

**DELEGATING PRICING AUTHORITY TO THE SALES FORCE:
WHY LESS MAY BE MORE**

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Abstract

Economists have long understood the importance of co-locating decision authority with the knowledge that is valuable to those decisions. Following this prescription, marketing scholars have developed strong theoretical arguments in favor of delegating pricing authority to the sales force. Empirical work, however, reveals a significant number of sales organizations yielding only minimal authority to their salespeople. Moreover, firms that grant pricing authority to their sales force generate a lower level of profits than those that limit pricing authority. Given this divergence between theory and practice, we present two reasons that could potentially mitigate the optimality of delegating pricing authority to the sales force. First, we hypothesize that limiting pricing authority may be attractive to the firm because it eliminates a specific type of agency cost, namely, the sub-optimal substitution of selling effort by price discounting. Second, we posit that pricing authority is often curtailed because such freedom may be incompatible with a control system that is designed to optimize several other considerations. We test our hypotheses on a sample of 222 German sales organizations and find that the data are consistent with our expectations. Overall, these findings advance the literature by suggesting a contingent approach with respect to the price-delegation decision.

Delegating Pricing Authority to the Sales Force: Why Less May be More

Introduction

Economists have long understood the importance of co-locating decision authority with the knowledge that is valuable to those decisions. As early as 1945, Hayek highlighted the inability of centralized decision-makers to effectively solve organizational problems lower down in the hierarchy. More recently, Jensen and Meckling (1992) suggest that as long as agency problems are minimal, assigning decision rights to individuals who have the decision-relevant knowledge increases efficiency.

Marketing scholars have presented similar ideas in describing the allocation of decision rights within the sales unit. Lal (1986), for example, makes the case that delegating pricing authority to the sales force will be more profitable than centralization because salespeople often possess superior information about customer willingness-to-pay.¹ Weinberg (1975) shows that salespeople who are paid a commission based on gross margin *and* who are given control over price will set prices so as to maximize simultaneously their own income and the company's profits. Surprisingly, despite these powerful arguments in favor of delegating pricing authority to the sales force, empirical work reveals a significant number of sales organizations yielding only minimal authority to their salespeople. Moreover, firms that grant pricing authority generate lower levels of profits than firms that limit pricing authority (Stephenson, Cron, and Frazier 1979). Given this divergence between theory and practice, our objectives in this research are to: (i) identify factors that could potentially mitigate the optimality of delegating pricing authority to the sales force, and (ii) investigate the empirical validity of the proposed mitigating factors.

Accordingly, in this research, we suggest two related reasons why delegation may be less profitable than centralization. First, following the work of Jensen and Meckling (1992), we

¹ In his model, price delegation comes at a cost in that the firm must pay salespeople a compensation premium (information rent) to motivate them to vary prices appropriately for different customers.

posit that agency costs could potentially mitigate the benefits of delegating pricing authority to the sales force. In our context, agency costs refer to the inefficiencies arising from a lack of perfect goal alignment between employees and owners. Recent work by Joseph (2001) is particularly germane in this connection. His model reveals that salespeople have a tendency to make trade-offs between effort and price that are inconsistent with the wishes of the firm. Interestingly, this type of agency cost is also of much concern to practitioners. Specifically, sales managers often complain that price latitude causes salespeople to take the path of least resistance, i.e., use discounting rather than expend effort on selling (Stephenson, Cron, and Frazier 1979, p. 26). Given the possibility of such inefficient trade-offs, firms are often unable to benefit from the informational benefits of price-delegation.

The work of Joseph (2001) also reveals that limiting pricing authority can sometimes reduce this type of agency cost. In effect, limiting pricing authority forces the salesperson to expend greater effort on prospecting because shirking on this task cannot be offset by price discounting. In other words, limiting pricing authority prevents the salesperson from making sub-optimal trade-offs between price and effort. Moreover, in some environments, the benefit obtained from inducing greater effort on prospecting outweighs the loss arising from the inability to customize prices.²

The second reason why centralization may be more profitable than delegation pertains to the manner in which sales force control systems are designed. The design of control systems includes such elements as the choice of metrics utilized in the compensation plan (gross margins or dollar sales), the actual weight placed on the performance metrics, and the level of monitoring (Basu, Lal, Srinivasan, and Staelin 1985; Joseph and Thevaranjan 1998). Clearly, these control elements are designed not only to support the price-delegation decision but also to respond to various other conditions facing the firm. These conditions typically include the selling environment, the precision of the available metrics, risk-aversion

Nevertheless, through numerical examples, Lal (1986) demonstrates that price delegation will invariably improve firm profits.

² From a technical point of view, Joseph obtains these effects because he allows the effort devoted to prospecting to influence the type of customer (high-valuation or low-valuation) that the salesperson encounters. This is in contrast to Lal's work wherein the price-sensitivity of the sales response function is better observed by the salesperson, but not influenced by the effort choices of the salesperson.

of salespeople, extent of environmental uncertainty, and the cost of monitoring. Thus, although limiting authority may be sub-optimal when viewed in terms of the economic prescription to co-locate decision authority with the knowledge that is valuable to those decisions, it may well be the best decision given the objective of designing a control system that is globally optimal.

To illustrate this argument, consider a firm wishing to benefit from the informational benefits of price-delegation. Such a firm also needs to utilize incentives based on gross margins. However, in some scenarios, the firm may wish to avoid setting commissions based on gross margins because such an action could reveal the firm's cost structure to the competition. This revelation could prove to be too costly from a strategic point of view (Churchill, Ford, and Walker 1997, p. 226). Thus, in such situations, a profit-maximizing firm could well choose to follow a strategy of centralizing pricing authority despite the informational advantages of price-delegation. Similarly, a firm faced with high monitoring costs may not be able to install an adequate number of supervisory personnel. This lack of supervision may prevent the firm from verifying if the salesperson is making the right trade-offs between effort and price; consequently, here also, limiting pricing authority is the best strategy.

In short, our essential point here is that the decision to delegate pricing authority will likely be made in the context of designing a control system that is globally optimal. What may appear as a sub-optimal decision in the context of one consideration may well constitute the global optimum. Consequently, any study that examines the issue of delegating pricing authority to the sales force must explicitly take into account the nature of the overall control system.

In our empirical research, we investigate the manner in which pricing authority is delegated to the sales force in a sample of 222 German sales organizations. Similar to Stephenson, Cron, and Frazier (1979), we find considerable heterogeneity among firms with respect to this decision. Interestingly, we find that a significant proportion of firms, namely 28%, choose to yield *no* pricing authority to the sales force. In these cases, price is determined exclusively by management. Another 61 % of the firms yield only limited pricing authority to

their salespeople. Here, salespeople are allowed to set prices within a pre-specified range. Finally, only a relatively smaller percentage of firms, namely, 11%, follow the theoretical prescription of providing their salespeople with full pricing authority. In these cases, salespeople are given the freedom to set any price above marginal cost.³

We are also able to explain this heterogeneity in behavior. Following Joseph's (2001) analytical finding that the optimality of delegating pricing authority will vary non-monotonically with the effort cost of prospecting, we derive our primary hypothesis that the optimality of delegating pricing authority will vary non-monotonically with the fraction of effort devoted to prospecting. Interestingly, we *do* find support for this non-intuitive hypothesis in our sample of firms. In addition, as anticipated, we also find that the decision to delegate pricing authority is influenced by the nature of the overall control system at the firm. Specifically, we find that price-delegation is more likely at firms that are able to utilize incentives based on gross margins but less likely as the span of control increases (lower intensity of monitoring).

Overall, our efforts point towards a contingent view with respect to the price-delegation decision. Early work in the marketing literature suggests that price-delegation will invariably improve firm profits (Lal 1986; Weinberg 1975). The practitioner-oriented literature, on the other hand, has generally been more circumspect about delegating pricing authority to the sales force. Based on their consulting experience, Dolan and Simon (1996), for example, comment that it seems to be better to err on the restrictive side, i.e., offer less pricing authority rather than too much pricing authority. They also report the practitioner sentiment that "letting the sales force set prices is about the same as hiring a fox to guard the hen house." *Clearly, the contingent view developed in this research has the potential to assimilate these divergent prescriptions and offer a more refined understanding of the topic.*

³ The corresponding percentages in the Stephenson, Cron, and Frazier (1979) study, which is U.S.-based, are 29%, 48%, and 23%, respectively.

The rest of the paper is organized in the following manner. In the next section, we build on the extant literature and derive our hypotheses. We then describe the sample of sales organizations on which we conduct our empirical analysis. Next, we present our empirical findings and discuss the main implications. Finally, we summarize our findings and conclude by outlining directions for future research.

Development of Hypotheses

We begin by developing our hypothesis pertaining to the impact of agency costs on the price-delegation decision. We then develop our hypothesis pertaining to the impact of the control system on the price-delegation decision.

Impact of agency costs

It is instructive to first review the work of Joseph (2001) in some detail. He analyzes a model in which effort is two-dimensional. Effort devoted in the first dimension (prospecting) increases the likelihood of encountering customers with relatively high valuations for the product. Effort devoted in the second dimension consists of explaining the features of the product to the customer via face-to-face communication. Within the model, incentives affect only the amount of effort devoted to prospecting. In other words, the second effort is included only for logical completeness.

Broadly, Joseph considers the impact of two forces that influence the optimality of the price-delegation decision. On the one hand, providing pricing authority to individual salespeople empowers them to use their superior information about customer willingness to pay and thereby conclude a greater number of transactions. On the other hand, providing the salesperson with pricing authority could lead to sub-optimal trade-offs between effort and price. Given these opposing considerations, Joseph's primary objective is to examine the net effect of these two forces in determining the optimal level of pricing authority.

Within the model, demand is characterized as follows. The market consists of two segments, A and B. Customers belonging to segment A have reservation values that are independently distributed and come from the uniform distribution $[1-\delta, 2-\delta]$. Customers belonging to segment B have reservation values that are also independently distributed but come from the uniform distribution $[0, 1]$. The parameter, δ , reflects the extent of overlap between the two segments. The first effort expended by the salesperson, ϕ , is assumed to impact the quality of prospecting. Specifically, as the salesperson expends greater effort on this dimension, a greater fraction of the customers encountered by the salesperson is drawn from segment A. The second effort reflects the care devoted to face-to-face communication and helps the salesperson complete the sale. As such, this effort is simply proportional to the number of customers, N , targeted by the salesperson.

The key notion of information asymmetry is incorporated as follows. Upon meeting a customer, the salesperson becomes aware of the exact amount that the customer is willing to pay. The firm, on the other hand, is only aware that the market consists of the two segments. Moreover, although the firm observes the prices paid by the customer, the overlap parameter, δ , prevents the firm from inferring the amount of effort devoted to prospecting. For example, if the salesperson obtains a price in the interval $[1 - \delta, 1]$, the firm cannot tell whether the salesperson worked hard to identify a segment A customer or was simply lucky in obtaining a segment B customer with a high reservation value. A second parameter, λ , reflects the effort cost of prospecting, i.e., the effort required to identify a customer that belongs to segment A.

In this research context, the main insight offered by Joseph is as follows. He finds that price delegation is not optimal in all parts of the parameter space. Specifically, for a given value of the overlap parameter, δ , the optimality of delegating pricing authority varies non-monotonically with the effort cost of following a high-quality prospecting strategy. In particular, when λ is relatively high or relatively low, delegating pricing authority to the sales force is the optimal strategy. However, when λ takes on intermediate values, limiting pricing authority is the optimal strategy (see Figure 1).

The intuition behind these findings is as follows. When λ is relatively low, the salesperson is willing to invest effort on prospecting because the cost of prospecting is not significant. In this situation, there is no divergence in preferences between the firm and the salesperson with respect to the amount of effort that ought to be devoted to prospecting. As such, the firm yields pricing authority to the salesperson in order to obtain the benefits of price customization. Similarly, when λ is relatively high, both the firm and salesperson are in agreement that not much effort should be devoted to prospecting. As such, here also, the firm yields pricing authority to the salesperson in order to obtain the benefits of price customization. However, when λ takes on intermediate values, the salesperson's preferred trade-off between effort and price is different from that of the firm's. Thus, in this instance, the firm is better off limiting the extent of pricing authority. This ensures that the salesperson invests sufficient amounts of effort on prospecting.

Our challenge in this research is to employ the insight offered by Joseph's work towards formulating a hypothesis that can be tested empirically. With regard to an appropriate empirical strategy, recall that Stephenson, Cron, and Frazier (1979) explicitly examine the profit implications of delegating pricing authority to the sales force. This approach implicitly assumes that all firms under investigation face more or less identical conditions, which is unlikely to hold in real-life settings. Thus, we take a somewhat different approach. Specifically, we posit that each firm will opt for a level of delegation that maximizes its profits, given the conditions that it faces. Thus, by identifying conditions that influence the extent of price-delegation and incorporating them in a predictive model, one can indirectly test the dynamics presented in Joseph (2001).

Accordingly, we use the relationship derived in Joseph's work that the amount of effort induced on prospecting will be inversely related to the effort cost of prospecting.⁴ Thus, as per his model, the proportion of effort devoted to prospecting, namely, $\phi/(\phi + N)$ will decrease monotonically with the effort cost of prospecting. Consequently, this fraction can be logically employed as a proxy for the effort cost of prospecting. Moreover, since the

optimality of delegating pricing authority varies non-monotonically with the effort cost of prospecting, the optimality of delegating pricing authority will also vary non-monotonically with the proportion of effort devoted to prospecting. Formally, we have:

H₁: When the proportion of effort devoted to prospecting is relatively low or relatively high, the likelihood of delegating pricing authority is expected to be high. When the proportion of effort devoted to prospecting takes on an intermediate value, the likelihood of delegating pricing authority is expected to be low.

Impact of the control system

As mentioned previously, the design of the control system is likely to be influenced by several factors. Typically, the control system is designed not only to support the price-delegation decision but also to accommodate various other conditions facing the firm. Two such conditions include the metric employed for the incentive scheme and the cost of monitoring. Here, we posit that the utilization of incentives based on gross margins and intensity of monitoring will influence the probability of delegating pricing authority to the sales force. This is because offering incentives on gross margins (as opposed to sales revenue) can reduce the motivation of the salesperson to engage in sub-optimal trade-offs (Weinberg 1975). Similarly, intense monitoring can also significantly reduce the ability of the salesperson to engage in sub-optimal trade-offs between effort and price.

For these reasons, we state

H_{2a}: The utilization of incentives based on gross margins in the control system will increase the likelihood of delegating pricing authority to the sales force.

H_{2b}: A high intensity of monitoring in the control system will increase the likelihood of delegating pricing authority to the sales force.

⁴ In Joseph's model, effort is induced only via incentives. In general, effort can be induced either through incentives or monitoring. At any rate, whatever mechanism is used to induce effort, the amount of effort induced on prospecting will always be inversely proportional to the effort cost of prospecting.

Estimation Model

Given our previous discussion, we specify the following model for estimation purposes:

$$\begin{aligned} \text{Probability (Delegating Pricing Authority)} = & \\ & \beta_0 + \beta_1 \times \text{Fraction of Time Devoted to Prospecting} + \\ & \beta_2 \times (\text{Fraction of Time Devoted to Prospecting})^2 + \\ & \beta_3 \times \text{Utilization of Incentives based on Gross Margin} + \\ & \beta_4 \times \text{Intensity of Monitoring.} \end{aligned} \quad (1)$$

Based on our conceptualization, we expect $\beta_1 < 0$, $\beta_2 > 0$, $\beta_3 > 0$, and $\beta_4 > 0$.⁵

Data and Measures

Data

We utilize data collected by Krafft (1999) in his study pertaining to sales force control systems. His data were obtained via a mail survey of 1,099 chief sales executives of German sales forces. A second mailing followed the initial mailing four to six weeks later. The survey was completed approximately twelve weeks after the first mailing and resulted in a response rate of 24.6%. This sample is characterized by large firms and comprises observations from the financial services sector, pharmaceutical goods firms, industrial goods companies, and the consumer goods industry. The average annual sales volume in the data set is DM 291.2 million (approximately US \$ 162 million). A comparison of the sample with other German studies shows that this data set corresponds well with typical levels of annual sales, sales force size, age, tenure, and total pay.

Dependent Variable

The survey measures the extent of pricing authority given to the sales force via the question, “The general pricing authority of your salespeople is” followed by the choices, “0: No pricing authority (prices are determined by the management,” “1: Restricted (salesperson

⁵ Given full data availability, one could estimate a simultaneous system of equations that includes: Utilization of Gross Margin Incentives = f (Extent of pricing authority, strategic considerations, etc.) and Level of Monitoring = g (Extent of pricing authority, precision of performance metrics, level of environmental uncertainty, risk-preferences, etc.).

determines prices within a pre-specified range),” and “2: Unrestricted (salesperson has full authority).” In our empirical work, we transformed these responses to the $[0, 1]$ interval by using the multiplier 0.5.

Independent Variables

Proportion of Effort Devoted to Prospecting. The survey provides information about the fraction of time spent on: (i) sales calls, (ii) activities such as call preparation, merchandising, and service, (iii) travel / waiting. From a theoretical point of view, we need to focus on the response given in item (ii). Although this item also includes activities other than prospecting, these may also be subject to the essential trade-off described in Joseph’s model. Towards this end, note that although the model described by Joseph is in the context of prospecting effort, the key dynamics outlined in the model apply to a whole cluster of activities. For instance, one could outline similar dynamics wherein the primary effort is one of providing service and the market consists of customers that differ in their valuations of this type of effort. In essence, we suggest that this non-monotonic effect applies in a somewhat broader manner than that described within the model. For this reason, we utilize the response in item (ii) to examine the key dynamics described in our first hypothesis. For expositional convenience, however, we will simply refer to this cluster of activities as prospecting.

From a measurement point of view, however, the response pertaining to the proportion of time spent on sales calls (item (i)) is likely to be the most accurate. This is because it is often recorded in call logs. In addition, sales managers are likely to be very conscious of this fraction since it is frequently used for decisions regarding sales force sizing and specialization (see, for example, Moriarty and Swartz 1986). In contrast, time spent on travelling/waiting is likely to be less precise. Moreover, time spent on travel/waiting can also be used to rehearse/ prepare for the upcoming sales call. Thus, a better measure to represent the effort devoted to prospecting-type activities is given by 100 less the fraction of time devoted to the actual sales call. We use this indirect measure for our empirical work. However, we also report findings wherein we directly employ the response given to item (ii). As we shall demonstrate, the findings do not differ much upon employing this direct measure.

In our sample, the fraction of effort devoted to prospecting varies from 30% to 100%. The two observations that take values greater than 95% are likely to be described by a support salesperson. We admit that while it is incorrect to label these responses as a high prospecting type of scenario, it does correspond to a situation wherein the firm would like to offer pricing authority to the sales force. This is because the opportunity to make sub-optimal trade-offs between effort and price simply does not arise. Again, for expositional convenience, we label these responses as firms characterized by a high proportion of prospecting because they mimic the dynamics of firms with a high proportion of prospecting.

Intensity of Monitoring. In straightforward fashion, we measure the intensity of monitoring via the number of salespeople supervised by the sales manager. The greater the number of salespeople monitored by a sales manager, the lower is the intensity of monitoring. In our empirical work, we find that a square root transformation provides a somewhat better fit; consequently, we utilize the square root of the number of salespeople supervised by the sales managers to serve as our proxy for the intensity of monitoring. This transformation suggests that impact of a unit increase in sales force size is larger at relatively small sales force sizes – an intuitively appealing property.

Utilization of Incentives Based on Gross Margins. The survey also reports the utilization of incentives based on gross margins. In straightforward fashion, we employ a dummy variable which takes the value 1 if such incentives are utilized, 0 otherwise. Overall, in our sample of firms, only about 16% of firms employ incentives based on gross margins although approximately 72% offer some amount of pricing authority to their salespeople. This finding underscores the importance of including other considerations that are likely to influence the design of the overall control system.

Covariates. To test the robustness of our results across alternative specifications, we include two other variables. The first variable that we include is the number of calls required to close a sale. Firms characterized by long selling cycles are likely to be promoting products that are intrinsically complex. Such products may inherently require a good deal of negotiation. For this reason, we expect length of the selling cycle to increase the likelihood of delegating pricing authority to the sales force (see Stephenson, Cron, and Frazier 1979, p.

21). The second variable that we include captures the intensity of competition. Clearly, competitive intensity is likely to play a significant role in determining the extent of pricing authority given to the sales force. Unfortunately, the literature is silent with respect to this question. Consequently, in our empirical work, we include both linear as well as non-linear terms for this variable.

The actual measures utilized for these variables is as follows. Calls to close is measured via the question, “How many sales calls are necessary in case of first purchases to close a sale?” For reasons of fit, we use the square root of this variable in our empirical work. Next, intensity of competition is measured in straightforward fashion via the question: “How strong do you perceive the intensity of competition in your market segment?” The responses to this last question are coded via a 7-point semantic differential scale going from Low to High.

Findings and Discussion

We begin by reporting the correlation matrix of our analysis variables (see Table 1). Table 1 suggests that multi-collinearity is not likely to be a serious problem. Interestingly, the correlation between Prospecting Fraction and Calls to Close is not significant, suggesting that the latter variable can potentially play a useful role as a covariate.

We next report findings from running a basic model with Prospecting Fraction, Utilization of Gross Margin Incentives, and Number of Salespeople per Sales Manager as the key independent variables. Since the dependent variable is both left- and right-censored, we estimate a double-limit tobit model. These findings are reported in the first column of Table 2 (Model 1). As hypothesized, we do find that the fraction of effort devoted to prospecting has a non-monotonic impact on the probability of delegating pricing authority to the sales force. Firms at which the sales process is characterized by relatively low or relatively high levels of prospecting tend to delegate pricing authority to the sales force. On the other hand, firms at which the sales process is characterized by intermediate levels of prospecting tend to limit the extent of pricing authority given to their salespeople. *This finding is consistent*

with our primary hypothesis that agency costs can mitigate the informational advantages of delegating pricing authority to the sales force.

Table 1. Correlation matrix of independent variables

(p-values in parentheses)

	Prospecting Fraction	Utilization of Gross Margin Incentives	Intensity of Monitoring	Calls to Close	Intensity of Competition
Prospecting Fraction	1.00 (0.00)				
Utilization of Gross Margin Incentives	0.04 (0.49)	1.00 (0.00)			
Intensity of Monitoring	-0.16** (0.02)	-0.14** (0.02)	1.00 (0.00)		
Calls to Close	0.09 (0.17)	0.11* (0.07)	-0.14** (0.02)	1.00 (0.00)	
Intensity of Competition	0.08 (0.23)	0.02 (0.73)	-0.23*** (0.00)	0.14** (0.03)	1.00 (0.00)

***: Significant at the 0.01 level

**: Significant at the 0.05 level

*: Significant at the 0.10 level

n=222

We also find that the utilization of incentives based on gross margins increases the likelihood of delegating pricing authority to the sales force. In other words, the use of incentives based on gross margins provides the freedom to delegate pricing authority to the sales force. In addition, we find that the intensity of monitoring also has a significant impact on the probability of delegating pricing authority to the sales force. Firms that monitor their salespeople intensely (i.e., firms with a lower span of control) are relatively more likely to

delegate pricing authority to the sales force. All coefficients are significant at the .05 level. *These findings suggest that the nature of the overall control system at the firm has a significant bearing on the price-delegation decision.*

Table 2. Probability of Delegating Pricing Authority
(Indirect Measure of Prospecting Fraction)

Variable	Expected Sign	Model 1 Estimate	Model 2 Estimate	Model 3 Estimate	Model 4 Estimate
PROSPECTING FRACTION	-	-0.0422** (0.0330)	-0.0397** (0.0386)	-0.0427** (0.0262)	-0.0375** (0.0377)
(PROSPECTING FRACTION) ²	+	0.0003** (0.0201)#	0.0003** (0.0242)	0.0003** (0.0145)	0.0003** (0.0206)
UTILIZATION OF GROSS MARGIN INCENTIVES	+	0.1883** (0.0326)	0.1883** (0.0327)	0.1853** (0.0313)	0.1837** (0.0261)
INTENSITY OF MONITORING (R, Square root transformation)	-	-0.0777** (0.0270)	-0.0761** (0.0252)	-0.0725** (0.0375)	-0.0715** (0.0283)
CALLS TO CLOSE (Square root transformation)	+		0.1615*** (0.0019)		0.1863*** (0.0002)
INTENSITY OF COMPETITION				-0.3723** (0.0222)	-0.4204*** (0.0063)
(INTENSITY OF COMPETITION) ²				0.0342** (0.0293)	0.0381** (0.0106)
Log likelihood		-169.73	-164.29	-166.09	-158.51

***: Significant at the 0.01 level
 **: Significant at the 0.05 level

R: reversed measure
 #: p-values in parentheses

n=222

To account for the fact that the nature of the selling process may also influence the extent of pricing authority delegated to the sales force, we estimate a second model that includes Calls

to Close as a covariate. The results from estimating this second model are reported in column 2 of Table 2 (Model 2). As expected, we find that firms characterized by long selling cycles are more likely to delegate pricing authority to their salespeople. Interestingly, the inclusion of this covariate does not affect the insights obtained from our basic model.

Next, to consider the impact of competitive intensity, we include our measure representing the extent of Intensity of Competition. As mentioned earlier, we include both linear and non-linear terms. The results of estimating this model are displayed in column 3 of Table 2 (Model 3). We find Intensity of Competition to be statistically significant. Specifically, we find that competitive intensity first decreases and then increases the extent of pricing authority given to the sales force. As before, the inclusion of this last covariate does not affect the insights obtained from our basic model (Model 1).

Finally, we estimate a full model that includes Prospecting Fraction, Utilization of Gross Margin Incentives, Intensity of Monitoring, Calls to Close, and Intensity of Competition as independent variables (see Model 4 in Table 2). All coefficients continue to have the same sign as in the partial models. Taken together, these findings convince us that our findings are robust to alternative specifications. Based on the changes of the Log Likelihoods of Model 2 through 4, we can conclude that the covariates in Model 2 and Model 3 cover different variances of the dependent variable. And, they significantly contribute to the explanation of the probability of delegating pricing authority to salespeople.

To obtain a better understanding of our findings, we utilize the coefficients estimated in our full model to graph the impact of Prospecting Fraction on the probability of delegating pricing authority to the sales force (see Figure 2). As reported above, we observe that the probability of delegating pricing authority to the sales force varies with the Prospecting Fraction and is lowest for intermediate levels of prospecting. More interestingly, as per our estimated coefficients, the probability of delegating pricing authority to the sales force may vary by as much as 0.50 across firms that differ with respect to the amount of prospecting in their sales processes. *Clearly, not only is the impact of Prospecting Fraction statistically significant but it is also large enough to be of managerial significance.*

We also report findings using our second, direct measure of prospecting. All coefficients in all models continue to have the same signs and remain significant, albeit at a lower level (see Table 3). These findings suggest that our findings are robust to the measure that we employ for our key independent variable, namely, Prospecting Fraction.

Summary and Implications

In many markets, customers vary significantly in their valuation of the firm's offerings. In these cases, management has to decide *whether* and *how much* pricing authority should be delegated to the sales force. The early literature in marketing advocates delegating pricing authority with a view to utilizing the superior market information of the salesperson. The practitioner-oriented literature, on the other hand, suggests a more restrictive policy. Thus, in this research, we propose and test a contingent view that can help accommodate these divergent prescriptions.

Essentially, we agree with the extant literature that price-delegation can potentially yield tremendous informational advantages. However, this latitude with respect to pricing authority gives rise to the possibility of a specific type of agency cost, namely, the sub-optimal substitution of selling effort by price discounting. Based on this consideration, we develop an empirically testable hypothesis that relates the fraction of time spent on prospecting to the magnitude of agency costs. A key finding in our empirical work is that firms are less prone to delegate pricing authority when these agency costs are likely to be fairly substantial. Substantively, this finding demonstrates that the informational advantages of price delegation need to be weighed against the magnitude of the agency costs that are likely to emerge.

A second related finding pertains to the impact of the control system on the price-delegation decision. Typically, control systems are designed with several considerations in mind. These considerations include such myriad factors as the selling environment, the precision of the available metrics, the risk-aversion of the salespeople, the extent of environmental uncertainty, and the cost of monitoring. In our empirical work, we explicitly control for two of these factors, namely, utilization of gross margin incentives and the intensity of monitoring. We find that firms that utilize gross margin incentives in their control systems as well as firms

that closely monitor their sales personnel can minimize sub-optimal substitution of selling effort by price discounting. Thus, these firms can, and do benefit from delegating pricing authority to their sales personnel. Conversely, firms that cannot employ gross margin incentives or employ close levels of supervision may restrict pricing authority because they suffer from an inability to limit agency costs. These firms thus cannot take advantage of the informational advantages of price-delegation.

Table 3. Probability of Delegating Pricing Authority

(Direct Measure of Prospecting Fraction)

Variable	Expected Sign	Model 1 Estimate	Model 2 Estimate	Model 3 Estimate	Model 4 Estimate
PROSPECTING FRACTION	-	-0.0163* (0.0769)	-0.0155* (0.0849)	-0.0170* (0.0549)	0.0163* (0.0561)
(PROSPECTING FRACTION) ²	+	0.0002* (0.0623)	0.0001* (0.0757)	0.0002** (0.0373)	0.0002** (0.0403)
UTILIZATION OF GROSS MARGIN INCENTIVES	+	0.1883** (0.0342)	0.1807** (0.0378)	0.1871** (0.0309)	0.1820** (0.0292)
INTENSITY OF MONITORING (R, Square root transformation)	-	-0.0768** (0.0280)	-0.0726** (0.0346)	-0.0721** (0.0382)	-0.0694** (0.0369)
CALLS TO CLOSE (Square root transformation)	+		0.1681*** (0.0019)		0.1931*** (0.0003)
INTENSITY OF COMPETITION				-0.3726** (0.0230)	-0.4269*** (0.0063)
(INTENSITY OF COMPETITION) ²				0.0343** (0.0296)	0.0389*** (0.0098)
Log likelihood		-172.24	-166.77	-168.74	-161.20

***: Significant at the 0.01 level
 **: Significant at the 0.05 level
 *: Significant at the 0.10 level

R: reversed measure
 #: p-values in parentheses

n=222

Overall, our research enhances the veracity of nearly a quarter-century of research with respect to the price-delegation decision (Joseph (2001), Lal (1986), Stephenson, Cron, and Frazier (1979), and Weinberg (1975)). Indeed, these efforts provide a firm foundation for

suggesting the contingent view described in this research. We also believe that our contingent view should greatly assist sales managers considering how best to structure the price-delegation decision. In addition, these findings should prove useful to educators training the future cadre of sales professionals in business schools.

Despite this body of knowledge, much work still remains. As highlighted in our empirical work, there is a need for additional theoretical work that examines the impact of competitive considerations on the optimality of delegating pricing authority to the sales force. There is also need for a framework that examines the nature of control system, characteristics of the selling environment, and the decision to delegate pricing authority in an integrated manner. We hope our efforts will stimulate future research along these directions.

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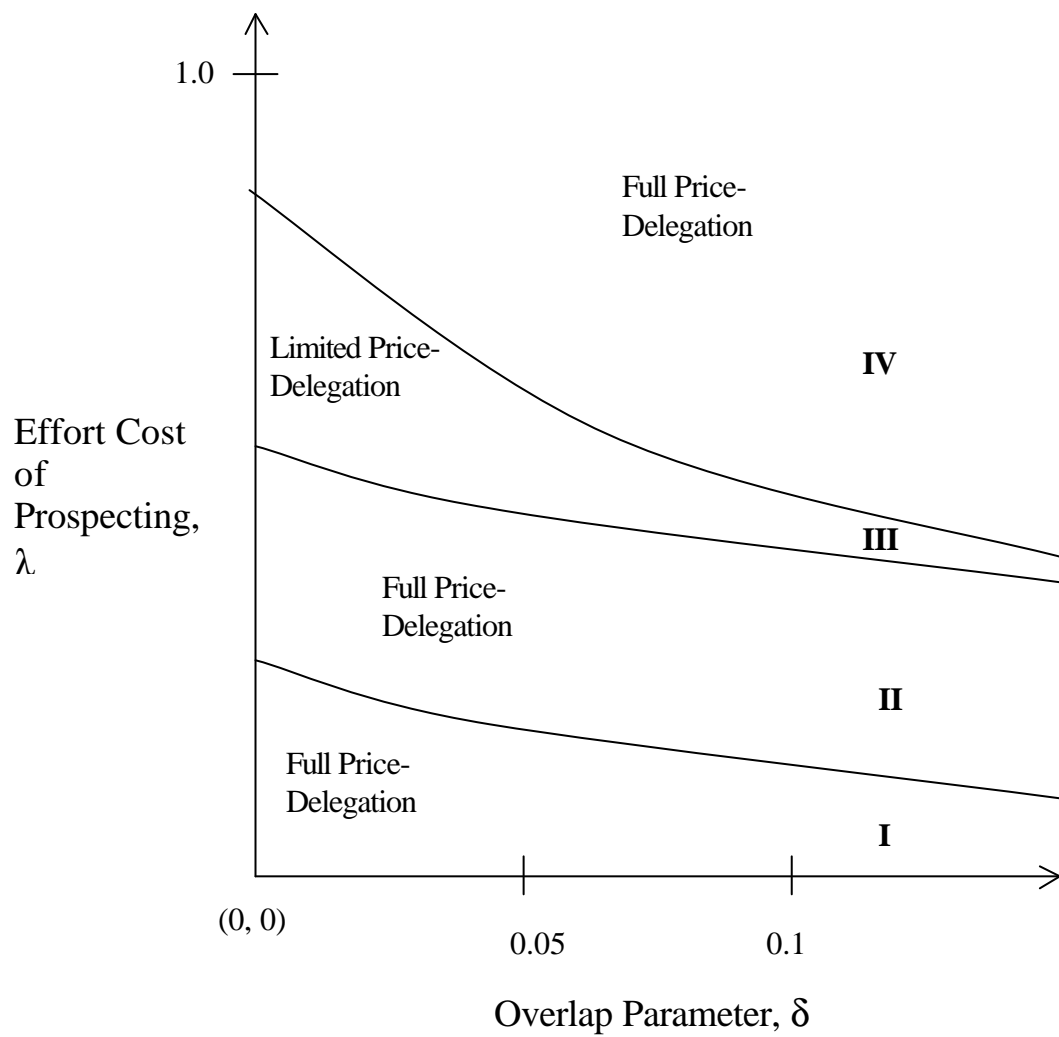


Figure 1. Optimality of Price-Delegation

Figure 2. Impact of Prospecting Fraction on Probability of Price-Delegation

