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Governance and Corporate Control: Compliments or Substitutes

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Abstract

In this paper we test for the motives for adopting golden parachutes and Anti Takeover Amendments (ATAs). Firms that exhibited financial characteristics that were associated with a greater probability of hostile raids were also more likely to adopt golden parachutes or ATAs. We also find evidence to support the hypothesis that the adoption of golden parachutes and poison pills may in fact be complement each other.

I. Introduction

The adoption of takeover-activated severance pay contracts, popularly termed "golden parachutes" and anti-takeover measures termed "shark repellents" has always been controversial. This paper presents some new evidence on the dynamics of Fortune 500 firms' behavior in regard to these strategies.

In the agency cost literature, golden parachutes and anti-takeover measures have both been categorized as measures that tend to insulate the management from the disciplines of the market. However, they differ considerably in terms of their influence on the dynamics of takeover. While there are several theoretical models to capture the mechanics of agency cost, recent work by Ghosh (2004), Chakraborty and Arnott (2001) and Knoeber (1986) provides an ideal framework to test these issues.

Golden parachutes differ considerably in terms of their influence on the dynamics of takeover. While both measures provide this insulation, golden parachutes have a negligible effect on both the probability of hostile takeover, as well as its success, since they do not provide an obstacle to the raider. Market reactions to the adoption of golden parachutes have generally been statistically significant and positive (Lambert and Larker, 1985).

Studies investigating the effects of anti-takeover measures have been, on the whole, quite inconclusive about the net effect of these strategies. DeAngelo and Rice

(1983), while examining a sample of NYSE listed firms adopting anti-takeover amendments during 1971-79, found statistically insignificant (albeit negative) abnormal stock returns around the announcement of such measures' adoption. Conversely, Linn and McConnell's (1983) investigation into abnormal returns at the announcement date for 475 NYSE listed firms (between 1960-80) found statistically significant, positive abnormal returns. Malatesta and Walkling (1988) report statistically significant reductions of shareholders' wealth for firms that adopt "poison pill" defenses. They also note that firms adopting such defenses were significantly less profitable than the average firm in their industries during the year prior to adoption. Jarrell and Poulson (1987), investigating similar reactions for 600 firms over the period 1979-85, detected a significant negative price reaction for certain kinds of measures. In light of these results, it is difficult to unambiguously accept or deny the proposition that anti-takeover measures are value-maximizing for the shareholder, or that they signal managerial entrenchment.

In this paper I attempt to relate the motives for adopting the above measures by looking at the financial characteristics of all Fortune 500 firms that had adopted such measures as of 1986. The theoretical framework for our empirical investigation is derived from a model of optimal contracting between the manager and the shareholder in an environment characterized by hostile takeovers and asymmetry of information (Knoeber, 1986).

After controlling for the motives for takeover (synergistic vs. disciplinary), I test the hypothesis that adoption of golden parachutes and/or shark repellents is driven by inefficient managers' need to protect themselves from the disciplines of the market for corporate control. I perform these tests using the bivariate probit estimation technique, which allows for interaction between the error processes of the two equations, and a model which allows for simultaneous determination of the two phenomena.

I find strong evidence (contrary to Knoeber's findings) to suggest that the adoption of these anti-predatory defenses is better explained by managers' desire to insulate themselves from market discipline than by the need for more efficient contracting. I also find considerable support for use of the more computationally intensive techniques of bivariate probit and simultaneous modelling of golden parachutes and shark repellents, as the added computational complexity yields valuable insights into firms' behavior.

The remainder of this paper is organized as follows. In Section II provides the arguments for why the adoption of golden parachutes and poison pills should relate to certain financial characteristics of the firm. Section III describes the data and the econometric methodologies employed. In Section IV results are reported. A brief summary concludes the paper.

II. Issues and Hypothesis

The adoption of golden parachutes and shark repellents can be well motivated in a model of agency cost with incomplete information about managerial performance. If we assume that managerial performance can be accurately evaluated only in the long run, then some form of deferred compensation is required for optimal contracting. Deferred compensation, however, requires credible commitments from the shareholders due to the possibility of a hostile takeover. Knoeber suggests that golden parachutes and shark repellents can be viewed as "...attempts to eliminate the possibility of opportunism toward managers with implicit long-term deferred compensation contracts." (1986, p. 160). A golden parachute in this context can be viewed as the shareholders' bond of deferred compensation, which will be forfeited in the event of an hostile takeover.[2] A shark repellent, on the other hand, forces the raider to negotiate a mutually satisfactory agreement with the incumbent managers, assuring them of a reasonable settlement of their deferred claims.

Knoeber notes that the poorer are contemporaneous measures of managerial productivity, the greater will be the need for deferred compensation, and hence the larger will be the gains to the shareholders from incorporating takeover defenses.[3] At the same time, deferred compensation becomes less acceptable to managers the greater is the probability of an hostile raid. However, adopting takeover defenses in response to the threat of hostile takeover is not always in the shareholders' interest. While takeover amendments facilitate better contracting, they also insulate managers from the disciplines of the market for corporate control. This highlights the fundamental problem in examining the dynamics of firms' behavior in this regard: how may we identify the degree to which firms' actions are reflecting shareholders' interests, versus managers' interests in keeping their jobs and valued perquisites? This requires the use of computational techniques beyond ordinary least squares or univariate probit, since we must allow for simultaneous actions in adopting both golden parachutes and shark repellents, driven by overlapping sets of causal factors.

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2 The credibility of commitments is particularly important since most deferred compensation is implicit by nature. In case of a hostile takeover the raiding firm has no obligation to uphold such implicit contracts.

3 Since the manager is always aware of his actual performance but the shareholder can only evaluate managerial performance in the long run, there is a informational asymmetry problem. Knoeber proxies this informational asymmetry by capital expenditures (relative to sales), R&D and advertising expenditures (relative to sales) and the residual variance from regressing firm returns on those of the market. The underlying assumption in constructing the above is that the larger is each of the proxies, the less accurately can the shareholders predict the true performance of the managers in the short run. In our sample none of the proxies for asymmetric information had any statistical significance in explaining the adoption of golden parachutes or poison pills.

Knoeber tested his hypothesis by considering the evidence of golden parachutes' adoption in a 1982 sample of 244 firms, 40 of whom had adopted golden parachutes. He finds support for the view that the presence of golden parachutes can be explained by shareholders' need to provide deferred compensation, and hence that their adoption is consistent with shareholders' interests. His findings also reject the alternative view that these amendments are installed by managers to insulate them from the disciplines of the market for corporate control. Knoeber notes that although the signs of the coefficients for all the variables in his model follow the predictions of his hypothesis, the significance levels are low because he lacked corresponding data on the adoption of shark repellents. He conjectures that "...stronger results would be expected if firms that had golden parachutes or shark repellents were treated alike..." (1986, p. 164) since he considers these measures substitutes in the context of optimal contracting.

The availability of new data on takeover defenses such as poison pills, coupled with recent work on the differences between hostile and friendly takeovers, raises two issues with Knoeber's approach and his conclusions. The first concerns the relationship between deferred compensation and the nature of the takeover: friendly (synergistic) vs. hostile (disciplinary). The second concerns his assumption of substitutability between golden parachutes and shark repellents as instruments for optimal contracting.

Since the primary motive for incorporating golden parachute and shark repellents in Knoeber's model is to protect the manager's deferred compensation, it is important to distinguish between friendly and hostile takeovers. Friendly takeovers pose little threat to deferred compensation; hence, instruments created for guaranteeing such compensation will have limited use for managers of firms vulnerable to friendly takeovers. Thus one would expect such firms to be less likely to adopt golden parachutes and/or shark repellents. This is especially important in light of the work on the financial characteristics of targets of hostile bids by Morck et al. (1988), who conclude that "The key implication of this study for future work, therefore, is that research results on friendly bids may have little to say about the hostile bids, and vice versa." (p. 128).

Morck et al.'s analysis of all Fortune 500 firms which were taken over in 1981-85 demonstrates that among the variables that strongly distinguish hostile takeovers from their friendly counterparts are firm size, equity holding of the managers and the board of directors, Tobin's Q (both industry as well as firm specific) and the presence of the founder or founding family members in top management positions. The targets of hostile takeovers also had significantly more debt than did their friendly counterparts.

In the next section I attempt to isolate the motives for adopting golden parachutes or shark repellents among Fortune 500 firms which are likely to be susceptible to hostile takeover bids.

III. Data and Methodology

The primary source of data is the survey conducted by Rosenbaum (1986) of takeover defenses among Fortune 500 firms as of May 1986. I also make use of Hall's Manufacturing Sector Master File (1990) to calculate Tobin's Q measures. The above screens leave us with a sample of 376 firms. Since this data set contains information on more than one kind of shark repellent, I had to identify a particular takeover defense that is closest to the spirit of the argument. I chose poison pill securities to represent the incidence of shark repellents. Poison pills are not only exclusively tailored by management to thwart hostile bids, but they have also been highly effective in making targets financially unattractive to raiders (Ruback (1988)).

Investigating the role of golden parachutes and poison pill securities in protecting inefficient managers from the discipline of the market requires that we identify financial characteristics that not only relate to the likelihood of hostile tender offers but are also closely related to managerial performance. This is important since hostile takeovers are viewed as the most effective instruments for disciplining inefficient managers. Tobin's Q (the ratio of the market value of the firm to the replacement cost of its assets) satisfies both these requirements.[4]

Motivating the relationship between golden parachutes and/or poison pill securities to the discipline of the market for corporate control requires that we control for the motives for takeover by distinguishing synergistic from disciplinary takeovers.[5] Morck et al. (1988), investigating the characteristics of takeover targets in a sample of Fortune 500 firms in 1981-1985, note that the probability of a hostile takeover (but not that of a friendly takeover) was strongly related to Tobin's Q.

Since disciplinary takeovers are likely to be hostile, Tobin's Q may serve as a better proxy for the likelihood of takeovers than the price-earnings ratio, which is also more sensitive to short term fluctuations (including manipulation by management). Controlling for the motives of takeover is particularly important in this model since hostile takeovers substantially increase the likelihood that deferred compensation will not be paid to target managers.

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[4]In the capital investment literature, Tobin's Q signals whether a firm should be adding to its capital stock, maintaining this stock at its current level, or divesting its capital. The manager of a firm with a Q below the break-even value would provide stockholders with a higher return by selling capital at the margin and distributing the proceeds of the sale, as the financial markets value its assets more highly than its prospects. Since the market value of the firm captures the future expectations about the performance of the firm, a low Q (ceteris paribus) signals managerial incompetence or generally poor business prospects.

[5] "We conclude that differences between synergistic and disciplinary takeovers, captured in part by their moods, should be recognized in empirical work." (Morck et al. (1988), p.127).

Further, research on sources of gains from takeover (Servaes, 1991; Lang et al., 1989; Hasbrouck, 1985) also points to the relationship between performance and Tobin's Q. There is a consensus that target, bidder, and total returns are larger when targets have low Q ratios and bidders have high Q ratios. Servaes (1991, p.409) notes that “The best takeovers, in terms of value creation, are those where a high Q firm takes over a low Q firm. The opposite scenario holds for the worst case takeovers–low Q firms taking over high Q firms.” He concludes that interpreting Q as a measure of managerial performance supports the view that better-performing firms create value by taking over poorly-performing companies.

Hence, incorporating Tobin's Q not only proxies for managerial performance but allows us to control for the motive of takeover. Such a control variable is essential in a model where the primary motive for adopting golden parachutes and poison pill securities is to render deferred compensation credible in an environment where hostile takeovers are common.

I control for several other firm-specific factors in specifying the models of adoption of golden parachutes and poison pills. First, the firm-specific measure of Tobin’s Q is decomposed into the industry average value (computed from within the sample) and the firm’s deviation from that industry average. This permits us to ensure that a significant effect of Tobin’s Q is not merely a reflection of an “industry effect,” in which firms in particular industries may be far more susceptible to hostile takeovers. If this reflected solely an industry effect, we would not expect a significant coefficient on the firm’s deviation from the industry average.

I also consider the size of the firm, measured by the log of total assets, as size itself has historically been cited as a defense against takeover. The magnitude of insider holdings–the fraction of equity shares held by officers and directors of the corporation–

have often been found to be a significant deterrent to hostile bids, as they reflect shares that may be voted to thwart a bid. Last, I consider a measure of financial leverage: the ratio of the book value of long-term debt to the value of common equity. Since higher leverage increases the firm's "risk of ruin," it may highlight a greater vulnerability to takeover when an adverse shock is experienced.

The empirical work first entails straightforward binomial probit models of golden parachutes and shark repellents; as this technique is well known in the finance literature, it is not discussed in great detail. We now turn to an elaboration of the single-equation binomial probit model, known as bivariate probit, which is not as familiar.[6]

A set of ordinary regression equations may be considered, in Zellner's terms, "seemingly unrelated regressions," in which the error terms are likely to be correlated, reflecting common shocks impinging on each of the several equations. Although single-equation estimation in this context is consistent, it may not be efficient, as meaningful correlations between the errors represent additional information that may be taken into account via Zellner's SUR technique. In this same sense, a pair of binomial probit equations may be taken as "seemingly unrelated," and estimated jointly to take account of possible correlation between their error terms. For instance:

$$y_1^* = X_1\beta_1 + \varepsilon_1, \;\; y_1 = 1 \;\; if \;\; y_1^* > 0, \;\; 0 \;\; otherwise$$
$$y_2^* = X_2\beta_2 + \varepsilon_2, \;\; y_2 = 1 \;\; if \;\; y_2^* > 0, \;\; 0 \;\; otherwise$$

$$E[\varepsilon_1] = E[\varepsilon_2] = 0,$$
$$Var[\varepsilon_1] = Var[\varepsilon_2] = 1,$$
$$Cov[\varepsilon_1, \varepsilon_2] = \rho$$

[6] Our presentation of the bivariate probit technique relies on Greene (1993) and its implementation on Greene's econometrics package, LIMDEP.

Relative to the estimation of two separate probit equations, one additional parameter–the covariance between the two error terms–must be estimated using a FIML technique. In applying this technique, we would imagine that the common shocks impinging on both the golden parachute and poison pill equations reflect perceived changes in the underlying threat of hostile takeover. We would expect to find that this covariance is positive, as an increase in the threat of raid would be likely to increase firms' interest in either measure.

Although the bivariate probit technique may shed some light on the interactions between golden parachutes and poison pills, it cannot directly address one interesting question: can adoption of the two measures be viewed in a simultaneous context? This becomes a more challenging empirical problem, since if there is true simultaneity between the two measures' adoption, we cannot merely include one measure in a probit equation for the other without risking inconsistency in the parameter estimates. I attempt to directly address the potential complementarity or substitutability between golden parachutes and shark repellents by adapting a technique for consistent estimation of a binary dependent variable model in an instrumental variables context from Davidson and MacKinnon (1993).

Borrowing from the instrumental variables literature, I can construct a valid instrument for one outcome–in this situation, the adoption of a poison pill–by generating the predictions of a standard probit model, *PREDPP*. That variable may then be included as a regressor in a probit model for the incidence of golden parachutes. As in the standard IV approach, the coefficients' point estimates from this latter probit should be consistent, but the estimated variance-covariance matrix will be incorrect, as it is constructed from the "wrong" explanatory variables. A consistent estimate of the variance-covariance matrix may be constructed, following Davidson and MacKinnon's "artificial regression" approach, by adapting their BRMR: Binary Response Model Regression (1993, pp. 523-525). In this formulation, I first estimate the standard probit $y_1 = F(X_1\beta_1) + \varepsilon_1$, where X_1 contains the instrument, *PREDPP*, in place of the original explanatory variable, *PP*. I then construct $Z_t\hat{\beta}$ as the product of the matrix of explanatory variables (including *PP*) and the estimated coefficients. Given the inherent heteroskedasticity of the probit error term, D-M specify the artificial regression as:

$$\left(V\left(X_t\hat{\beta}\right)\right)^{-1/2}\left(y_t - F\left(X_t\hat{\beta}\right)\right) = \left(V\left(X_t\hat{\beta}\right)\right)^{-1/2} f\left(X_t\hat{\beta}\right)X_t b + \upsilon_t$$

where F(•) and f(•) are the cumulative normal distribution function and normal density function, respectively, and $V\left(X_t\hat{\beta}\right) = F\left(X_t\hat{\beta}\right)\left(1 - F\left(X_t\hat{\beta}\right)\right)$, the variance of the binomially distributed error term. In this artificial regression, the coefficient values (b) are of no interest, but the least squares estimate of their variance-covariance matrix provides a consistent estimate of the variance-covariance matrix of the original probit model. I use this method to generate estimates of the probability of adopting golden parachutes, conditioned on the presence or absence of a poison pill.

IV. Empirical Findings

Table 1 describes the incidence of golden parachutes and poison pill securities in the sample of 376 U.S. manufacturing corporations. As the mid-1980's Ire characterized by widespread adoption of anti-takeover defenses, I observe a much higher proportion of firms with golden parachutes than did Knoeber in his earlier sample. The availability of data on poison pill securities considerably increases the robustness of the experiment.

While 43.6 per cent of firms have golden parachutes, 60.1 per cent have either golden parachutes or poison pill securities, and 20.5 per cent have both measures in place.

Table 2 presents means for the relevant variables in the sample for the subsample classifications in Table 1. The means for the four cells of Table 1 differ significantly for size, insider holding, leverage, and Tobin's Q.

The hypothesis that decisions to adopt golden parachutes and poison pill securities reflect the interests of entrenched managers is tested for firms that adopted such measures as of 1986. The binomial probit estimation technique is used to analyze the adoption of poison pill securities for the sample of 360 firms possessing complete data for all explanatory variables. Table 3 presents the estimates of probit equations for golden parachutes and poison pills in columns 1 and 2, respectively. I find clear evidence that insider holding and Tobin's Q are negatively related to both probabilities of adoption. Leverage and firm size both play important roles in the golden parachute equation, but lack significant effects on the adoption of poison pills. The strong negative effect of Tobin's Q is consistent with the hypothesis that both measures are more likely to be adopted by firms which are performing poorly–counter to the argument that shareholders of those firms might well seek new management.

To ensure that the role played by Tobin's Q in these findings is not merely an industry effect–in which some industries' lower margins might give rise to systematically lower Q values, and perhaps to greater vulnerability–we decomposed the measure of Q into industry average and deviation from industry average values. Those results are reported in columns 3 and 4 of Table 3. In the golden parachute equation, industry average Q plays no role, while the firm's deviation from the industry average remains negative and significantly different from zero. In the poison pill equation, both terms are significantly negative. This supports the hypothesis that firm-specific effects of Tobin's Q are playing an important role in the findings. The strong negative relation between both probabilities of adoption and two of the explanatory factors–deviation from industry average Q and per cent insider holding–are visible in Figures 1 and 2 for golden parachutes and poison pills, respectively. The two predicted probabilities are graphed against the firm's deviation from industry average Q in Figure 3. It is quite evident that a firm with a low Q, relative to its industry average, is much more likely to adopt both measures.

The evaluation of the impact of the explanatory variables on the predicted probability of adoption must be done with caution, as the estimated coefficients do not directly represent the change in the predicted probability, but rather the change in an index variable. The predicted probability of adoption must be calculated at a particular point in X space given the inherent nonlinearity of the normal cumulative distribution function. Table 5 reports predicted probabilities of adoption for a benchmark case–in which all explanatory variables are set at their sample means–and for one-standard-deviation variations in each explanatory variable in turn.

For golden parachutes, with a benchmark predicted probability of 0.43, a one-sigma reduction in the firm's Q (as a deviation from the industry mean) raises the predicted probability of adoption to 0.52. A one-sigma increase in firm size has an even more marked effect, decreasing the predicted probability to 0.32. Leverage has a very strong effect; a one-sigma increase in leverage increases the predicted probability to 0.55, reflecting the added riskiness of the firm. The strongest effect of any explanatory factor is evidenced by the decrease in predicted probability to 0.25 for a one-sigma increase in insider holdings. Evidently, the presence of large insider holdings provides a quite adequate substitute for golden parachute clauses.

For poison pills, the industry average Q has a meaningful effect–with a one-sigma decline raising the predicted probability of adoption from the 0.37 benchmark to 0.44. Variations in the firm's Q (in deviation form) have a slightly stronger effect. Insider holdings also are quite important; a firm with a lower level of insider holdings (one sigma below the firm average) will have a 0.49 predicted probability of adoption, 12 per cent higher than a firm with the average level. Insider holdings may themselves be an effective takeover defense.

Multivariate Models of the Probability of Adoption

I hypothesized that the interactions between factors influencing the adoption of golden parachutes and poison pills might be of considerable importance. I tested for the significance of these interactions by reestimating the two probit models jointly, as a bivariate probit system. This estimation technique, as a full-information maximum likelihood (FIML) method, takes account of the possible intercorrelation between the error terms in the two equations, and should yield better predictions for the two phenomena. The estimates from the bivariate probit system are given in Table 3. Columns 1 and 2 correspond to equations in which Tobin's Q is the explanatory variable, while columns 3 and 4 report results for a model containing decomposed Tobin's Q. The findings are broadly similar to those of Table 3. In both bivariate probit systems, I find a positive and significant estimate of ρ, the correlation between equations' error terms. This suggests that there are indeed common factors–perhaps related to the threat of takeover–that increase the probability of a firm adopting either a golden parachute or a poison pill.

Last, I directly consider how golden parachutes and poison pills may be interrelated. Does the presence of a "shark repellent"–giving the manager a defense against hostile takeover–serve as a complement to a golden parachute, or might it be a substitute for a golden parachute? This can only be tested by estimating an equation in which accounts for the possible simultaneity of these decisions. I construct an instrument for the presence of a poison pill as the predicted value of the equation in column 2 of table 3, converted to binary form (using a threshold of 0.5). I then add this to the list of explanatory variables in the golden parachute equation, and utilize the technique outlined above (due to Davidson and MacKinnon) to derive consistent estimates of both the parameters and their covariance matrix. These results are presented in column 5 of Table 4. Although the explanatory power of Tobin's Q falls in this formulation, the coefficient remains significantly different from zero at above the 90 per cent level. The coefficient on Poison Pill is positive, with a level of significance just short of 90 per cent; its sign suggests the presence of complementarity between golden parachutes and poison pills. The predicted probability of adoption of a golden parachute, with all explanatory variables at their sample means, is 0.4441. When the binary variable *POISPILL* takes on a zero value (absence of a poison pill), the predicted probability falls to 0.4095; when it takes on a value of unity, denoting adoption of a poison pill, the predicted probability rises to 0.5006. Thus, the presence of a poison pill is expected to raise the probability of adopting a golden parachute by almost 10 per cent.

V. Conclusion

Results indicate that firms that exhibited financial characteristics that were associated with a greater probability of hostile raids were also more likely to adopt golden parachutes or poison pills. Since hostile raids are by definition disciplinary (sometime with the sole purpose of changing the management), while both these strategies insulate the managers from the disciplines of the market for corporate control, our evidence points to entrenchment as the motive for adopting such strategies. We also find evidence to support the hypothesis that the adoption of golden parachutes and poison pills may in fact be complementary actions.

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TABLE 1–FREQUENCIES OF GOLDEN PARACHUTES AND POISON PILLS

	No Poison Pill	Poison Pill	Total
No Golden Parachute	150 (39.9%)	62 (16.5%)	212 (56.4%)
Golden Parachute	87 (23.1%)	77 (20.5%)	164 (43.6%)
Total	237 (63.0%)	139 (37.0%)	376 (100.0%)

TABLE 2–CONDITIONAL MEANS OF THE EXPLANATORY VARIABLES

	Entire Sample	Golden Para	Poison Pill	G.P. or P.P.	G.P. and P.P.	Neither
Size	7.126	7.061	7.264	7.101	7.309	7.163 •
Insid. Hold.	7.751	5.305	4.799	5.447	3.989	11.46 •••
Tobin's Q	0.813	0.745	0.710	0.748	0.672	0.910 •••
Leverage	0.511	0.630	0.513	0.554	0.642	0.446 •••
N of firms	376	164	139	226	77	150

Means of the four sub samples of Table 1 differ at the 90 (•), 95 (••) or 99 (•••) per cent level of significance.

TABLE 3–UNIVARIATE MODELS OF THE PROBABILITY OF OBSERVING ADOPTION

	Golden Parachute	Poison Pill	Golden Parachute	Poison Pill
Size	-0.242		-0.241	
	(-3.64)		(-3.62)	
Insider Holding	-0.046	-0.031	-0.046	-0.031
	(-5.24)	(-4.03)	(-5.26)	(-4.03)
Tobin's Q	-0.502	-0.702		
	(-2.59)	(-3.51)		
Industry Avg. Tobin's Q			0.001	-0.936
			(0.00)	(-2.58)
Dev. from Ind. Avg. Q			-0.671	-0.615
			(-3.04)	(-2.69)
Leverage	0.541		0.558	
	(3.76)		(3.82)	
Constant	2.050	0.466	1.629	0.655
	(3.64)	(2.67)	(2.63)	(2.18)
Log-likelihood	-221.48	-223.27	-220.17	-222.97
χ^2 for slopes=0	52.081	32.742	54.716	33.341

Notes: Estimates are based on a 360-firm sample. T-statistics are given in parentheses beneath the coefficient estimates.

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TABLE 4–MULTIVARIATE MODELS OF THE PROBABILITY OF OBSERVING ADOPTION

	Golden Parachute	Poison Pill	Golden Parachute	Poison Pill	Golden Parachute
Size	-0.238 (-3.34)		-0.237 (-3.32)		-0.254 (-3.85)
Insider Holding	-0.046 (-2.67)	-0.030 (-4.08)	-0.046 (-5.72)	-0.030 (-4.10)	-0.043 (-4.75)
Tobin's Q	-0.496 (2.67)	-0.693 (-3.36)			-0.373 (-1.89)
Industry Avg. Tobin's Q			0.021 (0.06)	-0.923 (-2.52)	
Dev. from Ind. Avg. Q			-0.669 (-3.27)	-0.605 (-2.55)	
Leverage	0.544 (4.44)		0.566 (4.56)		0.543 (3.53)
Poison Pill					0.230 (1.57)
Constant	2.012 (3.37)	-0.460 (2.60)	1.577 (2.33)	0.645 (2.15)	1.950 (3.44)
Estimation method	Bivariate probit		Bivariate probit		Probit BRMR
ρ (corr[ε_1,ε_2]	0.171 (1.83)		0.183 (1.94)		
Log-likelihood	-442.98		-441.13		-220.83

Notes: Estimates are based on a 360-firm sample. T-statistics are given in parentheses beneath the coefficient estimates.

TABLE 5–SENSITIVITY OF THE PROBABILITY OF OBSERVING ADOPTION

	Golden Parachute	Poison Pill
Multivariate point of means	0.4321	0.3660
Mean Industry Q – σ_{IAQ}	0.4320	0.4392
Mean Industry Q + σ_{IAQ}	0.4322	0.2973
Mean Dev. from Ind. Q – σ_{DQ}	0.5208	0.4470
Mean Dev. from Ind. Q + σ_{DQ}	0.3468	0.2905
Mean Insider Holding – σ_{IH}	0.6264	0.4937
Mean Insider Holding + σ_{IH}	0.2532	0.2516
Mean Size – σ_{SIZE}	0.5471	
Mean Size + σ_{SIZE}	0.3227	
Mean Leverage – σ_{LEV}	0.3171	
Mean Leverage + σ_{LEV}	0.5533	

Notes: Probabilities are calculated from the models reported in columns 3 and 4 of Table 3. The first row is the predicted probability of adoption at the mean value of all explanatory variables. Subsequent rows report the predicted probability of adoption for a particular explanatory variable one standard deviation below or above its sample mean, with all other variables at their sample means.