Incentive Compensation and Promotion-Based Incentives of Mid-Level Managers: Evidence from a Multinational Corporation

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ABSTRACT: This study re-examines the hypothesis that explicit, compensation-based incentives of mid-level managers are adjusted to the level of implicit incentives provided by the possibility of moving to higher-level positions. Using compensation data from a large multinational corporation, I find that, after controlling for the position's scope and level of accountability, bonus-based incentives are stronger for managers who (1) have fewer organizational levels left to climb, (2) face weaker implicit incentives from getting promoted to the next level, and (3) face weaker implicit incentives from getting promoted to the top of the organization. The findings are consistent with the notion that implicit incentives are taken into consideration in the design of explicit incentive contracts. In particular, the results support the prediction that explicit incentives are optimally stronger in situations with weaker implicit incentives.

Keywords: *implicit incentives; incentive compensation; promotions; career concerns*.

Data Availability: *The data used in this study are proprietary.*

I. INTRODUCTION

The theoretical literature has argued that managers who face weaker promotion-based implicit incentives should optimally receive stronger explicit variable-pay-based incentives (Gibbons and Murphy 1992; Gibbs 1995). Despite well-developed theoretical arguments, empirical studies have had limited success providing evidence that implicit, promotion-based incentives are taken into consideration in the design of explicit incentive compensation contracts.[1] The present study revisits this hypothesis.

[1] Gibbs (1995) analyzes the explicit incentives of employees who have been passed over for promotion; his findings do not indicate significant differences to the explicit incentives of employees who have not been passed over for promotion. Ortin-Angel and Salas-Fumas (1998) show that managers at higher organizational levels have stronger explicit incentives. However, their findings could be attributable to the fact that managers at higher levels are in positions that have more decision-making authority.

I analyze a sample of mid-level managers who can be directly compared with respect to their positions, but who occupy different positions in their respective hierarchies and who face different promotion possibilities and rewards upon getting promoted. Thus, the setting provides an opportunity to observe variation in the strength of the implicit, promotion-based incentives while controlling for many confounding factors. In particular, the analyses in this study are based on compensation data from a large multinational corporation that operates in over 100 countries around the world. The company is organized around five main divisions, which in turn are comprised of 30 subdivisions. Each of the divisions and subdivisions is represented in many different countries. This matrix-like organizational structure allows me to directly compare positions across countries.

I find that the explicit incentives provided by the company's bonus plan are stronger for managers who are positioned at higher organizational levels, face weaker implicit incentives from getting promoted to the next level, and face weaker implicit incentives from getting promoted to the top of the organization, after controlling for the position's scope and level of accountability. These findings are consistent with the theoretical argument that implicit incentives should be taken into consideration in designing explicit incentive contracts. More precisely, the evidence presented here supports the prediction that explicit incentives are optimally stronger in situations where implicit incentives are weaker (Gibbons and Murphy 1992; Gibbs 1995).

This study makes several contributions to the incentive compensation literature. First, I extend prior empirical work in accounting that examines the incentive intensity of mid-level managers (Baiman et al. 1995; Nagar 2002) to consider the role of implicit promotion-based incentives, thereby following the call in Bushman and Smith (2001) for more research on the interactions between incentive contracting and other organizational features. In particular, the present study documents that the intensity of explicit incentives is higher in situations that pose weaker implicit, promotion-based incentives.

Second, this study contributes to prior studies that look at the interplay between explicit incentive contracts and implicit incentives arising from the possibility of career advancement (e.g., Kahn and Sherer 1990; Gibbons and Murphy 1992). Those studies primarily focus on the length of the manager's career horizon as the measure of the strength of implicit incentives. This study adds to that literature by analyzing an innovative setting that provides the opportunity to isolate the strength of implicit, promotion-based incentives. The analyses in this study provide additional empirical evidence on the importance of career-based incentives in contract design.

Arguably most closely related to this study, Gibbs (1995) analyzes the compensation-based incentives of employees who have been passed over for promotion. The author does not find significant differences between the explicit incentives of employees who have been passed over for promotion and those of employees who have not been passed over for promotion. Gibbs (1995) hypothesizes that the lack of evidence could be attributable to a centrally administered incentive scheme, which may not allow for variation at the employee level. In contrast to the setting analyzed by Gibbs (1995), the empirical setting in this study provides the following advantages. First, the data set used in this study includes explicit information on the parameters of the incentive contracts, such as the expected bonuses, which allows for a more precise measurement of the strength of the bonus-based incentives. Second, although Gibbs (1995) and the present study both analyze data from a single company, in my empirical setting, the explicit incentives are determined by the individual country organizations. Thus, my analysis circumvents the issue of a centrally administered incentive plan.

The ability to generalize the results of this study is limited by the analysis of a single firm. However, the research site chosen for this study offers several advantages for empirical investigation of the role of implicit, promotion-based incentives in incentive contracts provided to mid-level managers. First, the organizational structure of the company, combined with the company's

job-rating project, allows for a direct comparison of managers in different countries. Second, the compensation practices in the different countries reflect the local labor markets and, thus, are not specific to the company that is studied. Finally, the incentives provided to the managers through the company's bonus plan are not based on company-wide guidelines, but are decided by the individual country organizations.

The next section develops the hypotheses. Section III describes the research site, the sample and the measures used in the empirical analyses. Section IV discusses the research design and the empirical results. Section V provides a summary and conclusion.

II. HYPOTHESIS DEVELOPMENT

This study analyzes the incentives of mid-level managers who work in a corporate hierarchy. In particular, I investigate whether explicit incentives that are provided by variable-pay-based schemes are adjusted, based on the level of implicit incentives that are provided by the possibility of moving to higher-level positions in the organization.[2]

The argument that explicit, variable-pay-based incentives are optimally stronger in situations where implicit, promotion-based incentives are weaker has been formalized in career concerns models that allow for the presence of explicit incentive contracts (Gibbons and Murphy 1992; Gibbs 1995).

In particular, Gibbons and Murphy (1992) investigate optimal (explicit) incentive contracts when the agent faces implicit incentives from the possibility of career advancement in a competitive external labor market. The analysis in Gibbons and Murphy (1992) is based on a multiperiod model with a single performance measure, which is a function of the agent's innate ability and the agent's effort that is provided during the period. The performance metric is used in the explicit incentive contract and is also used by the external labor market to update beliefs about the agent's ability. The compensation that is offered to the agent in the second period in the competitive labor market is increasing in the market's assessment of his/her ability. Implicit incentives arise in this setting because ability and effort cannot be fully separated and the agent has the incentive to increase effort to influence the labor market's beliefs about his/her ability.[3] The implicit incentives provided by career concerns are stronger when future compensation is more valuable to the agent as is the case when the agent is further away from retirement. Given this setup, the analysis shows that the optimal explicit incentives provided by the agent's compensation scheme are decreasing in the implicit incentives provided by career concerns.

Although Gibbons and Murphy (1992) examine implicit incentives that arise in a competitive external labor market, their analysis can also be interpreted in the light of an internal labor market, as it is discussed by the authors on pages 469–470. In particular, career concerns also arise in an internal labor market if the employee's supervisor cannot perfectly distinguish between the employee's ability and his/her effort. The authors argue that in an internal labor market setting explicit incentives should be strongest for workers with weak promotion-based incentives such as workers at the top of the corporate hierarchy.

Consistent with the result in Gibbons and Murphy (1992), Gibbs (1995), using a single-period model, shows that the explicit incentives provided by a compensation scheme are optimally stronger when the implicit incentives provided by the possibility of being promoted are weaker. In Gibbs' (1995) model, the promotion decision depends on the outcome of the performance measure, which again provides incentives for the agent to increase his/her effort.

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[2] Promotion-based incentives are one source of implicit incentives. Other forms of implicit incentives include incentives that are based on non-contractible performance measures (see, e.g., Ederhof 2010).

[3] In equilibrium, the market's conjecture about the worker's ability is correct but the agent will exert higher effort than in the absence of career concerns because the market discounts his/her effort.

An important feature of the models in Gibbons and Murphy (1992) and Gibbs (1995) is that the strength of the implicit incentives is not a choice variable for the principal. In other words, both models characterize how the optimal explicit incentive contract should be designed for a given level of implicit incentives. This is in contrast to Lazear and Rosen (1981) and Rosen (1986) who analyze how the principal should optimally choose the compensation structure across hierarchical levels in order to optimize the resulting implicit incentives. It seems reasonable to assume that, in my empirical setting, the implicit incentives provided by the possibility of promotion are determined exogenously with respect to the manager's compensation scheme. The company investigated in this study is organized along five main divisions with operations in many different countries. The purpose of the local units of a division in the different countries is to implement the global strategy of the division in the individual countries. The organizational structure of the local units is largely standardized. For example, all worldwide local units of a division are organized around a local unit manager whose authority and responsibilities follow worldwide guidelines. Thus, it seems unlikely that the company adapts its organizational form in a given country to the local compensation structure. In other words, it seems unlikely that the company structures its organizational form around the local labor market in order to optimize the implicit incentives resulting from the possibility of career advancement. Moreover, the compensation paid to the local managers is dictated by the local labor market conditions (Gibbs 1995).

Broadly speaking, the result of the analyses in Gibbons and Murphy (1992) and Gibbs (1995) is that optimal explicit incentives are decreasing in the strength of the implicit incentives provided by the possibility of career advancement. With respect to the setting of a corporate hierarchy, the strength of the implicit incentives is determined by the extent to which additional effort changes the probability of getting promoted and the "prize" that the manager is awarded upon promotion. The prize of getting promoted, in turn, is comprised of the immediate increase in compensation and the option value of being eligible for future rewards deriving from further promotions (Rosen 1986; Gibbs 1995).

An important determinant of the strength of the implicit incentives that a manager faces is his/her hierarchical position, because managers who are closer to the top of their organization have "truncated" promotion paths. Thus, high-rank managers are expected to have stronger explicit incentives. However, managers who are at higher organizational levels are likely to have stronger explicit incentives due to their job characteristics. In particular, managers at higher hierarchical levels are likely to have higher marginal productivities with respect to their effort (Baker and Hall 2004). Moreover, managers at high organizational ranks are likely to have more decision-making authority and to have a larger span of control (Prendergast 2002; Nagar 2002; Wulf 2007). In order to isolate the strength of implicit incentives, I use various control variables to capture variation in such job characteristics in the empirical analysis. The hypothesis can be stated as follows (expressed in the alternative form):

Hypothesis: The explicit incentives provided by the variable-pay scheme are decreasing in the strength of the promotion-based implicit incentives that the manager faces, *ceteris paribus*.

III. RESEARCH SETTING AND MEASURES

Research Site

I test the hypothesis using data from a large multinational engineering corporation that operates in approximately 100 countries. The company primarily sells technology to utility and industry customers. The company's operations are organized into five main divisions, which in turn are

comprised of 30 subdivisions.[4] The divisions are the central building blocks of the organization; they run the business lines from R&D to sales and they have primary P&L responsibility. For each of the divisions and subdivisions, a manager is responsible for the unit's worldwide operations. For each country in which a unit operates, a local manager is responsible for the unit's local operations. In addition, the countries have some infrastructure in the form of a country management team and support functions such as human resources, finance, legal, and communication.

I test the hypothesis by comparing the incentives of the local managers in the different countries. In particular, the sample is comprised of all local managers who are in positions that are part of their local organizational "ladders," which go all the way to the top of the organizations. In other words, the sample includes managers who hold positions that make them eligible to eventually rise to the top of their respective organization. The sample excludes positions like IT and legal, which constitute support functions at the company and for which the promotion possibilities of the positions' holders are limited.[5]

The Company's Job-Rating Project

In 2005, with the help of a consulting firm, the company started a project of assigning numerical ratings to the top positions in the company. The company initiated the project for the following reasons. First, and important for this study, the company wanted to generate a picture of the organization's hierarchy that reflects managers' promotion paths and that is independent of existing job titles.[6] In interviews with the author, the company contact emphasized that employees often have mental models of the company hierarchy that is based on job titles that do not correspond to the true hierarchy of the organization. The company hopes that the job-rating project will improve the promotion process, in that it will facilitate, for example, promoting people to jobs that have a higher rating but that have the identical title as the employee's current position.

Second, the company wanted to gain an understanding of how comparable positions are compensated in the different countries. In interviews with the author, the company contact emphasized that, to that end, a key aspect of the job-rating project was that the ratings were not influenced by the current position holder's compensation. Moreover, in order to facilitate comparability across countries, the ratings were assigned based on a standardized scheme, which the consulting company developed based on an initial pilot study.

The ratings are assigned to a position, and not to the person currently holding the position. Thus, the ratings are independent of the current manager's performance. The ratings are assigned based on a combination of factors primarily capturing the position's scope and level of accountability. In particular, a position's scope is captured by the number of employees that a manager oversees and the revenue figure for which the manager is responsible. The level of accountability is largely captured by the decision-rights that are in the manager's hand.

In interviews with the author, the company contact emphasized that promotions occur from one rating category to the next. In 2008, the company completed rating all positions that fall into the top ten rating categories. The position of the chief executive officer is assigned a rating of 1; an example of a job with a rating of 10 is a manager who is in charge of the operations of a local subdivision with revenue of $22 million and 40 employees.

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[4] Subsequently, I collectively refer to divisions and subdivisions as "units."

[5] The classification of positions into "organizational ladder" and "support functions" is based on extensive interviews with the company contact.

[6] The notion that the organization's hierarchy is based on promotion paths is consistent, for example, with the way the hierarchy in Baker et al. (1994) and Gibbs (1995) is defined.

The Company's Incentive System

Aside from a fixed salary, all managers in the sample are eligible for a bonus payment. The company has guidelines that pertain to all worldwide participants in the bonus plan. In particular, the performance measures used in the bonus plan, the weight that is placed on firm-wide versus divisional measures, and aspects of the pay-performance relation must follow the company's guidelines. In contrast, and important for this study, the company does not have worldwide guidelines with respect to participants' expected bonuses—i.e., the compensation that is paid out in the form of a bonus when the performance meets expectations. In other words, the company does not have guidelines with respect to the percentage of a participant's cash compensation that is variable. The level of the expected bonus, which is typically expressed as a percentage of base salary, is determined by the respective country management. Some countries interpret the bonus plan as a guaranteed 13th-month salary for all participants. These countries are excluded from the analysis.

In addition to the bonus plan, the company awards stock options to the top employees of the organization who hold positions that are largely in the top seven rating categories. In contrast to the company's bonus plan, all aspects of the stock option plan are centrally administered by the company's headquarters and follow worldwide company guidelines. In awarding stock options in 2008, the company made use of the newly available job ratings. In particular, the number of options awarded to managers in a given job category is fixed for a given job-rating category.

Sample and Measures

The analyses in this study are based on a data set that contains information for 1,151 managers in 14 countries that have been assigned ratings between 2 and 10. The data are largely for the year 2008. Table 1 shows the distribution of the sample across different job-rating categories and countries.

Table 2 and Figure 1 summarize compensation levels across organizational levels for the different countries. Specifically, the table and graph show how the median total cash compensation, which is calculated by summing base salary and expected bonus, varies across job categories in the different countries.

The compensation figures are expressed relative to the median compensation levels at job-rating category 10 in the respective country, which are normalized to 1.00.[7] As one would expect, for the most part, the values of the compensation ratios are increasing as managers move to higher-level job categories. Visual inspection of Figure 1 suggests that the overall pay structures can be characterized as convex, which is consistent with findings in prior studies and the prediction from tournament theory (e.g., Lambert et al. 1993; Rosen 1986). Table 2 and Figure 1 also indicate substantial variation in the pay structures across countries. For example, the ratio of median pay levels in category 5 to category 10 is approximately 2 in Germany, but more than 4 in the United Kingdom.

Explicit Incentives

Testing the hypothesis requires a measure of the explicit incentives provided by the compensation scheme. As discussed above, stock options are awarded uniformly across countries and the number of options awarded is fixed for a given job-rating category. Therefore, I focus attention on the company's bonus plan. Conceptually, the strength of the incentives provided by a bonus plan is reflected in how much the agent's compensation increases when s/he increases his/her effort. As discussed above, the company has worldwide guidelines with respect to certain parameters of the

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[7] Confidentiality reasons preclude me from reporting dollar amounts.

TABLE 1

Distribution of the Sample across Different Rating Categories and Countries

Country	Rating										Total
	1	2	3	4	5	6	7	8	9	10	
Sweden	0	1	0	1	5	9	15	40	78	99	248
Finland	0	0	1	0	0	5	8	12	34	37	97
Germany	0	0	1	0	1	3	9	30	32	18	94
Italy	0	0	1	1	3	5	10	21	23	28	92
Switzerland	0	0	0	1	3	6	6	24	42	92	174
Norway	0	0	0	0	2	4	3	9	15	18	51
Poland	0	0	0	0	1	0	0	6	5	11	23
Russia	0	0	0	0	1	1	3	6	5	12	28
Spain	0	0	0	0	2	2	1	5	12	21	43
United Kingdom	0	0	0	0	1	2	7	8	17	12	47
United States	0	0	0	0	4	17	26	40	63	74	224
Denmark	0	0	0	0	0	1	1	3	5	1	11
New Zealand	0	0	0	0	0	1	0	1	3	1	6
Turkey	0	0	0	0	0	1	1	4	2	5	13
Total	0	1	3	3	23	57	90	209	336	429	1,151

TABLE 2

Median Pay Levels across Job-Rating Categories for the Different Countries
(expressed relative to the median pay level for category 10 in the respective country)[a]

Job-Rating Category	Sweden	Finland	Germany	Italy	Switzerland	Norway	Poland
2	5.93	—	—	—	—	—	—
3	—	5.69	3.26	—	—	—	—
4	3.81	—	—	2.77	3.40	—	—
5	2.80	—	2.05	2.42	2.34	2.50	3.76
6	1.98	2.45	1.64	2.80	2.06	1.66	—
7	1.65	1.65	1.46	2.29	1.80	1.69	—
8	1.25	1.31	1.15	1.43	1.29	1.40	1.69
9	1.08	1.23	1.04	1.27	1.07	1.12	1.24
10	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Job-Rating Category	Russia	Spain	United Kingdom	United States	Denmark	New Zealand	Turkey
2	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—
5	3.81	2.89	4.35	3.16	—	—	—
6	3.28	2.06	3.24	1.83	3.38	2.88	4.39
7	1.94	1.70	1.77	1.63	1.16	—	4.31
8	1.60	1.48	1.54	1.38	1.10	1.66	2.71
9	1.38	1.15	1.08	1.11	0.79	1.24	1.57
10	1.00	1.00	1.00	1.00	1.00	1.00	1.00

[a] Pay is the sum of the manager's base salary and his/her expected bonus. Expatriates are excluded from the statistics.

bonus plan. In particular, the payoff function is linear and an increase in performance leads to a fixed percentage increase in bonus payout. For example, the bonus payout for the maximum performance is twice as much as the bonus payout for the target performance for all plan participants. Therefore, variation in the expected bonus reflects variation in the strength of the incentives provided by the bonus plan. Thus, I measure the strength of the explicit incentives provided by the bonus scheme using the ratio of the target bonus to base salary (*TB*) (Indjejikian and Nanda 2002).

Implicit Incentives

The hypothesis predicts that managers who face stronger promotion-based implicit incentives have lower variable-pay-based explicit incentives. As discussed above, the strength of the implicit incentives is determined by the extent to which additional effort changes the probability of getting promoted and the "prize" that the manager is awarded upon promotion. The prize of getting promoted, in turn, is comprised of the immediate increase in compensation and the option value of being eligible for future rewards deriving from further promotions (Rosen 1986; Gibbs 1995). I use different measures to capture the strength of the implicit incentives.

First, as argued above, managers at higher hierarchical positions in their respective organizations have truncated promotion paths and are thus expected to have lower implicit incentives. In order to capture a manager's hierarchical position in his/her country organization, I include the job

FIGURE 1
(Median Cash Pay at Respective Level/Median Cash Pay at Level 10)[a]

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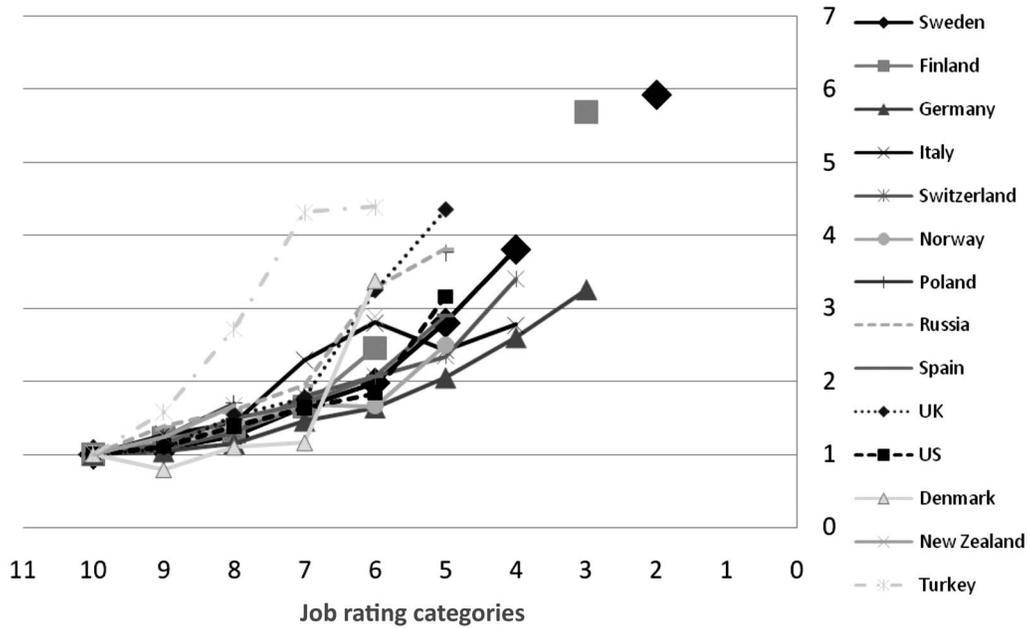
[a] Expatriates are excluded from the statistics.

rating of the highest-ranking manager in the respective country, *HIGHESTPOSITION*, in the analysis.

As described above, the strength of the promotion-based implicit incentives is a function of the prize that the manager receives upon promotion and the extent to which additional effort changes the probability of getting promoted. I develop two additional measures to capture those features.

It is unobservable how additional effort changes the probability of getting promoted. However, Gibbs (1995, 1996) has shown that the derivative of the probability of getting promoted with respect to the agent's effort is increasing in the promotion probability as long as the promotion probability is below one-half (also see Campbell 2008). Interviews with the company contact confirmed that it can reasonably be assumed that, for the managers in my sample, the implicit incentives are increasing in the promotion probabilities, as the promotion rates at the company are sufficiently low.

Data limitations prevent the direct calculation of the promotion probabilities in the individual job categories. However, the company contact emphasized that dismissals and demotions are fairly rare in this company (also see Gibbs 1995). Thus, I employ the median tenure at the individual job levels as a proxy for promotion probabilities. More precisely, I use the inverse of the median tenure in the manager's current job-rating category to capture promotion possibilities.

Focusing on the manager's immediate promotion possibility, I construct a measure that takes the compensation differential between the manager's current job and the next-higher job-rating category, and the manager's chance of being promoted to that next level into consideration. Specifically, I compute the ratio of the median expected cash compensation for the next-higher job-rating category to manager's expected cash compensation (in his/her current job), both for the manager's respective country. I then multiply that ratio by the inverse of the median tenure in the manager's current job-rating category in the respective country. The measure is denoted by *IMPLICITNEXT*.

Similarly, consistent with Rosen (1986), I develop a measure that takes the median tenure and compensation level at the manager's current job and at each higher-level category in the respective organization into consideration. Specifically, I calculate the sum of the discounted compensation differentials between the manager's current job and the top of the respective organization. The compensation differential between two levels is discounted by the cumulative probability of being promoted to the respective level, where the probability of promotion is again proxied for by the inverse of the median tenure. I denote this measure as *IMPLICITTOP*.

Control Variables

Incentive compensation practices vary systematically across countries. As discussed in more detail in the research design section, I employ a measure that captures the general incentive intensity in the respective country. Specifically, I use a measure that is provided by the company's consulting company that captures the median incentive intensity for mid-level managers for a large number of industrial companies in the different countries.[8]

Prior literature has argued that division managers who have more decision-making authority receive more incentive-based pay because the potential for misuse is stronger if managers have more authority (Prendergast 2002; Nagar 2002; Wulf 2007). I use the job rating assigned to the manager's position, *CATEGORY*, as a proxy for the manager's decision-making authority. As described above, the ratings are assigned based on factors that primarily capture the positions' scope and level of accountability, an important determinant of which is the manager's level of decision-making authority.

A standard result in agency theory is that managers who have a higher marginal productivity with respect to effort should optimally have stronger explicit incentives (Baker and Hall 2004). In order to control for differences in managers' marginal productivities, following Wulf (2007), I include a measure of the relative importance of the manager's unit in the analyses. In particular, I measure a unit's relative importance by the ratio of the sales of the unit that the manager is affiliated with to the total sales in the respective country (*RSALES*).[9]

Theory suggests that more noise in the performance measures increases the risk that the manager is exposed to and the prediction is that incentives are lowered when the risk exposure is higher (Holmstrom 1979).[10] As described above, the performance measures that are used in the bonus plans follow company guidelines in the sense that, worldwide, managers in the same position have the same performance measures in their bonus plan. Thus, managers in similar positions in different countries could be exposed to different levels of noise because they operate in different environments. Due to data limitations, I rely on the measure capturing the general incentive intensity in the different countries in order to capture differences in noise levels.

I also include the expected growth in sales in the regression analysis. I measure expected growth in sales by the ratio of budgeted sales for 2008 to the actual sales number for 2007

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[8]　I do not report descriptive statistics on this measure due to confidentiality reasons.
[9]　Also see Baiman et al. (1995).
[10]　Also see Prendergast (2000) for arguments why the relationship between uncertainty and incentives could be positive.

(*SALESGROWTH*). This measure can be interpreted as a proxy for the firm's investment opportunities. Prior literature has argued that firms with greater growth opportunities employ compensation contracts with greater incentive intensity. Smith and Watts (1992) argue that the observability of managers' actions decreases with the firm's growth opportunities. In contrast, the actions of managers in low-growth firms are argued to be more observable because these actions are largely focused on the maintenance and supervision of existing assets (Gaver and Gaver 1993; Holthausen et al. 1995).[11]

Agency theory has also argued that the optimal incentive intensity depends on the level of monitoring (e.g., Jensen and Meckling 1976; Prendergast 2002; Liang et al. 2008). In particular, Jensen and Meckling (1976) argue that incentive contracting and monitoring are alternative solutions to the moral hazard problem. As discussed above, the company is organized around five main divisions, which in turn are comprised of 30 subdivisions. The individual country organizations are structured around a country management team. Moreover, the local divisions and subdivisions are led by local division and subdivision managers. It seems reasonable to expect that direct monitoring of the actions of managers who are at the top of an organization is more difficult than monitoring the actions of lower-level managers. In order to capture such differences, I include an indicator variable, *TOPMANAGER*, indicating whether a manager is a highest-ranking manager in his/her country. Moreover, it seems plausible that local division managers do not receive as much monitoring as managers who are at lower organizational levels. Specifically, local division managers lead the respective business lines in their country. Thus, they are the highest-ranking managers in their respective fields of expertise. In order to capture potential differences in the monitoring of local division managers, I include an additional indicator variable, *DIVMANAGER*, in the tests. All measures are defined in Table 3.

Descriptive Statistics

Of the 1,151 managers in the sample, 18 are expatriates. In the company, expatriates are compensated based on the norms in their home country with certain adjustments, such as for hardship and allowance. Thus, expatriates are excluded from the analyses. With the exception of Italy, the expatriates hold lower-level positions, with ratings between 6 and 10. In Italy, the highest-ranking manager is an expatriate, which precludes calculation of the variable *IMPLICIT-TOP* for the observations from that country.

Table 4 provides descriptive statistics for the variables used in the analysis, calculating such statistics for each job-rating category using the pooled sample across all countries.

The mean (median) values for the dependent variable in the analyses, *TB*, which captures the ratio of (target bonus/salary), are 0.18 (0.14) for managers at level 10 and 0.39 (0.39) for managers who hold positions in job-rating category 3. Overall, the descriptive statistics indicate an increasing trend of *TB* as one moves to higher-level positions, which is consistent with the expectation that managers with more decision-making authority receive more incentive-based pay. However, the mean and median values for *TB* are fairly constant for job-rating categories 2 through 5. One issue that should be kept in mind is that the job-rating categories are not distributed evenly across countries and that there are country-specific differences in the level of incentive compensation. The finding that the mean and median values for *TB* are fairly constant for job-rating categories 2 through 5 could also be influenced by the fact that there is no one-to-one mapping between job-rating categories and hierarchical levels. Specifically, each of the categories 2 through 5

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[11] Lambert and Larcker (1987) explain why the relationship between expected sales growth and the strength of the incentives could also be negative.

TABLE 3

Measures

Measure Reflecting the Strength of Explicit Incentives

TB_{ij} (target bonus$_i$/base salary$_i$); both for manager i.

Measures Reflecting the Strength of the Implicit Promotion-Based Incentives

$HIGHESTPOSITION_j$ job-rating category of the highest-ranking manager in country j.

$IMPLICITNEXT_{ij}$ $[$(median expected cash pay$_{jt-1}$/expected cash pay$_i$) $*$ (1/median tenure$_{jt}$)$]$: the ratio of the median cash pay (base salary + expected bonus) for job-rating category $t-1$ in country j to the manager's expected cash pay in his/her current position.

$IMPLICITTOP_{ij}$ (median expected cash pay$_{jt-1}$ / expected cash pay$_i$)$*$(1 / median tenure$_{jt}$)

$$+ \sum_{a=1}^{t-1} [(\text{median expected cash pay}_{ja-1} / \text{median expected cash pay}_{ja})$$

$$* \prod_{b=0}^{t-a} (1 / \text{median tenure}_{ja+b})]:$$ sum of the discounted compensation differentials

between the manager's current job-rating category t and the top of the respective country organization j.

Control Variables

$CATEGORY_{ij}$ job rating assigned to manager i's position.

$RSALES_{ij}$ (sales of unit k/total sales of country j that unit k is located in).

$SALESGROWTH_{ij}$ (budgeted sales for 2008$_k$/actual sales for 2007$_k$); both for unit k in country j.

$TOPMANAGER_{ij}$ indicator variable that is equal to 1 if $CATEGORY$ indicates that the manager in job-rating category t is a highest-ranking manager in country j, 0 otherwise.

$DIVMANAGER_{ij}$ indicator variable that is equal to 1 if manager i is in charge of a local division, 0 otherwise.

includes a high percentage of managers who are highest-ranking in their respective country organization.

The descriptive statistics for *IMPLICITNEXT* suggest that the implicit incentives provided by the prospect of solely moving up one job category are largely increasing in the hierarchical level. Specifically, the mean (median) values for *IMPLICITNEXT* are 0.38 (0.37) for managers at level 10 and 0.61 (0.63) for managers who hold positions in job-rating category 5. This trend is consistent with the convex pay structures documented in Table 2 and Figure 1.

The variable *IMPLICITTOP* captures the implicit incentives provided by the possibility of moving to the top of the respective organization. Although the descriptive statistics largely indicate an upward trend with respective to the mean levels as one moves up the organizational hierarchy, they do not suggest a strong trend with respect to the median values. Specifically, with the exception of the figure for job-rating category 6, the median values of *IMPLICITTOP* are around 0.60 to 0.65 across categories. This finding is consistent with the notion in tournament theory that convex pay structures result in constant implicit incentives throughout the hierarchy (Rosen 1986). Broadly speaking, the intuition is as follows. On the one hand, managers who are further down in the hierarchy face a higher number of organizational levels that they could potentially climb, which increases the number of terms that comprise the option value, which

TABLE 4

Descriptive Statistics[a]

	n	Mean	Std.	Q1	Median	Q3
CATEGORY = 2						
TB	1	0.38	NA	0.38	0.38	0.38
IMPLICITNEXT	NA	NA	NA	NA	NA	NA
IMPLICITTOP	NA	NA	NA	NA	NA	NA
TOPMANAGER	1	1.00	NA	1.00	1.00	1.00
DIVMANAGER	1	1.00	NA	1.00	1.00	1.00
RSALES	1	0.92	NA	0.92	0.92	0.92
SALESGROWTH	1	1.19	NA	1.19	1.19	1.19
CATEGORY = 3						
TB	2	0.39	0.02	0.38	0.39	0.40
IMPLICITNEXT	NA	NA	NA	NA	NA	NA
IMPLICITTOP	NA	NA	NA	NA	NA	NA
TOPMANAGER	2	1.00	NA	1.00	1.00	1.00
DIVMANAGER	2	1.00	0.00	1.00	1.00	1.00
RSALES	2	0.93	0.00	0.92	0.93	0.93
SALESGROWTH	2	1.15	0.01	1.14	1.15	1.16
CATEGORY = 4						
TB	3	0.38	0.14	0.25	0.38	0.53
IMPLICITNEXT	NA	NA	NA	NA	NA	NA
IMPLICITTOP	NA	NA	NA	NA	NA	NA
TOPMANAGER	3	0.33	0.58	0.00	0.00	1.00
DIVMANAGER	3	1.00	0.00	1.00	1.00	1.00
RSALES	3	0.40	0.44	0.13	0.16	0.92
SALESGROWTH	3	1.27	0.23	1.12	1.15	1.53
CATEGORY = 5						
TB	22	0.38	0.10	0.34	0.38	0.38
IMPLICITNEXT	3	0.61	0.12	0.48	0.63	0.72
IMPLICITTOP	3	0.61	0.12	0.48	0.63	0.72
TOPMANAGER	23	0.48	0.51	0.00	0.00	1.00
DIVMANAGER	23	0.22	0.42	0.00	0.00	0.00
RSALES	23	0.41	0.40	0.10	0.24	0.94
SALESGROWTH	23	1.15	0.18	1.08	1.10	1.19
CATEGORY = 6						
TB	52	0.36	0.25	0.23	0.30	0.40
IMPLICITNEXT	9	0.83	1.14	0.24	0.29	1.47
IMPLICITTOP	9	0.94	1.08	0.40	0.46	1.55
TOPMANAGER	55	0.05	0.23	0.00	0.00	0.00
DIVMANAGER	55	0.11	0.31	0.00	0.00	0.00
RSALES	43	0.36	0.37	0.10	0.16	0.67
SALESGROWTH	43	1.13	0.14	1.07	1.12	1.17
CATEGORY = 7						
TB	85	0.31	0.23	0.17	0.25	0.40
IMPLICITNEXT	18	0.73	0.55	0.33	0.60	0.86
IMPLICITTOP	18	1.08	1.77	0.44	0.60	0.86

(continued on next page)

TABLE 4 (continued)

	n	Mean	Std.	Q1	Median	Q3
TOPMANAGER	85	0.00	0.00	0.00	0.00	0.00
DIVMANAGER	85	0.05	0.21	0.00	0.00	0.00
RSALES	74	0.20	0.28	0.03	0.10	0.21
SALESGROWTH	74	1.26	0.86	1.06	1.12	1.19
CATEGORY = 8						
TB	203	0.26	0.20	0.15	0.21	0.29
IMPLICITNEXT	54	0.43	0.18	0.30	0.45	0.56
IMPLICITTOP	54	0.71	0.23	0.53	0.64	0.93
TOPMANAGER	208	0.00	0.00	0.00	0.00	0.00
DIVMANAGER	208	0.04	0.20	0.00	0.00	0.00
RSALES	174	0.25	0.33	0.04	0.12	0.26
SALESGROWTH	174	1.14	0.18	1.06	1.11	1.17
CATEGORY = 9						
TB	323	0.20	0.12	0.11	0.16	0.23
IMPLICITNEXT	105	0.41	0.15	0.28	0.41	0.49
IMPLICITTOP	105	0.64	0.15	0.53	0.65	0.71
TOPMANAGER	331	0.00	0.00	0.00	0.00	0.00
DIVMANAGER	331	0.01	0.09	0.00	0.00	0.00
RSALES	279	0.19	0.26	0.04	0.10	0.20
SALESGROWTH	279	1.13	0.19	1.04	1.12	1.18
CATEGORY = 10						
TB	404	0.18	0.09	0.11	0.14	0.20
IMPLICITNEXT	179	0.38	0.08	0.33	0.37	0.41
IMPLICITTOP	179	0.58	0.09	0.55	0.58	0.62
TOPMANAGER	425	0.00	0.00	0.00	0.00	0.00
DIVMANAGER	425	0.00	0.07	0.00	0.00	0.00
RSALES	334	0.26	0.34	0.03	0.12	0.26
SALESGROWTH	334	1.16	0.72	1.07	1.12	1.19

[a] See Table 3 for variable definitions. The descriptive statistics are calculated for the pooled sample across countries, excluding 18 expatriate observations.

determines the implicit incentives. On the other hand, managers who are further down in the organization face lower compensation increases by moving up the initial levels, which are weighted most heavily in the computation of the option value.

The variable *TOPMANAGER* indicates whether a manager is among the highest-ranking managers in the respective country organization. Table 1 shows that the highest-level managers are concentrated in job-rating categories 2 through 6. Similarly, the descriptive statistics for *DIVMANAGER* indicate that the proportion of managers who are in charge of a local division is higher in the higher-level job-rating categories.

RSALES captures the relative importance of the division or subdivision with which a manager is affiliated, measured by the ratio of the unit's sales divided by the total sales of the respective country. As one would expect, the summary statistics for *RSALES* largely indicate that managers in lower job-rating categories are affiliated with smaller units. The median values for *RSALES* are

around 0.11 for categories 7 through 10, around 0.20 for categories 4 through 6, and over 0.90 for categories 2 and 3.

The median values for *SALESGROWTH*, which are measured by the ratio of budgeted sales for 2008 to actual sales for 2007 for the respective unit, largely indicate an upward trend as managers move to higher-level job categories. Managers in categories 2 through 4 are in charge of units that experience growth between 15 percent and 20 percent; in contrast, the expected unit growth for managers in categories 5 through 10 is around 11 percent. This finding is consistent with the notion that units that face higher growth opportunities are managed by higher-level managers who are delegated more decision-making authority.

IV. ANALYSES AND RESULTS

Strength of Implicit Incentives

The aim of this study is to analyze whether explicit incentives that are provided by variable-pay-based schemes are adjusted, based on the level of implicit incentives that are provided by the possibility of moving to a higher-level position in the hierarchy. The overall strategy that I use to address this question is to compare the explicit incentives of the local managers in the different countries. Given the organizational structure of the company, managers in the same job-rating category can reasonably be assumed to hold fairly comparable positions across countries. However, there is likely to be substantial variation in the strength of the implicit incentives that managers in different countries face due to the following reasons.

First, as can be observed from Table 1, the hierarchical structures differ across countries. Specifically, the countries vary with respect to the job category of the highest-ranking manager. In interviews with the author, the company contact emphasized that these differences are largely attributable to differences in the sizes of the units in the individual countries. Managers who have more organizational levels left "to climb" have stronger implicit incentives, all else equal.

Second, variation in the pay structures across job-rating categories and variation in the probabilities of getting promoted in the different countries can also result in differences in the implicit incentives that the managers face. Managers who face larger compensation increases upon being promoted and who have higher chances of getting promoted face stronger implicit incentives, *ceteris paribus*.

In order for the managers' implicit incentives to be determined by features of their local country organizations, their career paths inside this company have to be confined to their respective countries. This assumption seems reasonable for this setting for the following reason. The company pursues a strategy of being "multi-domestic," in the sense that the individual country organizations and their managers are expected to be very familiar with the local markets, governments, and infrastructures in order to be able to respond quickly to changes in the local environments. Part of this strategy is to employ local managers. Inspection of the data reveals that, aside from the 18 expatriates discussed above, the vast majority of managers are local. The company's use of predominantly domestic managers is consistent with other examples in the literature (Brickley et al. 2009). Thus, the individual country organizations appear to be fairly segregated, making it reasonable to assume that the majority of the managers in the sample do not move between countries.

Table 5 reports the correlation among the variables used in the analysis. *TB*, which captures the strength of the explicit incentives, is significantly positively correlated with the job-rating category of the highest-ranking manager in the respective country, but is not significantly correlated with either of the measures capturing the strength of the implicit incentives (*IMPLICITNEXT*, *IMPLICITTOP*). With respect to these preliminary findings, one should keep in mind that it is likely that incentive compensation practices systematically vary across countries for unobserved reasons. As expected, there is a significant correlation between *TB* and measures that

TABLE 5

Correlations among the Variables[a]

	TB	HIGHEST-POSITION	IMPLICIT-NEXT	IMPLICIT-TOP	CATEGORY	Log(RSALES)	SALES-GROWTH	TOP-MANAGER	DIV-MANAGER
TB									
HIGHESTPOSITION	0.46***								
IMPLICITNEXT	0.01	0.09*							
IMPLICITTOP	−0.03	0.09*	0.76***						
CATEGORY	−0.36***	−0.03	−0.32***	−0.22***					
Log(RSALES)	−0.03	−0.03	0.20***	0.07	−0.11***				
SALESGROWTH	−0.09**	−0.16***	0.04	0.03	−0.06*	0.04			
TOPMANAGER	0.23***	0.10***	NA	NA	−0.40***	0.16***	−0.01		
DIVMANAGER	0.19***	0.05	0.20***	0.27***	−0.32***	0.05	0.02	0.17***	

*, **, *** Significant at 10 percent, 5 percent, and 1 percent, respectively, all based on two-tailed tests.

[a] See Table 3 for variable definitions. The statistics are calculated for the pooled sample across countries, excluding 18 expatriate observations.

indicate that the manager has a high rank in the respective organization (*CATEGORY*, *TOPMAN-AGER*, *DIVMANAGER*).

The two measures capturing the strength of the implicit incentives, *IMPLICITNEXT* and *IMPLICITTOP*, are highly correlated with each other; they are also significantly correlated with measures that indicate that the manager has a high rank in the respective organization (*CATEGORY*, *DIVMANAGER*). The latter finding is consistent with the picture that emerges from the descriptive statistics in Table 3. Namely, the average values for the strength of the implicit incentives are increasing as one moves up the organizational ladder.

The hypothesis predicts that the explicit incentives provided by the company's compensation scheme are decreasing in the strength of the promotion-based implicit incentives that the manager faces. In order to investigate the hypothesis, I employ *TB*, which captures the ratio of the expected bonus to base salary, as the dependent variable. As discussed above, I employ several measures to capture the strength of the implicit incentives that the manager faces. Specifically, the different measures capturing the strength of the implicit incentives are the job-rating category of the highest-ranking manager in a respective country (*HIGHESTPOSITION*) and measures that take compensation differentials between adjacent job-rating categories as well as promotion possibilities into consideration (*IMPLICITNEXT*, *IMPLICITTOP*).

As mentioned above, it is plausible that incentive compensation practices vary systematically across countries for unobserved reasons. In order to control for such country-specific differences, I subtract from *TB* a measure that captures the median incentive intensity for mid-level managers for a large number of companies in the respective country. Specifically, the measure, which was provided by the company's consulting company, captures the median incentive intensity for managers who hold comparable positions in industrial corporations. The managers hold positions that are comparable to jobs that are ranked at level 10 in the company that is studied here. The consulting company computed the median incentive intensity using data for 30 to 150 companies in a given country. In order to control for systematic differences in the level of growth in the different countries, I adjust the variable *SALESGROWTH* for the respective country's growth in GDP from 2007 to 2008.

Since the sample includes measures that vary at the country level but that are constant for all managers within a country as well as measures that vary across managers, the structure of the data set can be described as hierarchical, with managers nested in countries considered lower in the hierarchy than countries (Bryk and Raudenbush 1992). Specifically, the job rating for the highest-ranking manager in a country, which is captured by the variable *HIGHESTPOSITION*, varies only at the country level.[12] Expressed in terms of the manager and country level of analysis, the model is as follows:[13]

Level 1:

$$TB_{ij} = \beta_{0j} + \beta_1(IMPLICITNEXT_{ij} \text{ or } IMPLICITTOP_{ij}) + \beta_2 CATEGORY_{ij}$$
$$+ \beta_3 Log(RSALES_{ij}) + \beta_4 SALESGROWTH_{ij} + \beta_5 TOPMANAGER_{ij}$$
$$+ \beta_6 DIVMANAGER_{ij} + \varepsilon_{ij}$$

for manager i in country j, where $\varepsilon_{ij} \sim N(0, \sigma^2)$.

Level 2:

$$\beta_{0j} = \gamma_0 + \gamma_1 HIGHESTPOSITION_j + u_{0j}$$

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[12] See Anderson et al. (2000) for an application of hierarchical linear models in the accounting literature.
[13] Because the distribution of *RSALES* is skewed, I use a log-transformation.

for country j, where $u_{0j} \sim N(0, \tau^2)$.

Combined in expressed form, the model is as follows:

$$TB_{ij} = \gamma_0 + \gamma_1 HIGHESTPOSITION_j + \beta_1(IMPLICITNEXT_{ij}/IMPLICITTOP_{ij})$$
$$+ \beta_2 CATEGORY_{ij} + \beta_3 Log(RSALES_{ij}) + \beta_4 SALESGROWTH_{ij} + \beta_5 TOPMANAGER_{ij}$$
$$+ \beta_6 DIVMANAGER_{ij} + u_{0j} + \varepsilon_{ij} \tag{1}$$

Table 6 shows the results of the estimation of Equation (1). I first estimate the model using the job-rating category of the highest-ranking manager in the respective country as the measure capturing the strength of the implicit incentives (Model I). The hypothesis predicts that the coefficient on *HIGHESTPOSITION*, β_1, is significantly positive. After controlling for the manager's job-rating category, the managers' implicit incentives are expected to be lower when the highest-ranking manager in the respective country has a lower job-rating category. The results indicate that, consistent with the prediction, the strength of the explicit incentives provided by the company's bonus plan is higher for managers who have fewer organizational levels left to climb.

In particular, the coefficient on *HIGHESTPOSITION* has a value of 0.025 and is significant at the 5 percent level, indicating that a manager's expected bonus decreases, on average, by approximately 2.5 percent of salary for each hierarchical level that s/he climbs. For example, a manager who has three organizational levels left to climb has an expected bonus that is lower by 2.5 percent of salary than the expected bonus of a manager holding a similar position but who has only two organizational levels left to climb. Given that the mean (median) values of the salary-scaled expected bonus are 0.36 (0.30) for managers who are at hierarchical level 6, the difference appears to be economically meaningful.

Although the findings with respect to the variable *HIGHESTPOSITION* are consistent with the hypothesis, they may be attributable to alternative explanations. Specifically, it is possible that the performance measures used in the bonus plan better reflect the actions of the managers who are closer to the top of their organization. Moreover, it is conceivable that managers who have fewer organizational levels left to climb have more decision-making authority that is not fully captured by the manager's job-rating category.

Model II is estimated by using *IMPLICITNEXT*, which is intended to capture the implicit incentives that the manager faces when focusing on the next-higher job-rating category. I predict a negative coefficient on *IMPLICITNEXT*. The explicit incentives that are provided by the company's bonus plan are expected to be lower when the compensation differential and/or the probability of getting promoted, which are captured by *IMPLICITNEXT*, are higher. The results obtained from estimating Model II are consistent with this prediction. Specifically, the coefficient on *IMPLICITNEXT* has a value of −0.079 and is significant at the 5 percent level. For example, if the median tenure is shorter by one year for managers at level 9, the value of *IMPLICITNEXT* increases by 0.29, which translates into an expected bonus that is lower by 2.2 percent of salary, on average. Similarly, a 50 percent increase in the median expected cash pay at the next level for managers in category 9 translates into an expected bonus that is lower by 1.8 percent of salary, on average.

Model III is estimated by using *IMPLICITTOP*, which is intended to capture the implicit incentives that the manager faces when considering the entire organizational ladder. The prediction and findings are consistent with the findings for Model II. In particular, the coefficient on *IMPLICITTOP* has a value of −0.047 and is significant at the 5 percent level. For example, if the median tenure is shorter by one year for managers at level 9, the value of *IMPLICITTOP* increases by 0.43, which translates into an expected bonus that is lower by 2.0 percent of salary, on average. Similarly, a 50 percent increase in the median expected cash pay at the next level for managers in

TABLE 6

Effect of the Strength of Implicit Incentives on Explicit Incentives[a]

$$TB_{ij} = \gamma_0 + \gamma_1 HIGHESTPOSITION_j + \beta_1(IMPLICITNEXT_{ij} \text{ or } IMPLICITTOP_{ij})$$

$$+ \beta_2 CATEGORY_{ij} + \beta_3 Log(RSALES_{ij}) + \beta_4 SALESGROWTH_{ij}$$

$$+ \beta_5 TOPMANAGER_{ij} + \beta_6 DIVMANAGER_{ij} + u_{0j} + \varepsilon_{ij}$$

Variable[b]		Model I Coefficient (z-statistic)	Model II Coefficient (z-statistic)	Model III Coefficient (z-statistic)
Intercept		0.243 *** (4.40)	0.605 *** (2.93)	0.577 *** (2.75)
HIGHESTPOSITION	(+)	0.025 ** (2.10)		
IMPLICITNEXT	(−)		−0.079 ** (−2.45)	
IMPLICITTOP	(−)			−0.047 ** (−2.11)
CATEGORY	(−)	−0.033 *** (−5.85)	−0.049 *** (−4.42)	−0.046 *** (−4.30)
Log(RSALES)	(+)	−0.001 (−1.63)	−0.010 (−1.42)	−0.012 * (−1.73)
SALESGROWTH	(+/−)	−0.019 (−1.40)	−0.075 (−1.22)	−0.076 (−1.16)
TOPMANAGER	(+)	0.040 ** (2.37)	NA	NA
DIVMANAGER	(+)	0.026 (1.52)	0.172 (1.25)	0.183 (1.26)
S.D. of Intercept (u_0)		0.071 ***	0.148 ***	0.140 ***
Number of observations		877	257	257
Pseudo R^2		39.85%	22.65%	23.73%

*, **, *** Significant at 10 percent, 5 percent, and 1 percent, respectively, all based on two-tailed tests.

[a] Expatriates are excluded from the regression models. Reported are the coefficients from the models with z-statistics in parentheses. The models are estimated using standard errors that are clustered by country.

[b] *TB* is calculated by subtracting the median incentive intensity in the respective country from *TB* as defined in Table 3; *SALESGROWTH* is calculated by subtracting the respective country's growth in GDP from *SALESGROWTH* as defined in Table 3; *Log(RSALES)* is natural logarithm of *RSALES*. The remaining variables are defined in Table 3.

category 9 translates into an expected bonus that is lower by 1.0 percent of salary, on average.

The findings with respect to the variables *IMPLICITNEXT* and *IMPLICITTOP* are consistent with the hypothesis. Nevertheless, it is possible that alternative explanations influence the findings. For example, it is possible that managers who face only small compensation increases upon promotion to the next level have relatively more decision-making authority.

With respect to the control variables in Table 6, the coefficient on the manager's job-rating category has a statistically significant value of around −0.03 to −0.04 across the three specifica-

tions. The findings indicate that a manager's expected bonus increases by 3–4 percent of salary, on average, when s/he moves to the next job-rating category. In Model I, the coefficient on the indicator variable, which indicates whether the manager is among the highest-ranking managers, is significantly positive, indicating that top-ranking managers receive higher explicit incentives. Specifically, the coefficient on *TOPMANAGER* has a value of 0.040, which suggests that top-ranking managers have expected bonus payments that are higher by 4 percent of salary, on average. The coefficients on the remaining control variables are insignificant at conventional levels. Specifically, the coefficient on *DIVMANAGER* is not significant at conventional levels. A potential explanation is that the effect is subsumed by the variables *TOPMANAGER* and *CATEGORY*.

In all three models, the standard deviation of the intercept is statistically significant. This finding indicates there is significant country-level variation around the intercept. Stated differently, there remains significant unexplained variation at the country-level.

It is conceivable that the results in Table 6 are driven by the number of organizational levels that the manager has left to climb. In other words, it is possible that the results in Models II and III with respect to the variables *IMPLICITNEXT* and *IMPLICITTOP* are driven by the manager's hierarchical level. In order to isolate the strength of the implicit incentives deriving from compensation increases and promotion probabilities, I re-estimate Models II and III from Table 6 after including the measure *HIGHESTPOSITION*, which controls for the number of organizational levels that the manager has left to climb. The results in Table 7 indicate that, even after controlling for the number of organizational levels that are left for the manager to climb, explicit incentives are stronger when promotion-based implicit incentives are weaker.

In summary, the results in Table 6 and Table 7 indicate that the explicit incentives provided by the company's bonus plan are higher when the manager has fewer organizational levels left to climb, when s/he faces lower implicit incentives from moving to the next organizational level, and when s/he faces lower implicit incentives from moving to the top of the organization. These findings support the hypothesis that explicit incentives provided by variable pay schemes are stronger when promotion-based implicit incentives are weaker. In a broader sense, the results are consistent with the notion that implicit promotion-based incentives are taken into consideration in designing explicit incentive contracts.

Robustness Tests

The inferences are robust to sensitivity tests. First, the results are robust to estimating an OLS regression on the pooled sample where the intercept is treated as non-random. Second, I repeat the analyses by including an indicator variable for each of the five different divisions. The results are virtually identical. Third, in order to control for the manager's career horizon (Gibbons and Murphy 1992), I include the manager's age as an independent variable in the regression analyses, which does not change the results. I also repeat the analyses using the ratio of the actual bonus that was paid out to base salary as the dependent variable in order to control for potential differences in the countries' bonus payout practices. The inferences remain unchanged. Moreover, the inferences are robust to including the unit's sales as a measure of the unit's size in the regression models. The results also remain unchanged when the variable capturing the manager's job-rating category, *CATEGORY*, is replaced by indicator variables in order to address potential nonlinearities.

V. CONCLUSION

This study re-examines the hypothesis that the explicit, compensation-based incentives of mid-level managers are adjusted to the level of implicit, promotion-based incentives. Specifically,

TABLE 7

Effect of the Strength of Implicit Incentives on Explicit Incentives[a]

$$TB_{ij} = \gamma_0 + \gamma_1 HIGHESTPOSITION_j + \beta_1(IMPLICITNEXT_{ij} \text{ or } IMPLICITTOP_{ij})$$

$$+ \beta_2 CATEGORY_{ij} + \beta_3 Log(RSALES_{ij}) + \beta_4 SALESGROWTH_{ij}$$

$$+ \beta_5 TOPMANAGER_{ij} + \beta_6 DIVMANAGER_{ij} + u_{0j} + \varepsilon_{ij}$$

Variable[b]		I Coefficient (z-statistic)	II Coefficient (z-statistic)
Intercept		0.420 ***	0.402 **
		(4.51)	(3.56)
HIGHESTPOSITION	(+)	0.031	0.031
		(0.95)	(0.98)
IMPLICITNEXT	(−)	−0.086 ***	
		(−4.30)	
IMPLICITTOP	(−)		−0.057 **
			(−2.18)
CATEGORY	(−)	−0.046 ***	−0.045 ***
		(−5.01)	(−4.62)
Log(RSALES)	(+)	−0.003	−0.005
		(−0.27)	(−0.48)
SALESGROWTH	(+/−)	−0.060	−0.065
		(−0.92)	(−0.93)
TOPMANAGER	(+)	NA	NA
DIVMANAGER	(+)	0.190	0.204
		(1.28)	(1.31)
S.D. of Intercept (u_0)		0.130 ***	0.130 ***
Number of observations		257	257
Pseudo R^2		27.04%	28.27%

*, **, *** Significant at 10 percent, 5 percent, and 1 percent, respectively, all based on two-tailed tests.

[a] Expatriates are excluded from the regression models. Reported are the coefficients from the models with z-statistics in parentheses. The models are estimated using standard errors that are clustered by country.

[b] *TB* is calculated by subtracting the median incentive intensity in the respective country from *TB* as defined in Table 3; *SALESGROWTH* is calculated by subtracting the respective country's growth in GDP from *SALESGROWTH* as defined in Table 3; *Log(RSALES)* is natural logarithm of *RSALES*. The remaining variables are defined in Table 3.

this study revisits the theoretical argument that explicit incentives are optimally stronger in situations that pose weaker implicit, promotion-based incentives (Gibbons and Murphy 1992; Gibbs 1995).

The analyses in this study are based on compensation data from a large multinational corporation. This setting provides an opportunity to observe variation in the strength of implicit incentives because the sample is comprised of managers with comparable jobs but who face varying levels of implicit incentives since they are positioned at different hierarchical levels in their respective organization, their promotion possibilities vary, and they experience different levels of compensation increases upon promotion.

Regression analyses show that the incentives provided by the company's bonus plan are stronger for managers who are positioned at higher hierarchical levels, who face weaker implicit incentives from getting promoted to the next level, and who face weaker implicit incentives from getting promoted to the top of the organization, after controlling for the position's scope and level of accountability. These findings are consistent with the notion that implicit promotion-based incentives are taken into consideration in designing explicit incentive contracts, as proposed in the theoretical literature. More precisely, the evidence supports the hypothesis that explicit incentives are optimally stronger in situations with weaker implicit incentives (Gibbons and Murphy 1992; Gibbs 1995).

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