (708.9 days) than did the performers rated 4 (768.7 days),  $F(1, 3695) = 11.43, p < .01$ . Sustaining Hypothesis 1, this finding extends Trevor et al.'s discovery, generalizing the curvilinear performance–turnover association across another industry and culture.

### *Moderation by Salary Growth and Bonus*

Quadratic Model No. 2 rejected Hypothesis 2a. Salary growth did not moderate performance effects on quit risks. By comparison, bonus pay did moderate performance–quit curvilinearity. To interpret this Performance  $\times$  Bonus interaction, Figure 3 reports 2-year survival curves for various subgroups of incumbents earning different bonus payouts (in percentages). Corroborating Hypothesis 2b then, all top performers abandoned their job if they failed to receive any bonus whatsoever (because of supervisory oversight, occupancy in low-level positions, or membership in unprofitable divisions), whereas their exits plunged when sizable bonuses were given.

### *Promotions' Signaling and Moderating Effects*

The linear model further revealed that promotion rate (net of bonus, salary growth, and base pay) reduced quit risk: A one-unit increase in promotional rate decreased exits by 69.6%. This finding rejected Hypothesis 3a and failed to replicate Trevor et al.'s

(1997) work. By contrast, multilevel promotions boosted departures: A 1% increase in this predictor scale translates into a 121.8% higher rate of leaving. Supporting Hypothesis 3b, this result extends Trevor et al.'s test by showing that being promoted more than one hierarchical level at a time enhances the job prospects of those promoted and risks their loss to competitors. Finally, with regard to Research Questions 1 and 2, Quadratic Model No. 3 in Table 2 found no significant Promotions  $\times$  Performance interactions. In short, these findings did not generalize Trevor et al.'s (1997) observation that promotions enhance underperformers' movement capital.

## Discussion

Like Trevor et al.'s (1997) study, our investigation countered conventional wisdom by showing that performance is curvilinearly related to resignations. Current meta-analytical conclusions that exceptional performers are least exit prone are thus misleading (Griffeth et al., 2000). Employers basing retention practices on such findings may erroneously assume that their best performers are loyal and that they need not expend special resources toward retaining them. When samples from recent nonlinearity tests (the current test; Iverson & Deery, 1999; Trevor et al., 1997) are combined ( $N = 19,835$ ), evidence for nonlinearity is nearly as robust as linearity evidence (e.g., Griffeth et al., 2000,  $N = 25,234$ ). Basically, these curvilinearity demonstrations imply that performance can also signal competency for professionals and managers (Trevor, 2001). Indeed, they dispute current thinking (Griffeth & Hom, 1995; Lazear, 1998) that quadratic performance effects (and high performer exits) are limited to those few occupations in which public or objective signals exist (e.g., athletes, Glenn, McGarrity, & Weller, 2001; professors, Schwab, 1991; mutual fund managers, Rao & Drazin, 2002). Rather, newer findings suggest that subjective performance appraisals, available in many jobs, can yield concrete signals (e.g., wage history) that enhance movement ease for superior performers (Trevor, 2001). All told, performance–turnover curvilinearity may be more common than turnover scholars realize.

Approximating a monotonic form, the Swiss performance–termination relationship is not as markedly curved as Trevor et al.'s (1997) U-shaped relationship. Top performers severed employment ties at much lower rates (especially relative to low performers) in this sample than in Trevor et al.'s sample. Why did high performer quit rates differ between studies? Perhaps, mutual-investment employee–organization relationships are more common in Switzerland than in the United States (Tsui, Pearce, Porter, & Tripoli, 1997). In a mutual-investment strategy, employers offer extensive, open-ended rewards, such as job security and career-enhancing investments to employees, in exchange for their broad contributions to the organization (e.g., high productivity and loyalty). Perhaps Swiss banks subscribe to a mutual-investment philosophy toward their workforce, discouraging exceptional performers from exiting at the same rates as their American counterparts. Along these lines, the Swiss bank in our research may have more generously rewarded its best performers, better securing their loyalty, than did the American company studied by Trevor et al. because this bank possessed greater financial resources than did the latter firm. Further, superior performers in Switzerland may not have as much ease of movement as do their American counter-

Table 1  
Variable Means, Standard Deviations, and Correlations

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1. Voluntary turnover	0.36	0.48	—																						
2. Bank	1.66	0.47	-0.09	—																					
3. Sex	1.43	0.49	0.00	0.02	—																				
4. Age	32.18	8.83	-0.02	-0.02	-0.01	—																			
5. Marital status	0.53	0.50	-0.05	-0.49	0.03	0.40	—																		
6. No. of children	0.61	0.95	-0.18	-0.34	-0.01	0.27	0.59	—																	
7. Job level	1.42	0.89	-0.09	-0.09	-0.26	0.27	0.18	0.15	—																
8. % of time worked	89.83	23.58	0.15	-0.12	-0.23	-0.16	-0.07	-0.09	0.18	—															
9. Latest base pay	75,888.69	42,355.69	-0.12	-0.04	-0.20	0.33	0.17	0.14	0.50	-0.02	—														
10. Latest bonus	0.08	0.19	-0.22	-0.11	-0.11	0.08	0.12	0.13	0.35	0.00	0.39	—													
11. Mean pay increase	0.01	0.05	-0.11	-0.06	-0.06	-0.10	-0.01	-0.01	0.04	0.06	0.03	0.07	—												
12. Performance	3.13	0.96	-0.20	-0.05	-0.07	0.07	0.10	0.11	0.26	0.08	0.19	0.42	0.05	—											
13. Performance <sup>2</sup>	10.71	6.24	-0.17	-0.04	-0.07	0.08	0.09	0.11	0.26	0.07	0.20	0.45	0.05	0.98	—										
14. Performance × Mean Pay Increase	0.05	0.15	-0.13	-0.07	-0.07	-0.11	0.00	0.01	0.06	0.07	0.05	0.11	0.96	0.13	0.13	—									
15. Performance <sup>2</sup> × Mean Pay Increase	0.16	0.54	-0.13	-0.08	-0.08	-0.10	0.01	0.02	0.08	0.07	0.06	0.15	0.88	0.19	0.19	0.97	—								
16. Performance × Latest Bonus	0.33	0.86	-0.20	-0.10	-0.10	0.08	0.11	0.12	0.33	-0.02	0.38	0.99	0.06	0.43	0.47	0.10	0.14	—							
17. Performance <sup>2</sup> × Latest Bonus	1.40	4.08	-0.18	-0.09	-0.09	0.08	0.11	0.10	0.31	-0.03	0.37	0.96	0.05	0.43	0.47	0.09	0.14	0.99	—						
18. No. of promotions	0.14	0.37	-0.08	-0.31	-0.11	-0.01	0.19	0.16	0.36	0.10	0.15	0.22	0.16	0.15	0.15	0.19	0.21	0.20	0.18	—					
19. No. of job levels promoted	0.15	0.43	-0.06	-0.29	-0.12	0.00	0.19	0.15	0.40	0.10	0.17	0.23	0.15	0.15	0.15	0.18	0.20	0.22	0.20	0.97	—				
20. Performance × No. of Promotions	0.48	1.38	-0.10	-0.29	-0.12	0.00	0.19	0.15	0.39	0.10	0.17	0.27	0.16	0.22	0.22	0.20	0.24	0.26	0.25	0.97	0.94	—			
21. Performance <sup>2</sup> × No. of Promotions	1.80	5.67	-0.10	-0.27	-0.12	0.02	0.17	0.15	0.40	0.10	0.18	0.30	0.15	0.27	0.28	0.21	0.25	0.30	0.29	0.90	0.88	0.98	—		
22. Performance × No. of Job Levels Promoted	0.53	1.61	-0.07	-0.28	-0.12	0.02	0.18	0.14	0.42	0.10	0.18	0.28	0.15	0.22	0.22	0.19	0.23	0.28	0.26	0.93	0.97	0.97	0.95	—	
23. Performance <sup>2</sup> × No. of Job Levels Promoted	1.99	6.71	-0.08	-0.25	-0.12	0.03	0.16	0.13	0.42	0.10	0.18	0.32	0.14	0.26	0.27	0.19	0.24	0.32	0.31	0.85	0.90	0.94	0.97	0.98	—

Note. N = 11,098.  $r_{.05} = .02$ . Turnover is coded 1 = quit, 0 = stay. Sex is coded 1 = men, 2 = women. Marital status is coded 0 = single and 1 = others (married, divorced, widowed, and separated).

Table 2  
*Predictor and Exponentiated Coefficients for Various Cox Regression Models*

Predictor	Different Cox regression models									
	Baseline model		Linear model		Quadratic Model No. 1: Testing performance-turnover curvilinearity		Quadratic Model No. 2: Testing pay moderation		Quadratic Model No. 3: Testing promotion moderation	
	$\beta$	$e^\beta$	$\beta$	$e^\beta$	$\beta$	$e^\beta$	$\beta$	$e^\beta$	$\beta$	$e^\beta$
Bank	1.59*	4.91	1.38*	3.96	1.40*	4.06	1.36*	3.91	1.40*	4.05
Sex	1.72*	5.56	1.71*	5.50	1.70*	5.45	1.69*	5.40	1.72*	5.58
Age	0.00*	1.00	0.00*	1.00	0.00*	1.00	0.00*	1.00	0.00*	1.00
Marital status	0.42*	1.52	0.39*	1.48	0.38*	1.46	0.40*	1.50	0.36*	1.44
No. of children	0.02	1.02	0.01	1.01	0.01	1.01	0.02	1.02	0.02	1.02
Job level	-0.08*	0.93	-0.14*	0.87	-0.14*	0.87	-0.15*	0.86	-0.01	0.99
% of time worked	0.19*	1.21	0.17*	1.19	0.17*	1.18	0.17*	1.19	0.17*	1.18
Latest base pay	0.00*	1.00	0.00*	1.00	0.00*	1.00	0.00*	1.00	0.00*	1.00
Latest bonus			-3.97*	0.02	-7.21*	0.00	0.67	1.95	-4.12*	0.02
Mean pay increase			-1.68*	0.19	1.82	6.18	3.28	26.50	-1.82*	0.16
Performance			0.43*	1.54	0.81*	2.25	0.83*	2.29	0.75*	2.12
Performance <sup>2</sup>					-0.06*	0.95	-0.06*	0.94	-0.05*	0.95
Performance × Pay Increase					-1.20†	0.30	-3.38	0.03		
Performance <sup>2</sup> × Pay Increase							0.48	1.62		
Performance × Latest Bonus					0.86*	2.37	-3.73*	0.02		
Performance <sup>2</sup> × Latest Bonus							0.61*	1.84		
No. of promotions			-1.19*	0.30	-1.52*	0.22			-1.30	0.27
No. of job levels promoted			0.80*	2.22	0.56	1.76			0.57	1.77
Performance × No. of Promotions					0.15	1.16			-0.04	0.96
Performance <sup>2</sup> × No. of Promotions									0.03	1.03
Performance × Job Levels Promoted					0.04	1.04			0.10	1.11
Performance <sup>2</sup> × Job Levels Promoted									-0.01	0.99
Model statistics <sup>a</sup>	20,049.4*		20,392.9*		20,425.4*		20,373.9*		20,404.8*	

Note. Sex is coded 1 = men, 2 = women. Marital status is coded 0 = single and 1 = others (married, divorced, widowed, and separated).  $e^\beta$  = exponentiated coefficient. Though included in all Cox regression equations, all Time × Predictor interactions have been omitted from this table for the sake of clarity.

<sup>a</sup> Global chi-square testing that all regression coefficients are 0.

†  $p \leq .10$ . \* $p \leq .05$ .

parts. Swiss employers may be less apt to poach for new talent than are U.S. employers (Cappelli, 2000; Rao & Drazin, 2002) because they tend to rely more on internal rather than on external labor markets (Brewster, 1994; Sparrow & Hiltrop, 1994).

Our examination helped to show that salary growth deters job separations among Swiss natives, which extends U.S. research (Munasinghe, 2000; Trevor et al., 1997) and adds to the paltry tests of pay-turnover relationships among nationalities other than Anglo Americans (Miller, Hom & Gomez-Mejia, 2001). We find it interesting that bonus pay lessened quits more than did pay raises. Specifically, a 1% bonus increase lowers turnover risk by 98%, whereas a 1% base-pay increment translates into an 81% reduction in quits. Because merit pay escalates labor costs over time (Milkovich & Newman, 2002), this finding indicates that one-time bonuses are more cost-effective ways to combat attrition. With few exceptions (Miller et al., 2001; Shaw, Delery, Jenkins, & Gupta, 1998), turnover studies have rarely compared the relative efficacy of different financial enticements, though such comparisons would identify how organizations can best spend payroll dollars.

It is surprising that strong contingent rewards, such as bonus pay, most inhibited resignations among superior performers in Switzerland. Though more collectivistic than Americans in outlook according to cross-cultural research (Ashkanasy et al., 2002; Hofstede, 2001; Jesuino, 2002; Szabo et al., 2002), high-potential Swiss bankers nonetheless welcome individual incentives and maintain current employment if well remunerated (Salamin, 2000). Unlike bonuses (and contrary to Trevor et al., 1997), salary increases did not entice better performers to stay, perhaps because they were meager or inequitable. After all, pay raises were much less coupled to performance ( $r = .05$ ) than were bonuses,  $r = .42$ ,  $t(11,095) = 31.08$ ,  $p < .05$ ). Indeed, Swiss bank pay increases were even weaker contingent rewards than were pay increases offered by Trevor et al.'s (1997) U.S. firm (performance-pay increase  $r = .30$ ,  $z = 15.41$ ,  $p < .05$ ). Reflecting nonperformance criteria more in Europe than in America, salary increases may also prove futile in reducing dysfunctional quits in other European establishments (Filella & Hegewisch, 1994; Milkovich & Newman, 2002; Sparrow & Hiltrop, 1994).



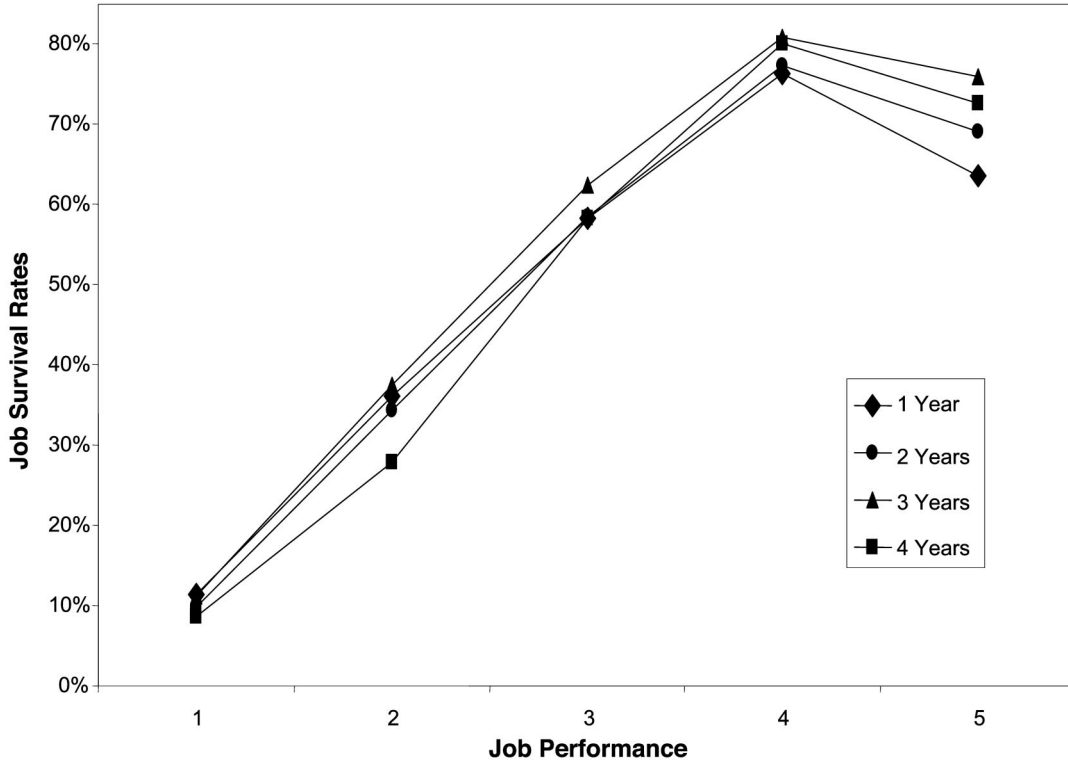


Figure 2. Survival rate as a function of job performance and firm tenure. Job performance was measured with a 5-point global performance rating, in which 5 represents highest performance.

Moreover, our promotion effects qualify and extend Trevor et al.'s (1997) results. Unlike their U.S. findings, the present study revealed that promotion progress did not act as a productivity signal in Switzerland. Rather, promotions deterred departures

among Swiss citizens, which fits their (masculine) esteem for advancement (Hofstede, 2001). Here too, signal strength of promotions may vary across culture and industry, accounting for discrepant results. Perhaps performance does not predominate

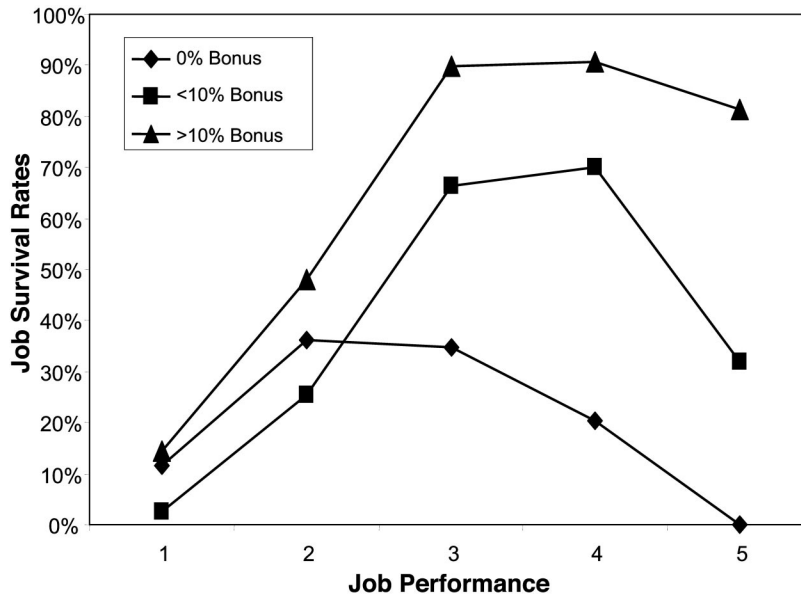


Figure 3. Two-year survival rate as a function of job performance and latest percentage bonus. Job performance was measured with a 5-point global performance rating, in which 5 represents highest performance.

promotion decisions in Swiss banks as much as in U.S. businesses (Hurley & Sonnenfeld, 1998; Rosenbaum, 1979), attenuating their capacity to convey worker quality. Switzerland is neither as achievement oriented nor as individualistic as the United States (Hampden-Turner & Trompenaars, 2000; Hofstede, 2001). Paradoxically, performance correlated with promotion rate more in the Swiss bank ( $r = .15$ ) than in the American company studied by Trevor et al. ( $r = .06$ ,  $z = 5.39$ ,  $p < .05$ ).

In contrast to promotional rate, multilevel promotions in Swiss banking do convey productivity. When beginning Swiss bankers follow the conventional career trajectory (regular, seniority-based promotions) for their profession, Swiss employers may not regard such routine promotions as extraordinary (Seltzer & Simons, 2001). By comparison, Swiss bankers who leapfrog one or more job levels during a promotion become more attractive to other prospective employers, as multilevel promotions in this career field are rare (Schütz, 2000). Additional research should ascertain whether multilevel promotions are clearer signals of employee worth in U.S. (Trevor, 2001) as well as other European labor markets (Garcia-Crespo, 2001).

In spite of stronger conditions for detecting moderators (larger sample size, small predictor-moderator correlation, inclusion of quadratic terms to avoid reciprocal suppressor effects; Aguinis & Stone-Romero, 1997; Ganzach, 1997), our test repudiated Trevor et al.'s (1997) discounting thesis, finding no Performance  $\times$  Promotions interaction. Upward movement in the Swiss bank hierarchy enhanced retention among both substandard and outstanding performers. Perhaps weak performers in Switzerland who are promoted feel duty bound to reciprocate such perceived organizational support by staying (Eisenberger et al., 2002). Alternatively, Swiss underperformers may not encounter as much implicit pressure to resign as do subpar American personnel given their stronger employment protections (Nickell, 1997) and their employers' obligation to develop them long term (Hampden-Turner & Trompenaars, 2000; Hofstede, 2001). Even when achieving early promotions, nonperformers in the United States still face threats of dismissal (Hampden-Turner & Trompenaars, 2000). Given the popularity of rank-and-yank systems (Axelrod, Handfield-Jones, & Michaels, 2002), U.S. corporations routinely rank employees from best to worst performers and subject those ranked lowest, including those excelling in the past, to potential terminations if they fail to meet ever-increasing performance standards ("Forced Rankings," 2002). To escape this fate, underperforming Americans may readily move to other firms once they become more employable through early promotions.

### *Practical Implications*

Although they well reward exceptional performers, multilevel promotions also divulge employees' worth to other employers. To disguise talented incumbents (Milgrom & Oster, 1987), businesses might adopt broad-banding practices, which collapse multiple job titles into generic job descriptions in fewer broad pay grades (Milkovich & Newman, 2002). By so doing, firms can grant valued incumbents larger pay raises (given wider pay ranges in broader pay grades) or lateral transfers to other career-enhancing assignments (along with sizable salary increases; cf. Trevor et al., 1997) without having to promote them with new job titles and communicate their ability to outside companies. In short, "firms

may . . . underinvest in information production to prevent competitors from gaining access to it" (Coff, 1997, p. 392).

Further, our Bonus  $\times$  Performance interaction seems to validate the tournament model of career mobility and its prescriptions for large pay dispersion (Bloom & Michel, 2002). Although greater institutional rewards better retain top performers, wide pay differentials may engender negative consequences, such as an exodus of moderate performers (Zenger, 1992) and weakened teamwork and shared learning (Bloom & Milkovich, 1998; Pfeffer, 2001). They may not be exemplary, but satisfactory performers do the bulk of the organization's work. Indeed, forced-ranking appraisal systems and exorbitant rewards for superb performers may create a self-fulfilling prophecy in which "labeling a few as stars will cause the majority to perform . . . below their potential" (Pfeffer, 2001, p. 253). Given the human bias for inflated self-views, regular employees may feel inequity, as excessive pay for superior performers seems disproportionate to their inputs (cf. Zenger, 1992).

### *Methodological Limitations*

Shortcomings of our research suggest promising avenues through which scholars can further illuminate the performance-exit relationship. Despite our large sample of incumbents in varied occupational fields, our findings are limited in generality because they were drawn from only a Swiss bank. Clearly, future explorations sampling other industries and countries would extend our results. To illustrate, nations forbidding recruitment agencies from doing recruiting work for private firms, such as Germany and Norway, limit the interfirm movement of good performers (Sparrow & Hiltrop, 1994). Attesting to broader generality beyond Swiss nationals, a follow-up analysis that included 2,756 foreign nationalities from other parts of Europe, Asia, and Anglo America entering the Swiss bank during the same measurement window nevertheless replicated the observed performance-turnover curve.

Based on short-tenured job incumbents, our evidence for performance-exit curvilinearity may not generalize to established incumbents. If mechanisms enhancing movement ease for high performers (who accumulate more ability indicators) and movement desirability for low performers (who face ongoing pressures to leave and fewer intrinsic rewards) continue throughout employment (Jackofsky, 1984; Trevor et al., 1997), then high and low performers with longer seniority will still depart at higher rates than will satisfactory performers. As the extremes of the performance distribution vanish over time, the performance-termination curve will flatten for those nonextreme performers staying long-term (R. Smith, personal communication, September, 27, 2000). In support, Morita, Lee, and Mowday (1989) found that initially different attrition rates of superior and marginal military cadets converged as academy tenure increased. Nonetheless, Iverson and Deery (1999) observed a cubic curve for Australian bankers averaging 9 years of firm tenure: The highest rated performers (5 on a 5-point scale) left more than did the next highest performance group rated 4.

Like Trevor et al. (1997), we relied on subjective appraisals of in-role job performance to establish the performance-turnover curve. Future replications ought to assess objective performance (Williams, 1999) and contextual performance (Van Scotter, 2000). More than this, our exploration into contingencies surrounding performance-turnover relationships considered economic rewards.

Further extensions might study relational rewards as moderators, because top talent earn other payoffs, such as more challenging work and training (Robinson, Kraatz, & Rousseau, 1994). Because Swiss natives prize intellectual autonomy, intrinsic rewards, such as growth opportunities, might also dictate how their performance relates to exits (Schwartz, 1999). Given rising popularity here and abroad (Bayo-Moriones & Huerta-Arribas, 2002; Milkovich & Newman, 2002), how team incentives affect dysfunctional quits deserves greater attention. Although group rewards drive out high performers in individualist cultures (Guthrie, 2000), they may not trigger dysfunctional exits in collectivist cultures (Gomez-Mejia & Welbourne, 1991). Then again, they may prevent entire work teams from being recruited away by competitors (Rao & Drazin, 2002).

New scholarly directions should integrate the research on turnover functionality with present-day turnover theories, such as the unfolding (Mitchell & Lee, 2001) or referents cognition (Aquino, Griffeth, Allen, & Hom, 1997) models. This line of inquiry has been preoccupied with resolving the performance–turnover relationship (McEvoy & Cascio, 1987; Williams & Livingstone, 1994). Recent tests are starting to look at mediators and moderators (Allen & Griffeth, 2001; Trevor, 2001; Williams, 1999), but this work remains grounded in March and Simon's (1958) framework. Yet modern perspectives can further enrich understanding of why and how effective and ineffective performers leave (Griffeth & Hom, 1995). To illustrate, Lee and Mitchell (1994) intimate that high and low performers follow different turnover paths: pull versus push decision paths. Because of greater exposure to job-offer shocks, high performing leavers are pulled away from their job by employment alternatives. By contrast, low performing leavers endure more negative shocks, such as harsh appraisal reviews, which push them out of their job (performance-related shocks, Allen & Griffeth, 1999). For example, Iverson and Deery (1999) reported that substandard performers confronted with unfavorable performance reviews resigned soon afterward.

In conclusion, our investigation opposes conventional views that superior performers are the foremost corporate loyalists and that pay growth and advancement prospects most bond them. As transnational corporations employ more foreign nationals, they must grapple with the challenge of keeping those they can least afford to lose. Those strategies that are effective in one country may falter when applied in another country.

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