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Determinants of Pay Levels and Structures in Sales Organizations

Two key issues in business-to-business (B2B) sales force management are (1) how much a given sales job should be compensated (pay level) and (2) how much of the compensation should be fixed versus variable (pay structure). The authors examine the paychecks drawn by people in more than 14,000 selling jobs and more than 4000 sales management jobs in five B2B industry sectors in five European countries. They show that pay levels and structures reflect an apparent balancing of two conflicting pressures: the economic imperative (to reward better performers by heightening pay dispersion) and the compensation differential compression resulting from high tax regimes. In particular, B2B firms appear to use variable pay as a way to lessen the salary differential compression impact of high tax regimes on salesperson motivation. Furthermore, similar to chief executive officers, sales managers can have an important multiplier effect that justifies paying them at increasing rates as job challenge rises.

Keywords: compensation, motivation, agency theory, pay disparity, sales management

I n many business-to-business (B2B) industries, personal selling in the field is a critical marketing function. A pressing issue for the decision maker is that of compensation. How much should a salesperson earn (the question of pay level), and how much of that pay should be guaranteed (salary) rather than contingent on achievement (the question of pay structure)? Some practitioners believe that an even more important issue is the level and structure of pay for the managers who supervise salespeople. Elling and colleagues (2002) assert that a poor manager can ruin several salespeople and seriously reduce the achievements of each one, while an excellent manager can develop several great salespeople, each of whom consistently generates high returns.

A large body of research yields insight into compensation in general, but it is difficult to apply these studies to

B2B field sales, a job with unusual features (Gomez-Mejia and Balkin 1992). Research specific to sales roles has not kept pace with management's need to understand the level and structure of sales compensation. In particular, based on economic theories, a self-contained body of literature has generated insights into optimal salesperson compensation (Albers 2002). However, Brown and colleagues (2005) conclude that it is difficult to apply these insights to many selling situations, in particular because the field sales job is becoming more complex and longer in its time orientation (Jones et al. 2005). Complicating the compensation research issues further, most empirical salesperson compensation research examines only pay structures, ignoring pay levels, and research on compensation of sales managers is almost nonexistent. Albers (2002) points to the difficulty of obtaining detailed and accurate data on compensation in sales (e.g., data from professional organizations on factors influencing variable pay levels or for a given firm, data on the response function and the utility function of salespeople).

We test our research hypotheses using a unique data set that covers more than 14,000 salesperson roles and more than 4000 sales manager roles operating in five European countries and in five B2B industry sectors. We supplement these data with privately commissioned data about each country's taxation and publicly available data on cost of living. Despite extensive literature on this topic, our investigation provides some new and notable results.

First, we use a new theoretical approach to develop a conceptual model that links compensation level and structure. To this end, we draw on literature from sales force management, compensation theory, transaction cost analysis, and agency theory.

Second, we investigate both sales managers' and salespeople's compensation. To the best of our knowledge, sales manager compensation has never been investigated empirically, let alone in the same framework as that of salespeople. Thus, it is of inherent interest to examine the compensation practices of sales managers and field salespeople. Furthermore, given the extensive economics and manage-

ment literature on the compensation of top managers (e.g., chief executive officers) and the marketing literature on field salespeople, examining an intermediate level of corporate employee expands our understanding of compensation at all levels of the enterprise. Our scrutiny of the sales management level also provides evidence of a different impact of job challenge than is evident in the field sales force, so the incremental analysis is not merely a replication of field salesperson compensation insights.

Third, this study is the first compensation study to examine the sales (or sales manager) job at a micro level. Prior research has examined the person filling the selling job (e.g., age, education) and has averaged across sales roles at the firm level, usually based on survey data about "typical" sales positions inside a firm. Thus, we model individual-level data, whereas other research uses proxies, such as average compensation of salespeople across an entire sales force. In particular, we carefully control for differences in the nature of the selling task. Data of this nature are difficult to obtain, particularly on a large scale.

Fourth, with this multisource, multicountry secondary data, we discern patterns in pay level and structure at the individual job/paycheck level. Thus, we examine both level and structure of sales pay plans—that is, how much sales personnel earn (level) and in what form they derive the income (the structure of fixed and variable pay). These two key descriptors of pay are not always investigated together in the compensation literature, though both theory and practical insight indicate that they are related. Our results confirm this insight.

Fifth, we focus on posttax remuneration rather than pretax remuneration traditionally modeled in the literature because we believe sales personnel are motivated by disposable income, and therefore companies set compensation policies with tax considerations in mind. Variations in the tax environment magnify variation in the compensation environment and strengthen the test of our major explanatory mechanism, which is the impact of the management of income differential compression due to high tax regimes on salesperson motivation.

In this article, we argue that pay level and pay structure decisions are linked and that both are driven by the tension experienced by decision makers between the economic imperative to connect pay to productivity and the compensation differential compression resulting from high tax regimes. Our results suggest that top sales managers provide exceptional value to the firm and are paid accordingly. We also show theoretical convergence between the management and agency theory approaches in predicting sales pay levels and structures.

A Conceptual Model of Compensation Level and Structure

Challenges in Sales Compensation Research

Face-to-face selling on the customer's premises (field selling) is particularly important in the B2B sector, in which skilled salespeople work to solve customer problems to create a sale and then work within their own firms to ensure that obligations to the customer are honored. In B2B, salespeople are often the principal means of promotion and of gaining market feedback and, as such, can strongly influence profitability. As a result, top salespeople should be paid accordingly.

There is a large literature on compensation reflecting many perspectives—principally, organization theory and behavior, international management, industrial organization psychology, sociology, economics (including principal–agent theory), labor economics, law, and strategy (Werner and Ward 2004). Notably, B2B sales jobs are curiously absent from the management research on compensation, both empirically and conceptually, even though these theories have direct applicability to the sales force context. Indeed, compensation texts urge caution in applying compensation insights because of the exceptional features of B2B sales jobs (Gomez-Mejia and Balkin 1992). No two sales territories are alike, so every job is unique, making it difficult to establish baselines (Ryans and Weinberg 1987). Unlike most jobs, information is asymmetric; salespeople know their territories, customers, and competitors much better than management does. Salespeople are autonomous; they are out in the field, away from direct observation and contact. Furthermore, for many sales jobs, it is difficult to specify the best route to success.

These factors suggest that the monitoring and assessment of performance is difficult. All these elements of field sales complicate a first-line sales manager's efforts to calibrate appropriate salary levels, person-by-person and year-by-year, and to convince his or her superiors and subordinates that his or her multiple judgments are correct. However, salespeople generate visible outcomes for which they can be held (at least somewhat) accountable. Thus, variable (incentive) pay can be used as substitute for salary and is more justifiable than in almost any other occupational setting (Gomez-Mejia and Balkin 1992). These insights from management theory suggest that managers have a difficult time settling on the proper amount to pay and in what form.

In parallel, a considerable body of literature on sales compensation has developed in the marketing field (for reviews, see Albers 2002; Brown et al. 2005; Krafft, Albers, and Lal 2004). Key analytic contributions, based on agency-theoretic models, have been made by Basu and colleagues (1985), Lal and Srinivasan (1993), and Joseph and Thevaranjan (1998), and these and other contributions are reviewed by Coughlan and Sen (1989) and Coughlan (1993). Empirical tests of agency-theoretic predictions have been presented by John and Weitz (1989), Coughlan and Narasimhan (1992), Krafft, Albers, and Lal (2004), Joseph and Kalwani (1998), and Misra, Coughlan, and Narasimhan (2005).

The agency-theoretic approach is based on the ideas that the firm (called a "principal") hires sales personnel (called "agents") to generate sales, that sales are positively (but stochastically) influenced by the amount of sales effort exerted, and that sales personnel are risk averse while the firm is risk neutral (though Misra, Coughlan, and Narasimhan [2005] also model a risk-averse firm). In this environment, the optimal compensation plan (both in total

pay and in the mix of salary versus variable pay) must simultaneously induce strong sales effort and also offer the sales employee a risk-adjusted expected income level at least as great as his or her next-best earning opportunity (i.e., his or her "opportunity cost of time"). Comparative-static analysis generates predictions about the effects of opportunity cost of time, size of the firm, salesperson risk aversion, and sales effort productivity on total pay and the mix of fixed salary and variable compensation.

Neither the management compensation literature nor agency theory specifically examines the impact of tax regimes on optimal compensation of salespeople or sales managers, though testable inferences can be made from the underlying theories for pay levels and structure for salespeople and sales managers. Next, we turn to this hypothesis development.

How Job Challenge Influences Pay Level

A review by Lazear (1995, p. 260) notes the curious omission of task characteristics (job demands), even though "the entire notion of a 'job'… seems central to the thinking of businesspersons and administrators." This is understandable because it is difficult to compile detailed data on job demands. In B2B field sales, all jobs appear to be superficially alike, but conceptually they are scalable from low to high job challenge (Davenport 2001). Low-challenge sales jobs demand relatively little know-how or problem solving and typically involve repetitive, small sales to transactional customers. In contrast, high-challenge sales jobs involve consultative relationship management of jumbo accounts. These jobs demand leadership of internal cross-functional teams on the supplier's side, which work with corresponding teams on the customer's side. Similarly, sales managers' variations in job challenge may come from supervising less versus more challenging sales roles or from variations in depth of supervisory responsibility or other strategic roles in the firm.

In keeping with the economic point of view, we hypothesize that firms will award higher pay as job challenge rises. In short, the more challenging the sales job, the more valuable and visible is the contribution of salespeople who do the job well. Furthermore, competitors will poach the best performers if the firm does not reward them sufficiently—that is, if the firm does not offer them at least their "opportunity cost of time" (see Basu et al. 1985; Cappelli 1999; Misra, Coughlan, and Narasimhan 2005). Thus, decision makers can readily agree that it is in the firm's interest to motivate the jobholder to work harder and smarter.

Does the same argument apply to sales managers themselves? Good sales managers can make a significant difference by enabling and coaching their multiple subordinates and by securing organizational resources for promising customers (Anderson 1996). Therefore, empowering several effective sales managers has multiplier effects on revenue and profits (MacKenzie, Podsakoff, and Paine 1999). Such skills are more scarce than general field-selling skills, which also increases the competent sales manager's opportunity cost of time. As a result, it may be necessary to compensate sales manager roles at incrementally higher rates (i.e., than those enjoyed by salespeople) as job challenge

increases (Basu et al. 1985; Coughlan and Narasimhan 1992; Misra, Coughlan, and Narasimhan 2005). Organizations cannot overlook net pay because it is after-tax income that motivates employees by determining their lifestyle; accordingly, our hypotheses focus on the level of take-home pay. In some tax regimes (those with progressive tax rates), after-tax income differentials can be compressed to levels that leave employees wondering why they should work harder (Gottschalk and Smeeding 1997). Drawing on both management theory and agency theory reasoning, we posit the following:

> H_1: The level of take-home pay increases at a higher rate with job challenge for sales managers than for salespeople.

How Job Challenge Influences Pay Structure

As we discussed previously, low-challenge jobs differ from high-challenge jobs in their required degree of know-how, problem solving, and leadership skills (Davenport 2001). The opportunity cost of time of a sales professional is also likely to increase as the job challenge increases because of the increasing scarcity of these higher-level skills. This suggests (as per agency-theoretic predictions) not only a higher overall level of pay as job challenge rises (H_1) but also a lower level of variable pay (see Basu et al. 1985; Coughlan and Narasimhan 1992; Coughlan and Sen 1989; Misra, Coughlan, and Narasimhan 2005).[1] Integrating the transaction cost analysis framework with prescriptions from the sales management literature, John and Weitz (1989) also suggest that the proportion of total pay generated by variable pay formulas of a sales professional is likely to decrease as the job challenge increases because of the increasing difficulty of replacing the jobholder.

Similarly, higher-challenge sales management jobs involve incremental supervisory responsibilities (Davenport 2001). Reliance on variable pay in this environment requires a formula that ties variable pay to an objective indicator or set of indicators. However, performance on more challenging jobs is more difficult to measure because there is an absence of neat, clean measures that correspond to what the firm needs its sales managers to do (e.g., measuring the quality of supervisory mentoring is more difficult than observing sales performance by lower-level field salespeople).[2] Therefore, the firm cannot build a variable pay formula that "works" as well for high-challenge as for low-

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[1]Note that these sources all hypothesize that a higher opportunity cost of time is associated with a higher ratio of salary to total pay. Instead, we hypothesize that a higher level of job challenge (a positive proxy for the opportunity cost of time) is negatively associated with the ratio of variable to salary pay. These two statements can straightforwardly be shown to be mathematically identical. Let T = total pay, S = salary pay, and V = variable pay. Then, V = T – S. Note that $(V/S) = [(T – S)/S] = (T/S) = \{[1/(S/T)] – 1\}$. Then, any factor that causes the ratio of salary to total pay (S/T) to rise implies directly that the ratio of variable pay to salary (V/S) falls. Thus, H_2, which postulates a negative relationship between job challenge and the ratio of variable to salary pay, is consistent with the opportunity-cost-of-time hypotheses voiced in the cited articles.

[2]We thank Ajay Kohli for this line of argument.

challenge jobs. This phenomenon triggers gaming and poor teamwork if firms nevertheless offer their sales managers a compensation plan heavily weighted toward variable pay. Therefore, both management theory and agency theory predict that job challenge affects pay structures, as follows:

H$_2$: The greater the job challenge, the lower is the ratio of variable to fixed pay (a) for salespeople and (b) for sales managers.

How the Tax Environment Raises the Stakes

Our fundamental argument is that economic considerations drive firms to single out and reward high performers in challenging sales jobs. Factoring in national taxation systems introduces new complications not taken into account in the agency-theoretic published literature. First, to ensure that posttax differentials among performance levels are large enough to be motivating, a firm must create large pretax pay differentials. Firms will be obliged to pay a high-performing sales employee whatever it takes to make sure that motivational pay premiums are still in the employee's bank account after he or she pays taxes. Second, the employer is boosted into a higher payroll tax bracket as employee gross pay changes. The combined tax burden— employee and employer—leads to enormous differences across employees in their total cost to the company.

These two considerations (employee and employer) amplify the necessity for firms in high tax regimes to offer even higher incentives than firms in low tax regimes.[3] Therefore, we posit the following:

H$_3$: The ratio of variable to fixed pay increases as the employee's taxation burden increases (a) for salespeople and (b) for sales managers.

H$_4$: The ratio of variable to fixed pay increases as the employer's taxation burden increases (a) for salespeople and (b) for sales managers.

The Relationship of Pay Structure to Pay Level

Firms cannot afford *not* to reward salespeople when they generate results from their customers; otherwise, salespeople may shirk, behave unethically, sabotage, or quit. One solution is to combine variable pay with higher average take-home pay. Weiss (2001) argues that firms that embrace variable pay can outbid the average total pay at salary-only firms because they can offer lofty pay to high performers, while avoiding the risk of high pay for poor performance. This holds for sales managers as well because their variable pay may be hinged to the performance of their subordinates. Employees may also frame pay volatility as a form of risk, which deserves (even requires) higher total pay in return. Conversely, it is unlikely that salary-only firms will pay well, given their assumption of the risk of poor performance.

Agency-theoretic reasoning is completely consistent with the foregoing argument: When an agent (e.g., a salesperson, a sales manager) is risk averse, a more highly variable pay plan must have a higher expected payout than

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[3]We thank an anonymous reviewer for this line of argument.

an all-salary plan to induce the agent to "take the bet." This is the same phenomenon as in the standard economic analysis of sure versus risky bets (Coughlan and Sen 1989, pp. 334–36): When giving a person a choice between, for example, $100 for certain and a fifty-fifty chance of winning either $50 or some (high) value $X, a risk-neutral person is just willing to take the risky alternative as long as $X is at least $150 in value (so that the expected value of the bet is at least $100). However, a risk-averse person requires $X to be strictly greater than $150, and the higher the degree of risk aversion, the larger the risk premium ($X – $150) must be to induce the person to take the bet. Thus, on the basis of either management theory or agency-theoretic reasoning, we posit the following:

H$_5$: The level of take-home pay increases with the ratio of variable to fixed pay (a) for salespeople and (b) for sales managers.

Baseline Influences on Pay Level and Pay Structure

Our premise is that sales personnel care about how well their compensation allows them to live, to the point that management must factor this into pay structure and pay level. If so, the cost of living in a country should influence pay levels, which should be adjusted upward to reflect high costs (Milkovich and Newman 2002).

Industry factors should also matter. Multi-industry studies typically find industry effects, which may capture important elements of the competitive and task environment (Milkovich and Newman 2002), as well as industry-specific norms (Gomez-Mejia and Balkin 1992).

Firms that operate in only one country (national firms) may not follow the same compensation strategy as multi-country (international) firms (Werner and Ward 2004). International firms have reason to harmonize practices over countries, whereas national firms are free to reflect local norms.

The size of the employer is an important factor, but the nature of its impact is controversial. In terms of pay level, it is taken for granted that large firms pay better than small firms for all jobs, though it is unclear why (Milkovich and Newman 2002), and the difference is rapidly fading away (Hollister 2004). In terms of pay structure, does firm size influence reliance on variable pay? The limited literature that addresses this question empirically suggests that small firms rely more on variable pay and less on salary, perhaps because they cannot afford overhead. However, in a study of more than 14,000 middle and top managers, Gerhart and Milkovich (1990) find the reverse. Misra, Coughlan, and Narasimhan (2005) and John and Weitz (1989) study field salespeople and also find that larger companies turn to variable pay. Misra, Coughlan, and Narasimhan argue that this arises from two factors: lower risk aversion in large than in small firms and higher sales productivity in large firms. John and Weitz explain the size result as a reaction to governance costs: The larger the firm, the more judgments must be made, and the more difficult it is to keep these judgments consistent and to explain them convincingly to salespeople.

Model Development and Estimation

Sample

Key variables are compiled by the Hay Group, the world's largest compensation consulting firm, which uses the information to generate and sell benchmarking reports by industry and country, as well as for consulting. Hay uses a highly formalized job evaluation methodology, adopted by more than 40% of the *Fortune* 1000 companies, based on its own proprietary position evaluation methodology (Sperling 2001). The central variable is the Hay point, an overall index of the job challenge of any job (here, each sales or sales management role). This index is painstakingly calibrated by Hay consultants, in conjunction with personnel from human resources and sales management within each company, from detailed information about tasks, duties, and responsibilities of each job type. This information is combined to provide a single overall measure of skills or job requirements, as we describe in greater detail subsequently. Hay also draws on each company's archives to ascertain the pay level and pay composition (fixed versus variable) actually earned by the people filling these thousands of jobs.

Our data set contains fixed and variable compensation in 2002 for 14,424 salesperson jobs and 4957 sales manager jobs from national or international organizations operating in five European countries (France, Germany, Italy, the Netherlands, and the United Kingdom) and five industrial sectors (consumer, financial, industrial goods, trade, and other sectors).[4] Our choice of European countries was motivated by (1) the lack of compensation research on European sales forces and (2) our interest in investigating various tax environments, subject to data and sample availability. Approximately two-thirds of salespeople and one-half of sales managers work for national companies. In the sales arena, researchers have followed human capital theory, typically relying on measures of salesperson characteristics—averaged at the sales force level—to investigate sales personnel compensation issues (e.g., Coughlan and Narasimhan 1992; Krafft 1999; Krafft, Albers, and Lal 2004; Misra, Coughlan, and Narasimhan 2005). Examining sales job characteristics rather than salesperson characteristics, as the Hay data permit us to do, is likely to substantially enrich our understanding of sales compensation.

We tested the data for potential multicollinearity. Although mean-centering can alleviate correlations among predictor variables, multicollinearity may remain an inherent part of the variance structure (see Echambadi and Hess 2007). To lend greater confidence to our findings, we conducted several tests for multicollinearity on the data. None of the pairwise correlation coefficients (see Table 1) between the predictors are greater than .62 ($p < .0001$) for Model 1 and .48 ($p < .0001$) for Model 2. Furthermore, all the variance inflation factors are below 2. In addition, none of the condition indexes associated with the eigenvalues of the variable matrix exceed 3. Consequently, multicollinearity is not an issue in our data (Belsey, Kuh, and Welsch

1982; Marquardt 1970) (for raw figures, see Tables 1 and 2; for descriptive statistics and pairwise correlations, Tables 3 and 4).

Measures

Take-home pay. We adjusted total compensation measures to account for income and social taxes, country-by-country and bracket-by-bracket. Ernst & Young, a prominent international tax accounting firm that regularly computes such figures for the business press, provided the 2002 tax figures for every €5,000 earnings ranging between €5,000 and €250,000, assuming sales personnel are prototypical (i.e., married with two children under 16 years of age). Using these tax and earning figures, we estimated employees' taxes through piecewise regression analysis to maximize the fit. This approach abstracts from the principles of tax systems and gets directly into actual taxes, given actual pay ranges for real people in each country. Because the resulting figures for take-home pay vary substantially across industries, we mean-center take-home pay by industry.[5]

Firm size. Firm size is operationally defined as firm sales (expressed as a natural logarithm), which is consistent with extant compensation research (e.g., Gomez-Mejia, Larraza-Kintana, and Makri 2003; Miller, Wiseman, and Gomez-Mejia 2002; Sanders and Carpenter 1998; Zajac and Westphal 1995). Corporate sales range from €9 million to €8,000 million with a mean of €1,128 million (using individual salespeople as units of analysis). The average corporation studied would place approximately 2500th in the AMADEUS (2004) ranking of European companies for sales. Thus, although the companies we study were not randomly selected, they appear typical in some key respects.

Job challenge. The Hay point system is a proprietary method for rating the content of any job and is a widely used technique for measuring the "value" of individual jobs both within and across organizations (Baron and Kreps 1999, p. 285). To construct this measure, Hay and its clients develop detailed questionnaires that cover what is done exactly and what is needed in a particular job. More specifically, know-how (i.e., capabilities, knowledge, and specialized techniques), problem solving (i.e., requirements to deal with unusual situations), and accountability (i.e., empowerment, authority, and magnitude) are determined. The combined measure of these three dimensions captures how demanding a particular job is. Furthermore, teams of Hay consultants, managers, and employees holding the job fill out the questionnaires to ensure that complete descriptions are provided (O'Shaughnessy, Levine, and Cappelli 2001, p. 485).

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[4]Salesperson data are for all five countries, while sales manager data are only for four countries (France, Germany, the Netherlands, and the United Kingdom).

[5]Although Hay points are designed to assess job requirements across firms, the associated compensation may not be aligned to those requirements. For example, O'Shaughnessy, Levine, and Cappelli (2001) surmise that some firms, to ensure above-average performance, may overpay to attract and retain more qualified employees than the jobs require. We thank the anonymous reviewers for pointing out this issue.

TABLE 1
Summary Statistics for Salespeople by Industry and Country (n = 14,424)

	Take-Home Pay (€)		% Variable Pay	
	M	**SD**	**M**	**SD**
Consumer goods (n = 3638)	34,492.59	9,522.07	.10	.12
Industrial goods (n = 6541)	37,978.25	10,800.80	.14	.15
Financial services (n = 3648)	39,550.72	12,797.51	.16	.18
Trade (n = 362)	26,205.46	15,475.10	.14	.24
Other industries (n = 235)	32,366.83	7,071.91	.04	.07
France (n = 7823)	37,044.58	11,864.86	.16	.17
Germany (n = 576)	43,995.00	11,249.04	.12	.13
Italy (n = 1378)	34,266.39	11,858.68	.12	.11
The Netherlands (n = 1147)	31,221.70	6,656.32	.08	.08
United Kingdom (n = 3500)	39,172.05	10,374.72	.10	.14

TABLE 2
Summary Statistics for Sales Managers by Industry and by Country (n = 4957)

	Take-Home Pay (€)		% Variable Pay	
	M	**SD**	**M**	**SD**
Consumer goods (n = 1828)	51,233.31	14,135.65	.10	.09
Industrial goods (n = 2246)	53,002.42	11,796.94	.15	.13
Financial services (n = 724)	50,381.94	12,570.43	.15	.17
Trade (n = 79)	45,280.73	9,523.01	.17	.20
Other industries (n = 80)	53,192.37	16,348.21	.09	.14
France (n = 3836)	51,200.06	12,632.30	.15	.14
Germany (n = 427)	57,259.83	14,236.95	.08	.08
The Netherlands (n = 152)	51,901.61	11,462.38	.08	.07
United Kingdom (n = 542)	52,148.75	13,348.72	.06	.09

Davenport (2001) tests the nomological validity of Hay points for sales positions, showing that increasing points match the progression of the selling task from basic roles (transactional selling) to relationship selling, then to consultative selling, and finally to value-added selling. As these jobs become more challenging, they demand a longer time horizon and necessitate multiple, diverse indicators assorted to more complex and rigorous customer demands. They also require more teamwork because salespeople go from individual selling to leading sales teams that deal with purchasing teams.

The Hay index is comparable across jobs and firms. However, it is not linear (Sperling 2001). A given position can gain an increment only if it is at least 15% more challenging than the closest lower job on the grounds that smaller differences are not noticeable enough to be measured reliably (or appreciated by employees). Although this minimum 15% gradient in measurement could introduce convexity into the relationship between Hay points and take-home pay, most jobs exhibit linear relationships in most firms (Sperling 2001).

Salespeople's Hay points range from 104 to 994, and managers' Hay points range from 285 to 997. Managers tend to operate in higher ranges of job challenge: The average number of Hay points is 405 for a salesperson and 600 for a sales manager (Tables 3 and 4). This variable is mean centered to reduce the correlation between job challenge and (job challenge)[2].

Ratio of variable to fixed pay. We divide the percentage of total (i.e., gross) cash compensation that is variable (setting the minimum at .01) by the percentage that is fixed. We log this odds ratio, which is interpretable as the relative emphasis on variable versus fixed, to decrease heteroskedasticity, as Cooper (1993) recommends. On average, 13% of take-home pay comes from variable pay (implying that the average odds ratio would be 13 divided by 87, or .149; the average log odds ratio would be the log of .149, or −1.90).

Cost of living. We used 2002 comparative price levels (Organisation for Economic Co-Operation and Development 2003). These measure price-level differences between countries for a representative basket of consumer goods and services.

Employer's tax burden. We operationalize corporate tax burden by calculating the ratio of corporately paid social taxes triggered by variable pay to variable pay itself:

$$\text{Employer's tax burden} = \frac{\left[\begin{array}{c}\left(\text{Employer taxes triggered by gross total pay}\right) \\ -\left(\text{Employer taxes triggered by base salary}\right)\end{array}\right]}{\left[\left(\text{Gross total pay}\right)-\left(\text{Base salary}\right)\right]}.$$

This shows how much of variable pay must be matched by payroll taxes. This is a proxy for the weight of tax burden on the employer side and is higher in more burdensome tax

TABLE 3
Summary Statistics and Pairwise Correlations (Salespeople) (n = 14,424)

	M	SD	1	2	3	4	5	6	7	8
1. Take-home pay[a]	.00	11,135.00	1							
2. Ratio of variable to fixed pay[b]	−2.45	1.39	.47	1						
3. Job challenge[c]	.00	91.92	.35	−.13	1					
4. (Job challenge)^2	8449.00	14,942.00	.18	−.04	.62	1				
5. Firm size[d]	6.31	1.25	.11	.05	−.04	−.04	1			
6. Cost of living	.96	.07	.08	−.11	−.22	−.24	.41	1		
7. Excess employee's taxes	.00	.04	.56	.35	.48	.32	−.22	−.56	1	
8. Employer's taxes	.31	.17	−.08	.17	−.10	−.10	−.19	−.56	0	1

[a]We mean-centered this variable by industry.
[b]We measured this variable as a natural logarithm.
[c]We mean-centered this variable.
[d]We measured this variable as the natural logarithm of sales (in millions of euros).
Notes: Correlation coefficients are all significant at $p < .0001$.

TABLE 4
Summary Statistics and Pairwise Correlations (Sales Managers) (n = 4957)

	M	SD	1	2	3	4	5	6	7	8
1. Take-home pay[a]	.00	12,862.00	1							
2. Ratio of variable to fixed pay[b]	−2.41	1.30	.36	1						
3. Job challenge[c]	.00	121.02	.47	−.13	1					
4. (Job challenge)^2	14,644.00	24,699.00	.34	.04	.57	1				
5. Firm size[d]	6.10	1.09	.07(n.s.)	-364×10^{-5}(n.s.)	−.02(n.s.)	−.05	1			
6. Cost of living	.96	.04	.05	−.29	.05	−.15	.34	1		
7. Excess employee's taxes	.00	.03	.72	.34	.42	.36	−.16	−.39	1	
8. Employer's taxes	.36	.16	−.15	.28	−.13	.12	−.20	−.77	0	1

[a]We mean-centered this variable by industry.
[b]We measured this variable as a natural logarithm.
[c]We mean-centered this variable.
[d]We measured this variable as the natural logarithm of sales (in millions of euros).
Notes: Correlation coefficients are all significant at $p < .001$. n.s. = not significant.

regimes. By focusing on the proportion triggered after salary, we capture the payroll tax brackets into which performance pay moves an employer in a given tax regime.

Employee's tax burden. We calculate the proportion of taxes employees pay out of their paycheck. This is a proxy for the weight of tax burden on the employee side. However, because the employer's and employee's tax burdens are strongly correlated, we run a regression of the following form:

$$\text{Employee's tax burden} = \text{constant}$$
$$+ \beta \times (\text{employer's tax burden}).$$

We do this separately for the field salesperson data and the sales manager data.

We then use the residuals of this regression model, excess employee's tax burden, in place of the variable employee's tax burden to avoid multicollinearity. When these residuals are positive, on the whole, employee's tax burden is greater than employer's tax burden; when the residuals are negative, on the whole, employee's tax burden is lighter than employer's tax burden. Consistent with our previously discussed logic for the taxation variables, our theory predicts that the residuals should have a positive

coefficient in the (ratio of variable to fixed pay) regression equation.

Estimation Procedures for Salespeople

In line with the hypotheses described previously, we estimate the parameters of the following model specifications for salespeople across countries:[6]

(1)   Take-Home Pay$_i = \alpha_0 + \alpha_1$Job Challenge$_i$
$$+ \alpha_2 \text{Job Challenge}_i^2 + \alpha_3 \text{Firm Size}_i$$
$$+ \alpha_4 \text{Cost of Living}_i$$
$$+ \alpha_5 \ln(\text{Ratio of Variable to Fixed Pay}_i)$$
$$+ \varepsilon_1, \text{ and}$$

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[6]Although the Chow test determined that the coefficients in our model are not identical in country subsamples, we conducted our analysis on pooled country data because extensive country analysis provided evidence that the pattern of coefficients was overall consistent across countries. Analysis by country suggested differences in magnitude but not in the direction of effects. Because our purpose is to test the significance and direction of effects, we present the results of the cross-country analyses.

(2)   ln(Ratio of Variable to

$$\text{Fixed Pay}_i) = \beta_0 + \beta_1 \text{Job Challenge}_i + \beta_2 \text{Firm Size}_i$$

$$+ \beta_3 \text{Excess Employee's Tax Burden}_i$$

$$+ \beta_4 \text{Employer's Tax Burden}_i + \varepsilon_2,$$

where

subscript i = salesperson or sales manager,
Take-Home Pay = net pay centered by industry,
Job Challenge = Hay points (mean centered),
Firm Size = log of sales,
Cost of Living = comparative price level index of a country,
ln(Ratio of Variable to Fixed Pay) = log of ratio of variable to fixed compensation (this variable is centered by industry when it is the dependent variable of Equation 2),
Excess Employee's Tax Burden = residual from regression of employee's tax burden on employer's tax burden, and

Employer's Tax Burden = ratio of corporately paid social taxes triggered by variable pay to variable pay itself.

Equation 1 specifies pay levels, Equation 2 specifies pay structure, and both dependent variables are centered by industry. As we noted previously, the mean and range of sales pay is ordinarily industry specific, in part because of different conditions in different industries. We conducted extensive subgroup comparisons, which suggest that the overall patterns of coefficients within industries differ in magnitudes but are comparable in signs. Our interest is in testing theoretical substantive explanations; thus, for abstraction and parsimony, we focus on the effects across industries and countries.

Note that in these data, the salespeople are nested within country; therefore, we sought an analytical procedure to represent this structure. Note also that a subset of independent variables and observations is common to both models, thus representing a possibility of correlation between the error terms in the two equations. Accordingly, we estimated hierarchical linear models (HLM; see Luke 2004; Raudenbush and Bryk 2001) to statistically control for the nesting and interdependence among the equations and to accommodate individual-level heterogeneity. The HLM results appear in Table 5.

TABLE 5
Salespeople's Compensation Model Parameter Estimates (T-Statistics in Parentheses and Standard Errors in Square Brackets): Multilevel Regressions Estimation

	International Companies		National Companies	
	Dependent Variable		Dependent Variable	
	Model 1: Take-Home Pay[c]	Model 2: Ratio of Variable to Fixed[c]	Model 1: Take-Home Pay[c]	Model 2: Ratio of Variable to Fixed[c]
Job challenge	.67* (49.37) [.01]	−.30* (−20.49) [.01]	.47* (49.25) [.01]	−.42* (−42.98) [.01]
(Job challenge)[2]	−.11 (−7.71)* [.01]		−.05 (−5.35)* [.01]	
Firm size[a]	2×10^{-4} (−.02) [.01]	.04 (2.74) [.02]	7×10^{-3} (.77) [.01]	.164* (18.12) [.01]
Cost of living	.30* (26.34) [.01]		.25* (28.09) [.01]	
Ratio of variable to fixed[b]	.46 (44.88)* [.01]		.63 (79.37)* [.01]	
Excess employee's taxes[d]		.53 (33.80) [.02]*		.59 (60.14) [.01]*
Employer's taxes		.24* (18.17) [.01]		.16* (17.89) [.01]
R[2]	.48	.22	.48	.33

*$p < .0001$.
[a]We measured this variable as the natural logarithm of sales.
[b]We measured this variable as a natural logarithm.
[c]We mean-centered these variables by industry.
[d]To avoid multicollinearity, we use this variable in place of the variable employee's tax burden. We run a regression of the following form: Employee's tax burden = constant + β × (employer's tax burden). We use the residuals of this regression model, called "excess employee's."

To assess confidence in the robustness of the results, we also analyzed the data with competing techniques. Specifically, we estimated the parameters of Equations 1 and 2 using ordinary least squares (OLS). We also treated the models as simultaneous equations in seemingly unrelated regressions (SUR). The levels of significance for SUR coefficients were higher than those for OLS because of the SUR model's efficiency.[7] Thus, although we model the data accurately with respect to their hierarchical structure and present the HLM results, it is encouraging that the theoretical substantive findings hold even when uncovered through less sophisticated techniques. Finally, we estimate separate models for national and international firms, whose compensation practices may reflect a need to harmonize compensation over all the locations in which the international firm operates (Gooderham, Nordhaug, and Ringdal 1999).

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[7]Furthermore, we use Breusch and Pagan's (1980) Lagrange-multiplier test to check whether the system is more efficient than single equations and find that it is significantly more efficient (λ_{LM} = 177.11 and 614.97 for salespeople working in international and national companies, respectively, distributed as a chi-square with 1 degree of freedom [$p < .0001$]). The estimators in these alternative approaches (i.e., separate OLS regressions or the SUR system) are comparable (i.e., in sign and significance) to those presented in Table 5 for the HLM model.

Estimation Procedures for Sales Managers

We use the same procedure described previously to calibrate Models 1 and 2 for the sample of sales managers, focusing on and presenting the HLM estimation but also exploring and confirming through OLS and SUR. Again, we carry out the estimation separately for international and national companies. Given that the HLM models statistically control for the hierarchical structure of salespeople being nested within country, and thus are isomorphic to the data structure, we present the HLM estimates of the parameters of the two equations in Table 6. Again, we confirm the HLM analytics by the results of the OLS and SUR approaches.

In addition to these analyses, we performed several alternative analyses (i.e., per country) to test the stability of our results for both salespeople and sales managers. The results were substantially similar to those in Tables 5 and 6, in both direction and significance of impact.

Results

Our results for salespeople (Table 5) and sales managers (Table 6) are remarkably similar in the qualitative nature of the effects. Furthermore, international and national companies are remarkably similar in the nature of effects, though

TABLE 6
Sales Managers' Compensation Model Parameter Estimates (T-Statistics in Parentheses and Standard Errors in Square Brackets): Multilevel Regressions Estimation

	International Companies		National Companies	
	Dependent Variable		Dependent Variable	
	Model 3: Take-Home Pay[c]	Model 4: Ratio of Variable to Fixed[c]	Model 3: Take-Home Pay[c]	Model 4: Ratio of Variable to Fixed[c]
Job challenge	.50** (25.96) [.02]	−.28** (−14.89) [.02]	.48** (25.65) [.02]	−.31** (−15.65) [.02]
(Job challenge)[2]	.07 (3.68)** [.02]		.06 (3.36)* [.02]	
Firm size[a]	.04 (2.85) [.01]	.14** (7.65) [.02]	.02 (1.01) [.02]	.19** (6.37) [.02]
Cost of living	.12** (6.71) [.02]		.16** (7.97) [.02]	
Ratio of variable to fixed[b]	.40 (25.66)** [.02]		.51 (30.78)** [.02]	
Excess employee's taxes[d]		.47 (24.42) [.02]*		.56 (27.74) [.02]**
Employer's taxes		.30** (16.66) [.02]		.27* (14.91) [.02]
R[2]	.49	.28	.45	.32

*$p < .001$.
**$p < .0001$.
[a]We measured this variable as the natural logarithm of sales.
[b]We measured this variable as a natural logarithm.
[c]We mean-centered these variables by industry.
[d]To avoid multicollinearity, we use this variable in place of the variable employee's tax burden. We run a regression of the following form: Employee's tax burden = constant + β × (employer's tax burden). We use the residuals of this regression model, called "excess employee's."

the magnitudes vary. We discuss each of the hypothesis tests in turn.

Our parsimonious model of net pay level and variable pay usage yields four systems of equations (international and national firms, each for managers and salespeople). Model variance explained is respectable, ranging from 22% to 49%. The results conform overall to the hypotheses. We turn now to how job challenge operates for different take-home-pay levels. We postulate that the level of take-home pay increases at a higher rate with job challenge for sales managers than for salespeople (H_1). To test for the equality of job challenge and (job challenge)^2 coefficients across the salespeople and sales manager models, we perform Chow (1960) tests. The tests reject the null hypotheses (at .0001 significance); thus, the beta coefficients change across subsamples ($F_{(1, 11468)} = 3444.80$ and $F_{(1, 7909)} = 1669.26$ for job challenge in national and international firms, respectively; $F_{(1, 11468)} = 543.45$ and $F_{(1, 7909)} = 438.44$ for [job challenge]^2 in national and international firms, respectively). Then, we take the first derivative of each model (i.e., for salespeople and sales managers) and calculate the job challenge level, where the slope for the sales manager model is higher than that for the salespeople model. We find that when a sales manager's job challenge level is higher than 575 Hay points (which holds for 52% of the sales manager sample), the marginal compensation for the sales manager is higher than that for the field salesperson.[8] With a mean of 600 points (SD = 146), many managers operate in a much higher zone of Hay points than most salespeople (M = 405 points, SD = 121). Thus, H_1 is marginally supported.

Next, we turn to the impact of job challenge on the fraction of variable pay in the employee's paycheck (calculated before taxes). H_2 posits that a lower fraction of pay is based on objective performance indicators and awarded in variable pay (and thus, salary is a higher fraction of total pay) as jobs become increasingly challenging. Our results support these hypotheses for both sales managers and salespeople in either national or international firms.[9]

We hypothesize that firms emphasize variable pay more in pay packages as tax regimes become more burdensome at either the salesperson level (H_3) or the employer level (H_4). On the employee side (H_3), the more pay employees give over to taxes, the more burdensome the tax system is. The empirical evidence shows that burdensome tax regimes on the employee side indeed drive firms to base more of the paycheck on variable pay; thus, our empirical results support our prediction for H_3 for both types of firms and both

types of sales professionals. On the employer side (H_4), we hypothesize that as increasing pay forces employers to assume higher payroll tax burdens, firms respond by increasing their reliance on variable pay to fill out the paycheck. In other words, firms in burdensome systems easily enter into zones of high payroll taxes. They prefer to do so when the customer generates results rather than relying on sales managers to award salary. The results support H_4 for both salespeople and sales managers in both national or international companies.

Finally, H_5 postulates that pay structure and pay level should be studied together; our empirical results bear this out as well. Take-home pay rises significantly with the fraction of pay that is variable for any type of company and for both sales managers and salespeople.

Beyond our stated hypotheses, most of our baseline influences also operate as expected. As we noted previously, the national/international nature of the company and the type of industry play roles in terms of magnitude of effects. Firms offer more take-home pay in countries with higher costs of living. Surprisingly, there is no difference between larger and smaller firms in terms of take-home pay to salespeople or sales managers. Finally, the larger the firm, the higher is the fraction of pay that is variable for both salespeople (in national firms) and sales managers (in both national and international firms).

Discussion and Managerial Implications

Our results show that the realized pay levels and structures of more than 18,000 people in B2B field sales roles reflect an apparent balancing of two conflicting pressures: the economic imperative (to reward better performers by heightening pay dispersion) and the compensation differential compression resulting from high tax regimes.

Our findings (e.g., the higher pay levels in higher cost-of-living countries) are consistent with the hypothesis that firms target take-home pay. Our results further suggest that firms adapt to the tax environment to make sure that not just pretax pay but also posttax pay rewards differentials in performance in a meaningful way. Compensation research, though copious, is almost exclusively conducted within a single country, usually in North America. Cross-country comparisons are rare (Werner and Ward 2004). Tax considerations do not enter into single-country studies. Our setting allows for a rare examination of how international considerations drive compensation. Notably, our results offer strong support for agency-theoretic and management theory–based predictions about the effect of tax burdens on optimal compensation.

Our results indicate that the effect of job challenge on take-home pay for field sales is positive (for graphic representations, see the Web Appendix at http://www.marketing power.com/jmnov09). At some point, salespeople whose tasks become more challenging (i.e., with higher levels of Hay points) may be promoted (into sales management jobs) rather than paid more as field salespeople; our results show that organizations pay more to motivate people to take higher-level sales jobs. Our results also indicate that job

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[8]We thank an anonymous reviewer for suggesting this line of argument.

[9]A rival explanation for these findings is that firms reward not the job but rather the jobholder and that challenging jobs are staffed by people with high levels of human capital. For the sales occupation, two commonly used indicators of human capital are job tenure and age. We tested this rival explanation on the French data by including job tenure and age in the models without job challenge. The results show that when job tenure and age replace job challenge, the explained variance drops sharply. Therefore, we surmise that firms appear not to use cues such as demographics to fill sales jobs.

demands are not a surrogate for human capital; the correlations between features of the individual and demands of the job are small. This mirrors O'Shaughnessy, Levine, and Cappelli (2001), who study more than 50,000 managerial and professional jobs. They also use Hay points to measure job design and find (p. 20) that Hay points offer "a far more complete measure of skill and job requirements than those used in the past to explain wage outcomes."

Our analysis finds that the structure of pay influences the level of pay. Sales personnel cannot achieve the highest levels of net pay on salary alone. Overall, the greater the proportion of pay that is variable, the higher is the level of net pay. In other words, volatility is one price of high take-home pay. In this way, firms both autofund high pay and reduce their risk of overpaying salespeople who fail to achieve. This supports agency theory's contention that variable pay solves many incentive problems.

However, variable pay is not a panacea. We find that, all else being equal, firms rely proportionately less on variable pay for both field salespeople and sales managers for jobs that are more challenging. A likely explanation is that even for the sales profession, performance becomes difficult to observe (i.e., specify and monitor in a timely way) as job challenge increases. Therefore, firms rely proportionately more on salary under these conditions. This creates a tension: Firms use some variable pay to achieve high take-home-pay levels, but they are obliged to control the overall reliance on variable pay for high-challenge jobs, all else being equal.

However, all else is *not* equal when the differential burden imposed by different countries' tax regimes is considered. Our analysis shows that, on the margin, more burdensome tax regimes drive firms to offer higher levels of variable pay. Without a suitably strong incentive for performance, sales personnel in highly burdensome tax regimes might wonder whether the paycheck is worth their effort because in these tax regimes, posttax income differentials can be compressed to levels that leave employees wondering why they should work harder (Gottschalk and Smeeding 1997). Our findings suggest that firms can combat this loss of motivation by pushing down salary and/or increasing variable pay. This is a way to reduce the high cost of taxes paid on low performers by basing more of a salesperson's remuneration on sales results. This practice widens the gap—artificially reduced through taxes—between low and high sales performers.[10]

Another noteworthy finding is that larger B2B companies in Europe tend to rely more on variable pay (for salespeople in national firms and for sales managers in either national or international firms). Reliance on variable pay may be explained by the governance costs of making and defending salary judgments on a large scale, as suggested by prior studies in the United States (John and Weitz 1989).

An issue potentially more fundamental than how to compensate salespeople is how to compensate sales managers. Across the board, the message seems to be clear: As managerial performance is multiplied through salespeople's performance, the sales manager's role is critical to the success of the firm. More bluntly, a bad salesperson may lose a few of his or her sales, but a bad sales manager may negatively affect dozens or even hundreds of salespeople. Our results show that sales managers, much like chief executive officers, can have an important multiplier effect that justifies paying them at increasing rates as job challenge rises. Moreover, because they have more challenging jobs, they should be rewarded with higher salaries.

Managerial Implications for Firms[11]

The findings have important implications for decision makers, who, according to a recent survey (Deloitte and Oracle 2008), report (1) managing sales representatives in multiple countries (52% of the respondents), (2) being dissatisfied with their sales compensation program (only 41% of the respondents are satisfied or very satisfied), and (3) conducting a compensation plan review at least annually (77% of the respondents). Thus, providing insights into the design of compensation plans in the global arena appears to be of strategic importance.

The compensation actions that decision makers of firms moving to Europe should take depend on how high the tax regime is. For example, it is inadvisable for U.S. firms to transfer their sales force compensation plan structures to Europe. In the United States, a married salesperson with two dependent children and earning the equivalent of €50,000 takes home approximately 85% of his or her total paycheck after social charges and income tax. The corresponding amount in Europe is approximately 70%. For a total paycheck of €100,000, U.S. salespeople get to keep approximately 80% of their earnings, whereas some of their European counterparts keep only 55%. We offer a relatively simple solution to decision makers: Decrease the sales force's fixed salary in high-tax countries and/or favor incentive compensation. For example, the ratio of variable to fixed salary of a French salesperson working in the industrial goods sector for an annual compensation of approximately €50,000 is typically set by local firms at 20%. In the United Kingdom, where the tax burden is lighter, the corresponding ratio is lower (i.e., at 11%).

The need for firms to deal with tax policy discrepancies across national boundaries is also evident when compensating sales managers. Again, we offer an easy solution to decision makers who wonder how to compensate sales managers: Decrease the ratio of variable to fixed pay as they become more and more valuable. For example, the

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[10]For example, Segalla and colleagues (2006), who study compensation preferences of sales managers for salespeople, find that managers from Germany (i.e., a high-tax-burden country) are less likely than managers from Anglo-Saxon countries (where taxes are lower) to favor incentive compensation. However, the tax regime drives firms to pay for performance. Ironically, in a national culture with a stronger desire for uncertainty avoidance, this pay structure itself creates uncertainty for sales personnel.

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[11]We argue that firms act optimally in the aggregate (though individual firms may act suboptimally). We thank Ajay Kohli for this insightful comment.

ratio of variable to fixed compensation of a sales manager whose job challenge is evaluated at 650 Hay points (e.g., who carries moderate supervisory responsibilities) should be higher than that of a sales manager whose job challenge is evaluated at 750 Hay points (e.g., who is in charge of a major national team within an industry segment). In the financial sector, for example, our data show that such ratios are typically set at 8% and 4% for the two roles, respectively.

Implications for Salespeople

Sales professionals transferred to a high tax regime need to be aware of the total cost of their compensation to their employer (i.e., including social charges). For example, the social taxes for a European employer of the salespeople described previously in the €50,000 or the €100,000 range can represent as much as 50% of gross total pay. That cost is likely to drive employers to offer compensation plans with a higher ratio of variable pay to salary. If salespeople resist such decisions successfully (e.g., through labor actions), they are put at risks for continued employment in the case of a market downturn.

Of further importance to salespeople is the career moves they should make. Again, we offer a relatively simple solution to them: Take into account how challenging the job is. When the job becomes more strategic and accountable and evolves from consultative, value-added selling (i.e., a job challenge level equal to approximately 570 Hay points) to senior relationship manager (i.e., involving strong system understanding and focus, implying a job challenge level equal to 700 Hay points), salespeople are better off in sales management roles (i.e., leading and coordinating efforts of other salespeople, with a job challenge level also equal to 700 Hay points). In a consumer goods industry, their corresponding take-home pay is likely to be approximately 11% higher for a sales management than a selling job.

Limitations and Conclusions

This study has its limitations. Pay is a complex phenomenon, driven by many considerations and subject to path dependence. Ours is a parsimonious, cross-sectional, as-if model in only five countries. Our measures, which come from multiple sources, are approximate (e.g., we use a prototypical salesperson tax rate), and the sampled firms may not be wholly representative of B2B firms, even in Western Europe. By using better measures or expanding the investigation to other types of benefits, further research could yield more insights and establish the validity of the mechanisms proposed here. In addition, although the Hay measure of job challenge is widely used in various industrial sectors throughout Europe, a study that includes a broader spectrum of job challenge measures would enable researchers to test the generalizability of our findings. Nevertheless, our study is the first sales compensation study to examine the sales (or sales manager) requirements at a micro level rather than the average person filling the selling job (e.g., age, education) as other studies in the sales force compensation arena have done.

Taken together, these findings suggest that an optimal (first-best) compensation plan may not be feasible. The fundamental compensation challenge in B2B field selling is to reward better efforts and higher ability in the face of an uncertain relationship between the salesperson's (or sales manager's) inputs and the customer-mediated outputs. If we factor in high income taxes, the pretax pay distinctions necessary to leave motivating sums in employee bank accounts become large. Our results suggest that managers use "the voice of the market" by weighting variable pay more heavily in the total pay package to meet this challenge—an important concern that deserves further scrutiny by scholars of sales force management.

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