

compare the relative performances of dynamic and static immunization strategies. In their paper, Boyle, Byoun and Park use intraday transactions data to show that the S&P 500 index option market leads the cash index, and that the lead-lag relation has resulted in a significant bias of the implied volatility that confirms their theoretical conjecture. Finally, Bubna uses a moral hazard model to address issues in the formation of syndicates in venture capital industry and to present some useful policy implications.

It is hoped that the contributions within this volume will be of significant interest and usefulness to its readers. And may *Research in Finance* continue to publish papers of the highest caliber, to the benefit of academics and practitioners alike.

Andrew H. Chen
Series Editor

OWNERSHIP STRUCTURE, AGENCY COSTS AND DIVIDEND POLICY

Mukesh Bajaj, Anand M. Vijh and
Randolph W. Westerfield

ABSTRACT

We find that, at low levels of insider ownership, the market's reaction to dividend increases becomes less positive, and to dividend decreases becomes less negative, as insider ownership increases. The price reaction is larger when insiders control voting on shares they do not own and lower if a family owns a block. The results are stronger for firms with low values of Tobin's Q. Several tests indicate that these cross-sectional results are not a manifestation of the information content hypothesis. Instead, the findings support the hypothesis that dividend increases reduce the agency costs of free cash flow and vice versa.

1. INTRODUCTION

On average the market responds positively to announcements of dividend increases and negatively to dividend decreases. The received literature has offered several explanations for the observed price reactions. These explanations, which are not necessarily mutually exclusive, include: the information content hypothesis, the transfer of wealth between bondholders and stockholders, the agency costs of free cash flow and the dividend preference by certain clienteles.¹ In this paper, we investigate the agency cost hypothesis

by studying the cross-sectional relationship between the ownership structure and the market's reaction to announcements of significant changes in dividends.

We find that, at low values of insider ownership, the price reaction to dividend increases becomes less positive, and to dividend decreases becomes less negative, as insider ownership increases. We also find that the price reaction is larger if insiders control votes of shares they do not own and it is smaller if a family owns a significant block of stock. While institutional ownership is negatively related to the price reaction, the relationship becomes insignificant once we control for the firm size. We also find that the relationship between the ownership structure and the market's reaction to dividend changes is stronger for firms with low values of Tobin's Q ratio. Several tests confirm that these results are not explained by the information content hypothesis through interactions of ownership structure and the informativeness of dividend changes. Instead, the findings are consistent with Jensen's (1986) hypothesis that the market's reaction to dividend changes are explained, in part, by the reduction in agency costs of free cash flow upon dividend increases and vice versa.

The Free Cash Flow/Agency Cost Hypothesis

In their seminal work, Jensen and Meckling (1976) pointed out that agency costs can arise when firms rely on "outside" equity ownership. One manifestation of agency costs is that managers with control (but no ownership) of free cash flow over-invest internally-generated funds; especially if the firm does not have enough positive net present value investment opportunities (Jensen, 1986).²

It is well known that since managers are reluctant to cut dividends (Lintner, 1956), dividends may absorb free cash flow and reduce agency costs. Rozeff (1982) suggested that the payment of a dividend by firms with outside equity could reduce agency costs by increasing firms' reliance on external financing and, therefore, subjecting them to the increased scrutiny of capital markets.^{3,4} Following Rozeff (1982) and Jensen (1986), it stands to reason that higher managerial equity holdings or more effective monitoring of management by stock holders will reduce agency costs. According to this free cash flow/agency cost hypothesis, the excess returns to a dividend change will be negatively related to the amount of inside ownership and positively related to any attribute of ownership which increases monitoring of firms' use of free cash flow.

Increased insiders ownership, can also serve to entrench managers, however, and thus increase agency costs, as shown by Stulz (1988) and Morck, Shleifer and Vishny (1988). In the range of insider ownership where the increased entrenchment effect is dominant, the excess returns of a dividend change need not be negatively related to the amount of inside ownership. The equilibrium

amount of agency costs will depend upon the point at which the entrenchment effect becomes dominant. In other words, the agency costs will depend on the incentives of managers to misappropriate resources as well as their ability to do so.⁵

Interactions Between Ownership Structure and Information Content of Dividend Changes

The empirical relationship between insider ownership and the market's reaction to dividend changes could also be due to interactions between the ownership structure of a firm and informativeness of its dividend policy. There are three distinct possibilities.

First, Bajaj and Vijh (1990, 1995) show that dividend policy of smaller firms is more informative, perhaps because information production on these firms is concentrated around earnings and dividend announcement periods. The received literature also shows that insiders own a larger percentage of equity in smaller firms. The resulting interaction will result in a larger price reaction to a dividend change for firms with larger insider ownership (which are, on average, smaller). This effect is opposite of the relationship predicted by the agency costs hypothesis.

Second, if managers with large ownership are less likely to use dividend decisions as signals of future earnings, we would observe a negative relationship between the market's reaction to dividend changes and insider ownership independent of the agency-costs-based reasoning outlined above.⁶

Third, it is also possible that inside ownership and dividend changes could act as a joint signal of firm value. Insider ownership could serve as a performance bond against false signaling as suggested by Born (1988). The implications of this reasoning are the opposite of the predictions of the agency costs hypothesis.

To examine these possibilities, we perform several additional tests. First, we examine the market's reaction to earnings announcements, in a manner analogous to our analysis of dividend announcements. We find that, since firms with higher insider ownership tend to be larger firms which have smaller surprises in earnings announcements, the magnitude of the market's reaction to earnings surprises is smaller for firms with higher insider ownership. These results are in the opposite direction to the findings around dividend announcements. They suggest that our results on dividend announcements are indeed due to the agency costs hypothesis. Second, we also examine the actual change in earnings announced subsequent to the dividend announcement. If the smaller market reaction to dividend changes as insider ownership increases were due to less

information in dividend changes for these firms, we should find corroborating evidence in the subsequent earnings changes. In fact, we do not find such evidence.

Finally, we examine the hypothesis that dividend changes are less informative for firms with higher insider ownership because managers of such firms do not use dividends to signal future earnings. We look at the number of quarters since the last change in regular dividends had been announced by firms in our sample. We find that there is in fact a negative relationship between the number of quarters since dividends were changed (prior to the current dividend change) and the insider ownership. This suggests that the dividend policy of firms with higher insider ownership, in our sample, is less stable. Therefore, we feel that our results are not driven by a declining importance of dividends as a signal of firm value as insider ownership increases.

The rest of the paper proceeds as follows. Section 2 describes data and methodology. This section also motivates the various attributes of ownership structure used in our study and provides summary statistics for our sample. Section 3 describes the main results of our paper. Section 4 examines whether interactions between the ownership structure and information content of dividend changes can explain our results. Section 5 further explores the relationship between ownership structure, dividend policy, growth opportunities and free cash-flow implications of dividend changes. Section 6 concludes.

2. SAMPLE SELECTION AND METHODOLOGY

Sample Selection

We obtained information on dividend declarations and daily returns from the daily master file of the Center for Research on Security Prices (CRSP). After identifying all announcements of changes in regular and quarterly dividends by all dividend-paying firms listed on the New York Stock Exchange (NYSE), American Stock Exchange (AMEX) and Over-The-Counter (OTC) markets, we applied the following selection criteria:

- (1) We excluded dividend announcements by utilities and financial firms because their regulatory and accounting practices differ sufficiently from other firms to make pooling undesirable.⁷
- (2) Following Lang and Litzenberger (1989) we included only substantial changes in dividends – those that were at least 10%. This enables us to focus on a manageable sample size for the purpose of collecting the ownership structure data. Also, agency costs are more likely to be an important

determinant of the market's reaction to dividend changes when the change is substantial.⁸

- (3) We selected announcements during the 1979–1987 period. We choose 1979 as the starting point because Value Line did not report institutional ownership data prior to 1979.⁹
- (4) We chose only those dividend announcements for which the ex-dividend date followed the dividend announcement date by at least four trading days. This criteria is necessary because we use firm size and anticipated yield as additional independent variables in some of our regressions. Karpoff and Walkling (1988, 1990) show that the excess returns around ex-dividend days are correlated with firm size and dividend yield because of tax-motivated trading. This criterion removes the confounding influence of ex-day price effects.
- (5) To reduce noise in measuring the market's reaction to dividend announcements, we verified all dividend change announcement dates from the *Wall Street Journal Index* and eliminated those cases where we found another simultaneous announcement over a three-day period surrounding the dividend announcement.

The above selection criteria resulted in 1,222 announcements of changes in dividends for which data on all variables were available. The sample cases were spread over 53 different 2-digit SIC codes over the nine-year period. The maximum number of announcements (202) took place in 1979. The two lowest numbers of announcements were in 1986 and 1987 (108 and 77). There were fairly even number of announcements in between. Overall, there were 82 cases of dividend decrease and 1,140 dividend increase announcements. Table 1 shows that the mean (median) increase was 20.5 (16.0)%, while the mean (median) decrease was 47.2 (50)%.

The market's reaction to the dividend announcement was measured by three-day excess return centered on the dividend change announcement day. The excess return measure was calculated using the mean-adjusted model as explained in Brown and Warner (1985). We subtracted from the stock return the average daily return calculated over a 250-day period ending 10 trading days before the announcement. The *t*-statistics were calculated by using the cross-sectional distribution of event period excess returns. The mean (median) excess return for 82 dividend decreases in our sample was -4.13 (-3.96%). The average excess return is significant at the 1% level, indicated by the *t*-statistic of 6.70. For 1,140 dividend increases in our sample, the mean (median) excess return is 0.54 (0.24%). The average excess return is statistically significant at the 1% level, indicated by the *t*-statistic of 4.90. These results are consistent with the received evidence.¹⁰

Table 1. Summary Statistics on the Percentage Change in Dividend, Anticipated Yield and Market Value for the Dividend Change Sample from 1979 to 1987.

The sample consists of 1,222 dividend change announcements that satisfy the following criteria: (1) The firm is included in the 1987 edition of Value Line Data Base II as well as in the 1990 edition of CRSP. (2) The firm is not classified as a utility or a financial company. (3) The dividend under consideration is regular, quarterly, and paid in cash. (4) The dividend represents a change of at least 10% from the last quarter's dividend. (5) The announcement date precedes the ex-dividend date by at least four trading days. (6) There are no other announcements in the *Wall Street Journal* over a three-day period centered on the dividend announcement date. (7) Ownership structure data are available from the *Value Line Investment Survey* immediately preceding the dividend change announcement. The final sample includes 1,140 dividend increase and 82 dividend decrease announcements. Dividend change (*DIVCHG*) represents the percentage change in last quarter's dividend per share, after adjusting for any stock distributions. Anticipated yield is calculated by historic yield, adjusted for changes in market prices, as suggested by Blume (1980). Anticipated yield is expressed as a percentage. Market Value is calculated by multiplying the number of common stocks outstanding at the end of the preceding quarter with the average weekly stock price during the quarter. Market Value is in millions of dollars. The summary statistics for anticipated yield and market value are presented for 1,222 cases for which data on all non-ownership control variables are available.

Panel A: Dividend Change Statistics

Category	Sample Size	Mean	Min.	25th Percentile	Median	75th Percentile	Max.
Increase	1,140	20.5	10.0	12.5	16.0	21.0	233.33
Decrease	82	47.2	15.5	37.5	50.0	50.0	80.0

Panel B: Anticipated Yield

Category	Sample Size	Mean	Min.	25th Percentile	Median	75th Percentile	Max.
All	1,222	3.5	0.3	2.0	3.2	4.8	10.1

Panel C: Market Value

Category	Sample Size	Mean	Min.	25th Percentile	Median	75th Percentile	Max.
All	1,222	821.5	12.0	149.0	323.5	790.0	21,682.0

Below, we explain some of the cross-sectional variation in the excess returns by attributes of the ownership structure. In light of the received work, we also examine other non-ownership control variables to check that our results are not due to omitted variables reflecting different causalities. In particular, we will examine the influence of the anticipated dividend yield and firm size since both

of these are shown to be correlated with ownership structure and affect the market's reaction to dividend changes as Bajaj and Vijh (1990) show. We will also partition the data based on Tobin's Q ratio in Section 5. Our procedure to calculate Tobin's Q and the summary statistics of the measure for our sample are presented in Section 5.

Our measure of anticipated yield is based on Blume (1980). In order to adjust for intertemporal patterns in market-wide yields, we rank anticipated yields for all dividend-paying firms in the CRSP universe into 100 groups by the calendar quarter. We use the percentile rankings of the sample firms in the regression analysis in a manner analogous to Bajaj and Vijh (1990). Firm size is calculated by multiplying the number of shares outstanding at the end of the last quarter of the year immediately preceding the dividend change announcement with the average weekly stock price during the quarter. Regression analysis uses log of the market value of the firm in millions of dollars. Table 1 shows that the mean (median) value of anticipated yield for our sample is 3.5 (3.2%). Table 1 also shows that the mean (median) market value for our sample firm is \$822 mil (\$324 mil). The smallest firm has market capitalization of equity of \$12 million, while the largest firm in the sample has market value of \$21.7 billion.

Measurement of Ownership Structure

We characterize ownership structure of a company along several dimensions relevant for management incentives and control. These include the fraction of common equity insiders own or control, institutional ownership and ownership of significant block holders. We divide block holders into three categories; namely, block ownership by a family, a corporation, and a miscellaneous category.

We obtained the ownership structure data from the *Value Line Investment Survey* report immediately preceding the dividend announcement.¹¹ Value Line acquires this information from annual proxy statements, public disclosures, and Forms 3 and 4 filed with the Securities and Exchange Commission (SEC) on insider trading. For the purpose of measuring insider holdings, Value Line defines corporate officers and members of the board of directors as insiders.¹²

Often, insiders exercise voting rights over blocks of stock that they do not own. For example, when a trust owns a block and one of its trustees is an insider, then insider ownership may differ from voting control. The distinction between managers' ownership of common stock and their control over voting rights is relevant to the objectives of this paper. Jensen and Meckling (1976) have argued that the fraction of equity owned by managers directly determine the managers' share of the cost of perquisite consumption. Managers' susceptibility to the

disciplining influence of the market for corporate control (see Morck, Schleifer & Vishny, 1988) is more likely to be determined, however, by their control over voting rights.

Value Line makes a distinction between insiders' voting control and their ownership. Whenever, the voting control differs from ownership, Value Line provides data on insider control. Separate data on insider ownership is usually not available in such cases, however. We identify all instances when insider ownership differs from control by a dummy variable, *ICTRL*, which takes a value of 1. When no such divergence is indicated, *ICTRL* is set to 0.¹³

As Table 2 describes, there are 360 instances when managers control a larger percentage of shares than they own (i.e. *ICTRL* = 1) in our sample of 1,222 dividend change announcements during 1979–87 period. The average insider ownership/control for the entire sample is 14.4% and the median value is 8%. The range is from 0 to 80%. For the 862 instances in which *ICTRL* = 0, the average insider ownership is 11.2% and the median value is 5%. The range of insider ownership/control is from 0 to 80%. These values are comparable to the summary statistics reported by McConnell and Servaes (1990), who also used Value Line ownership data (to study the relationship between Tobin's Q ratio and ownership structure).

We also obtain institutional ownership data from Value Line. Pound's (1988) "efficient-monitoring" hypothesis suggests that institutional holdings could reduce agency costs due to improved monitoring. Pound also suggests that, in some instances, large institutional holdings can exacerbate agency costs if institutions seek profitable business relationship from the management or otherwise enter into a "strategic alignment" against other shareholders' interests. McConnell and Servaes (1990) find that increased institutional ownership is value-enhancing, as shown by a positive correlation between Tobin's Q ratio and institutional ownership. Other research, in the context of corporate control events, provides conflicting evidence on whether or not increased institutional ownership reduces agency costs.¹⁴

For our sample, the mean (median) institutional ownership is 34.9 (36.2%). The range is from 0 to 97.6%. This compares with the average institutional ownership of 37.6% for the 1986 sample of 1,093 Value Line firms in McConnell and Servaes (1990).

Value Line also indicates ownership of significant blocks of stock. All shareholders who own more than 5% of the stock are considered block holders. Besides such stockholders, sometimes, Value Line also mentions smaller block holdings.¹⁵ The incentive/control effects of block holders are potentially important. Shleifer and Vishny (1986) indicate that block holders can provide efficient monitoring of managers and, therefore, can reduce agency costs. Mikkelsen and

Table 2. Summary Statistics on Ownership Structure for the Dividend Change Sample from 1979 to 1987.

The sample consists of 1,222 dividend change announcements that satisfy the following criteria: (1) The firm is included in the 1987 edition of Value Line Data Base II as well as in the 1990 edition of CRSP. (2) The firm is not classified as a utility or a financial company. (3) The dividend under consideration is regular, quarterly, and paid in cash. (4) The dividend represents a change of at least 10% from the last quarter's dividend. (5) The announcement date precedes the ex-dividend date by at least four trading days. (6) There are no other announcements in the *Wall Street Journal* over a three-day period centered on the dividend announcement date. (7) Ownership structure data are available from the *Value Line Investment Survey* immediately preceding the dividend change announcement. The final sample includes 1,140 dividend increase and 82 dividend decrease announcements. Insider ownership/control is denoted by *ALPHA*. *ICTRL* is an indicator variable that takes the value of 1 if insiders exercise voting control over a larger percent of equity than their ownership. *INST* represents the percentage ownership by institutions. *BLOCK* represents total ownership by all outside blockholders and *IBLOCK* is an indicator variable which takes the value of 1 if an outside block holder exists. The blockholders are further sub-classified as another corporation, a family (trust) or miscellaneous. The corresponding indicator variables to identify non-zero ownership in the three block holder categories are denoted by *ICOMP*, *IFAMILY* and *IMISC*, respectively.

Category	Sample Size	Sample Mean	Min.	25th Percentile	Median	75th Percentile	Max.
<i>Panel A: Entire Sample</i>							
ALPHA	1,222	14.4	0	2.0	8.0	23.0	80.0
INST	1,222	34.9	0	20.3	36.2	48.8	97.6
<i>Panel B: Sub-sample for which ICTRL = 0</i>							
ALPHA	862	11.2	0	1.0	5.0	17.0	80.0
<i>Panel C: Sub-sample for which IBLOCK = 1</i>							
BLOCK	330	26.2	3.0	10.0	22.0	39.0	79.0
<i>Panel D: Sub-sample for which ICOMP = 1</i>							
COMP	166	19.8	3.0	7.9	14.3	26.0	79.0
<i>Panel E: Sub-sample for which IFAMILY = 1</i>							
FAMILY	129	32.1	3.0	15.0	30.0	47.0	77.0
<i>Panel F: Sub-sample for which IMISC = 1</i>							
MISC	46	26.2	6.0	16.0	24.5	33.0	57.0

Ruback (1985) and Holderness and Sheehan (1985), show, however, that even though there are positive share price reactions upon announcements of acquisition of large equity positions, such price reactions are transitory if not followed by a corporate control contest. Holderness and Sheehan (1988) do not find evidence of superior profitability when a single shareholder owns a majority of the common stock. Similarly, McConnell and Servaes (1990) find no significant increase in Tobin's Q ratio with block ownership.

We feel that additional insight can be gained on the incentive consequences of block ownership if the data were disaggregated by the type of block ownership. We classify block holders into three categories; namely, a family, a corporation and a miscellaneous category. It seems reasonable to conjecture that block holding by a family can affect the market's reaction to dividend changes in a manner consistent with the "efficient-monitoring" hypothesis. However, when a corporation is a block holder, the prediction is ambiguous because of two offsetting influences. First, the efficient monitoring hypothesis would suggest that the price reaction to a dividend change should be lower in such cases. Second, due to the provisions of the U.S. tax laws, intercorporate dividend payments are tax advantaged. If the marginal valuation of (unanticipated) dividends were higher in companies with significant corporate holdings, the price reaction to dividend changes would be higher for such firms. The two effects could offset each other in our data of dividend announcements. It is also possible that outside corporate block holders are not effective monitors of insiders.

In our sample, there are 330 instances of significant block ownership. The average block holding is 26.2%, and the median is 22.0%. Upon disaggregating the block ownership data, we found 166 instances in which a corporation owned a significant block. The mean (median) corporate block holding was 19.8 (14.3%). There were 129 instances in which a family owned a significant block. The mean (median) value of the family block was 32.1 (30.0%). There were 46 cases of miscellaneous block holdings for which the mean (median) was 26.2 (24.5%). There were several instances in which more than one type of block holders were present.

3. EMPIRICAL RESULTS

Since our sample has a relatively small number of dividend decrease announcements and the predictions of the relevant theories apply to both increases and decreases (with signs reversed, of course), first, we pooled the dividend increase cases with the dividend decrease cases in the regression analysis of the market's reaction to dividend changes (*CAR*). As Table 1 shows, however, dividend

decreases tend to be less frequent but much larger in magnitude than dividend increases. When measured relative to a firm's cash flows, this difference is magnified much more because dividend cuts are often made by firms in considerable financial distress. We later examine the results for separate sub samples. For dividend cuts, we multiplied *CAR* and the percentage change in dividend by -1 in order to pool the data. We denoted insider ownership by *ALPHA*. Several other attributes of ownership structure are included as independent variables. *INST* denotes the percentage of equity owned by institutional investors. We also identified those cases in which Value Line indicates that insiders control a larger percentage of equity than they own. Because Value Line usually does not separately identify ownership and control in such cases, we used an indicator variable *ICTRL* which takes a value of 1 to indicate that insider control is larger than insider ownership.

There are 330 cases of block ownership in our data. Most block holders belong to two broad categories – an outside company in 166 cases and a family or a trust in 129 cases. There were a few incidences of employee stock ownership plans and the rest were hard to classify into well-defined categories. We categorized 46 such cases as miscellaneous. We identified these categories by assigning a value of 1 to the indicator variables *ICOMP*, *IFAMILY* or *IMISC*.¹⁶ Whenever there were two or more categories of block holders for the same company, we assigned 1s to all relevant indicator variables.

The first regression in Table 3 shows that several of the ownership structure attributes significantly explain the cross-sectional variation in the market's reaction to dividend changes. The insider ownership measure *ALPHA*, is negatively related to the three-day excess returns, *CAR*. The regression shows that for 1% increase in insider ownership, the market's reaction to a dividend change is lower by 0.018%. The coefficient estimate is significant at the 5% level (*t*-statistic is -2.22). Furthermore, the regression shows that when managers control shares of stock they do not own, the market's reaction to dividend changes is higher by 0.51%, on average. The coefficient of *ICTRL* is significant at the 10% level in a two-tail test (*t*-statistic equals 1.95). The results also show that for 1% increase in institutional ownership, the market's reaction to dividend changes decreases by 0.016%. The coefficient of *INST* is significant at the 5% level, as indicated by the *t*-statistic of -2.43 .

In order to investigate the effect of block holders, we first ran a version of regression (1), in which we assigned an indicator variable, *IBLOCK* a value of 1 if there were a block holder, and zero otherwise. The results (not reported) showed that *IBLOCK* was insignificant.¹⁷ Regression (1) in Table 3 shows evidence with block ownership split into three separate categories described above.

Table 3. Regression of Announcement-period Returns on Ownership Variables for 1,222 Dividend Changes from 1979 to 1987.

The sample consists of 1,222 dividend change announcements that satisfy the selection criteria listed in Table 1. The announcement-period excess returns are calculated for a three-day period centered on the CRSP announcement date by using the mean-adjusted returns model. The mean return is calculated over a 250-day period ending 10 days before the announcement date. Insider ownership/control is denoted by *ALPHA*. *ICTRL* is an indicator variable that takes the value of 1 if insiders exercise voting control over a larger percent of equity than their ownership. *INST* represents the percentage ownership by institutions. *BLOCK* represents total ownership by all outside blockholders and *IBLOCK* is an indicator variable which takes the value of 1 if an outside block holder exists. The blockholders are further sub-classified as another corporation, a family (trust) or miscellaneous. The corresponding indicator variables to identify non-zero ownership in the three block holder categories are denoted by *ICOMP*, *IFAMILY* and *IMISC*, respectively. To run piecewise-linear regressions, we define *ALPHA 0.0 to 5* and *ALPHA 0.5 to 15*, etc., as follows:

$$\begin{aligned} \text{ALPHA } 0 \text{ to } 5 &= \text{ALPHA if } \text{ALPHA} < 5 \\ &= 5 \text{ if } \text{ALPHA} > 5 \\ \text{ALPHA } 5 \text{ to } 100 &= 0 \text{ if } \text{ALPHA} < 5 \\ &= \text{ALPHA} - 5 \text{ if } \text{ALPHA} > 5 \end{aligned}$$

Variable	(1)	(2)
Sample Size	1222	1222
<i>INTERCEPT</i>	1.467 (4.38)***	2.360 (5.48)***
<i>ALPHA</i>	-0.018 (-2.22)**	
<i>ALPHA 0.0 to 5</i>		-0.285 (-3.49)***
<i>ALPHA 0.5 to 100</i>		-0.004 (-0.45)
<i>ICTRL</i>	0.511 (1.95)*	0.670 (2.53)**
<i>INST</i>	-0.016 (-2.43)**	-0.017 (-2.56)***
<i>ICOMP</i>	0.305 (0.91)	0.283 (0.85)
<i>IFAMILY</i>	-0.790 (-2.01)**	-1.486 (-3.34)***
<i>IMISC</i>	0.395 (0.66)	0.058 (0.10)
Adjusted- <i>R</i> ²	0.0083	0.0162
<i>F</i> -statistic	2.70**	3.87***

***, ** and * denote significance at the 1, 5 and 10% level in a two-tailed test.

The coefficient of *IFAMILY* is negative and statistically significant at the 5% level (*t*-statistic: -2.01), while the coefficient of *ICOMP* is positive, but insignificant (*t*-statistic: 0.91). Under the agency-costs hypothesis, this evidence suggests that outside corporate block holders cannot, or do not, effectively monitor insiders. This may be the case if there is a strategic alignment of interests between the managers and corporate block holders. For example, the block holder corporation may depend on the firm for supplying a vital input. (Sears holds a big block and also accounts for a majority of the sales for several of our sample cases.) It is also possible that the tax-based advantages of inter-corporate dividends makes the marginal valuation of unanticipated dividends (and hence the price reactions) higher in such cases. There are only 46 cases for which *IMISC* is non-zero and the evidence for this category is insignificant.

A Piecewise Linear Relationship

Both Morck, Shleifer and Vishny (1988) and McConnell and Servaes (1990) document that the relationship between Tobin's Q and insider ownership is most pronounced in the range of 0 to 5% insider ownership. Thirty-eight percent of our observations lie in this range. Jensen and Murphy (1990) suggest that even when CEOs hold only a small percentage of equity, it constitutes a large part of their wealth. In general, share price performance has a much more pronounced effect on insiders' wealth than performance-based compensation. For our sample, 5% of equity for the mean (median)-sized firm is worth \$41.1 (\$16.2 million), which probably constitutes a substantial part of insiders' wealth. If managers' incentives get aligned with shareholders' interests fairly rapidly as *ALPHA* increases, the relationship need not be linear over the entire range of *ALPHA*.

Without any loss of generality, we examined this relationship in various ranges of *ALPHA* with piecewise linear regressions. The following variables were used in this analysis:

$$\begin{aligned} \text{ALPHA } 0 \text{ to } 5 &= \text{ALPHA if } \text{ALPHA} < 5 \\ &= 5 \text{ if } \text{ALPHA} > 5 \\ \text{ALPHA } 5 \text{ to } 100 &= 0 \text{ if } \text{ALPHA} < 5 \\ &= \text{ALPHA} - 5 \text{ if } \text{ALPHA} > 5, \text{ etc.} \end{aligned}$$

Regression 2 in Table 3 shows that the slope of *ALPHA* is significantly negative between 0 and 5% (*t*-statistic: -3.49). Beyond this range, however, the slope coefficient is insignificant. The slope of the *CAR* vs. *ALPHA* curve equals -0.285 in the 0 to 5% region, but only -0.004 in the 5 to 100% region. *ICTRL* and *IFAMILY* are also significant in this regression (*t*-statistics: 2.53 and -3.34), although *ICOMP* remains insignificant.

To better understand the piecewise linear relationship between dividend announcement period returns and *ALPHA*, we further subdivided the 5 to 100% region into a 5 to 15% and a 15 to 100% region. Regression results (not reported) show that the slope coefficient for *ALPHA* beyond the 0 to 5% range remains insignificant, however. Nor does it help to further subdivide the 15 to 100% regions into 15 to 30% and 30 to 100% regions. The slope of the *CAR* vs. *ALPHA* in subdivisions of 5 to 100% region remains negative, but it is insignificant both economically and statistically.

We also tested the robustness of the 5% level as a turning point (not reported). Using 4% as a turning point produced a somewhat greater slope of -0.363 in the 0 to 4% region whereas using 6% as a turning point produces a somewhat smaller slope of -0.235 in the 0 to 6% region. The *t*-statistics were significant (at the 5% level) in either case. Overall, we assess 5% to be a fair approximation of the turning point beyond which further increases in *ALPHA* no longer lead to further decreases in *CAR*. We find no evidence that increases in *ALPHA* lead to increase in *CAR*.

Controlling For Non-Ownership Variables

Bajaj and Vijh (1990) show that the market's reaction to dividend changes depend on anticipated dividend yield and firm size. Rozeff has shown that dividend yield of a firm is a function of its ownership structure. We examined whether our results continue to hold after controlling for the non-ownership variables shown to affect the market's reaction to dividend changes. Following Bajaj and Vijh (1990), we used *YLDRNK*, a percentile ranking of Blume's (1980) anticipated yield measure. We control for firm size by using *IVAL*, the log transform of market value (in million dollars) as an additional independent variable. We also control for size of the dividend change by introducing *DIVCHG*, the percentage change in quarterly dividend, as an independent variable.

Regressions 3, 4 and 5 in Table 4 show the impact of separately introducing each of the non-ownership variables. *DIVCHG* is significant at the 10% level while *YLDRNK* and *IVAL* are significant at the 1% level in the presence of all ownership variables. The sign and significance of the coefficient estimates of *ALPHA 0 to 5*, *ICTRL* and *IFAMILY* remain unchanged as we introduce non-ownership control variables. However, *INST* becomes insignificant with the addition of *IVAL*. Regression 6 includes all the ownership and non-ownership variables simultaneously.

In regressions 5 and 6, *INST* becomes insignificant (*t*-statistics of -0.03 and 0.30) with the addition of *IVAL*. This suggests that the institutional ownership

Table 4. Regression of Announcement-period Returns on Ownership and Non-ownership Control Variables for 1,222 Dividend Changes from 1979 to 1987.

Variable	(3)	(4)	(5)	(6)	(7) (WLS)
Number of observations	1222	1222	1222	1222	1222
<i>INTERCEPT</i>	1.336 (2.58)***	2.231 (5.11)***	4.654 (6.13)***	3.285 (3.87)***	3.266 (3.92)***
<i>ALPHA 0 to 5</i>	-0.237 (-2.87)***	-0.287 (-3.51)***	-0.376 (-4.42)***	-0.322 (-3.73)***	-0.323 (-3.94)***
<i>ALPHA 5 to 100</i>	-0.001 (-0.07)	-0.004 (-0.46)	-0.003 (-0.31)	0.000 (0.02)	-0.001 (-0.10)
<i>ICTRL</i>	0.637 (2.41)**	0.690 (2.60)***	0.652 (2.47)**	0.646 (2.46)**	0.628 (2.46)**
<i>INST</i>	-0.013 (-1.93)*	-0.016 (-2.46)**	-0.000 (-0.03)	0.002 (0.30)	-0.006 (-0.88)
<i>ICOMP</i>	0.296 (0.89)	0.238 (0.71)	0.227 (0.68)	0.196 (0.59)	0.198 (0.61)
<i>IFAMILY</i>	-1.188 (-2.64)***	-1.477 (-3.32)***	-1.764 (-3.93)***	-1.443 (-3.16)***	-1.400 (-3.24)***
<i>IMISC</i>	-0.008 (-0.01)	0.086 (0.14)	-0.111 (-0.18)	-0.122 (-0.20)	-0.152 (-0.27)
<i>YLDRNK</i>	0.017 (3.51)***			0.016 (3.26)***	0.017 (3.48)***
<i>DIVCHG</i>		0.0050 (1.74)*		0.0057 (1.99)**	0.0018 (1.15)
<i>IVAL</i>			-0.427 (-3.66)***	-0.378 (-3.23)***	-0.314 (-2.77)***
Adjusted-R ²	0.0252	0.0178	0.0261	0.0353	0.0392
F-statistic	4.95***	3.77***	5.09***	5.47***	5.98***

***, ** and * denote significance at the 1, 5 and 10% level in a two-tailed test.

was a proxy for the firm size in our sample.¹⁸ We also note that Brickley, Lease and Smith (1988) find that all institutions are not equally effective in monitoring managers. In the context of voting on anti-takeover amendments, their evidence suggests that institutions which are less subject to management influence (for example, mutual funds, foundations and public-employee pension funds) are more likely to oppose management than banks, insurance companies and trusts, which frequently derive benefits from lines of business under management control. Finer resolution of institutional ownership might produce different results. However, such resolution requires alternative data sources and is beyond the scope of this study.

Our evidence thus far is consistent with the hypothesis that market reaction to dividend changes is determined, in part, by the agency costs of free cash flow. All the benefits of incentive alignment set in by the time insider ownership is 5% of the total. Other things being equal, regression 6 shows that the cross-sectional variation in insider ownership can explain a maximum variation of 5×0.322 or 1.61% in announcement-period returns. However, all of this variation occurs between *ALPHA* values of 0 and 5%. In this range, the price returns decrease by 0.322% for every percent increase in insider ownership. The flattening of price returns beyond 5% is somewhat surprising, because it indicates that 5% insider ownership is a sufficient “threshold” to prevent managers from spending retained cash flows on value-decreasing projects. As we noted above, 5% of equity for the mean (median)-sized firm is worth \$41.1 (\$16.2 million), which probably represents a substantial part of the insiders’ wealth. At such levels of insider ownership, besides the fact that managers bear part of the cost of misallocation of firm’s resources, risk aversion of insiders could also alleviate over-investment tendency. The price reaction is also lower for companies with family block ownership, by an average of 1.44%, suggesting that family block holders alleviate agency costs. The price returns are higher by 0.65% for companies in which managers control a greater percentage of equity than they own, suggesting higher agency costs in such cases.

The cross-sectional variation in excess returns with the variation in ownership variables is economically quite significant, especially when viewed in the light that announcement-period returns have a standard deviation of 3.94% and an inter-quartile range of 4.32%. However, even though *ALPHA*, *IFAMILY* and *ICTRL* can individually explain a maximum variation of 1.61, 1.44 and 0.65% in price returns, the total variation explained by the ownership structure is less than the sum of these figures. Typically, *IFAMILY* takes the value of 1 when *ALPHA* is low. *ICTRL* takes the value of 1 when *ALPHA* is high, but its effect is opposite to that of higher *ALPHA*.

So far, the regression analysis presented above has used the OLS technique and employed the mean-adjusted excess returns as dependent variable. Ex-ante, however, the uncertainty or the variability surrounding announcement-period returns should be higher for more volatile stocks. To check for the possible heteroscedasticity-induced changes in the significance of estimated coefficients, we ran our regressions using the weighted-least-squares technique, with the inverse of standard deviations of mean-adjusted daily returns over the benchmark period as weights. Regression 7 shows the multivariate weighted-least-squares results. The adjusted- R^2 is slightly higher at 0.0392, as compared with the ordinary-least-squares regression 6 which had an adjusted- R^2 of 0.0353. The coefficients and the *t*-statistics of all ownership and non-ownership variables are about the same, except *DIVCHG*, which becomes insignificant. The overall interpretation of the results is not changed.

4. OWNERSHIP STRUCTURE AND INFORMATION CONTENT OF DIVIDEND POLICY

If there is an interaction between ownership structure and the degree of informativeness of dividend policy, the results presented above may simply be a manifestation of the information content hypothesis. Ownership structure of a firm may be related to the informativeness of its dividend policy in several ways.

First, firms with higher insider ownership are smaller firms, on average. (Correlation between insider ownership and firm size equals -0.16 for our sample.) Bajaj and Vijh (1990, 1995) show that dividend announcements for smaller firms are more informative, perhaps because information production for smaller firms is concentrated during the announcement periods. If including *IVAL* as an independent variable does not adequately control for the size effect, we would predict a positive relationship between the market’s reaction to dividend changes and insider ownership.

To examine this effect, we regress the market’s reaction to earnings announcement, in a manner analogous to the dividend announcement results reported above, on the ownership structure and other independent variables. For every dividend announcement in our sample, we search the subsequent earnings announcement date (within the next one year) from the Compustat Quarterly file. We drop cases where the subsequent earnings announcement occurs in less than three trading days, however, so that the earnings and dividend returns do not get mixed up. We measure the earnings change (*EARNCHG*) as the difference between earnings per share in the current quarter and four quarters before. This difference is normalized by the share price prevailing just before

the earnings announcement of four quarters. If *EARNCHG* is negative, we flip the sign of the market reaction and of *EARNCHG*, just as we do for dividend changes. There are 579 observations for which data are available and the selection criteria are met. The regression results are as follows:

$$\begin{array}{l}
 CAR_{(EARN)} = 0.0138 + 0.0041 \times ALPHA\ 0\ to\ 5 - 0.0002 \times ALPHA\ 5\ to\ 100 + 0.0041 \times ICTRL \\
 (0.75) \quad (2.28)** \quad (-1.21) \quad (0.77) \\
 -0.000 \times INST + 0.0038 \times ICOMP + 0.0018 \times IFAMILY - 0.0309 \times IMISC \\
 (-1.60) \quad (0.54) \quad (0.19) \quad (-1.73) \\
 + 0.0000 \times YLDRNK + 0.0010 \times EARNCHG - 0.0017 \times IVAL \\
 (0.16) \quad (1.03) \quad (-0.72) \\
 Adj.-R^2 = 0.0341 \quad F-statistic = 3.04**
 \end{array}$$

* Significant at 5% level.

These results show that most ownership and non-ownership variables are insignificant, but *ALPHA 0 to 5* is positive and significant at the 5% level. We interpret this finding as evidence that the negative correlation between firm size and insider ownership can increase the informativeness of earnings announcements (and therefore, possibly, dividend announcements) of firms with higher insider ownership.

Next, we examine earnings changes surrounding dividend change announcements in our sample. If the reason for the price reactions to dividend changes being smaller as insider ownership increases were that such announcements are less informative, we would expect to find corroborating evidence in subsequent dividend announcements. We examine the relationship between the earnings change from the fiscal year before the year of dividend change to the fiscal year after the year of dividend change to answer this question. The annual earnings data for this purpose is obtained from the Compustat Annual files. Regression results (not reported) show that, the difference between earnings per share, normalized by the share price prevailing before the last fiscal year, does not depend on any of the ownership variables. Examining changes from the year before to two or three years after the year of dividend change also confirms that there is no relation between the ownership structure of the firm and the change in future earnings of the firm.

Third, we examine the possibility that dividend changes for firms with higher insider ownership are less informative because managers of such firms are less likely to use dividend changes to signal future earnings. This reasoning is quite plausible because such managers are relatively immune from market for corporate control and may make dividend decisions based on other considerations (such as the implications of higher dividends for their taxes). If strategic considerations

play a smaller role, we would expect that managers would vary the dividend amount less frequently. Regression below examines the relationship between the number of quarters since the last change in regular and quarterly dividend payment (denoted by *NUMQTR*) and the various ownership and non-ownership variables.

$$\begin{array}{l}
 NUMQTR = 6.897 - 0.218 \times ALPHA\ 0\ to\ 5 + 0.009 \times ALPHA\ 5\ to\ 100 + 0.290 \times ICTRL \\
 (6.89)*** \quad (2.14)** \quad (0.86) \quad (0.93) \\
 + 0.019 \times INST + 0.600 \times ICOMP - 0.507 \times IFAMILY - 0.888 \times IMISC \\
 (2.09)** \quad (1.53) \quad (-0.94) \quad (-0.88) \\
 + 0.027 \times YLDRNK + 0.0031 \times DIVCHG - 0.512 \times IVAL \\
 (4.67)*** \quad (0.93) \quad (-3.70)*** \\
 Adj.-R^2 = 0.0315 \quad F-statistic = 4.97***
 \end{array}$$

** Denotes significant at 5% level.

*** Denotes significant at 1% level.

The regression results show that the coefficient of *ALPHA 0 to 5* is negative and significant at the 5% level. This indicates that the dividend policy becomes less stable as the insider ownership increases in the range of 0 to 5%, which is inconsistent with the hypothesis that managers of firms with higher insider ownership do not change dividends as much because they need not signal with them.

Finally, we note that not only have we found that the market's reaction to dividend changes decreases with increases in insider ownership, we also found that the market's reaction is lower when a family owns a block of the stock or when managers exercise voting control over shares they do not own. The findings are consistent with the agency-cost explanation and it is not clear how these findings could arise due to the information content of dividends.

Dividend Increases and Decreases

The preceding regressions in Tables 3 and 4 were all carried out with the pooled sample of all increases and decreases. Table 5 shows the results of ordinary-least-squares regressions separately for the groups of increases and decreases. Regressions 8 and 9 report for the sample of 1,140 increases, with and without the non-ownership control variables, and regressions 10 and 11 report for the sample of 82 decreases. The coefficients of the three ownership variables, *ALPHA 0 to 5*, *ICTRL* and *IFAMILY*, are significant at the 5% level in both regressions 8 and 9, although their magnitudes are smaller than in the pooled sample. Regression 9, which includes all ownership and non-ownership

Table 5. Regression of Announcement-period Returns on Ownership and Non-ownership Control Variables for 1,222 Dividend Changes from 1979 to 1987: Evidence Within Dividend Increase and Decrease Categories.

The sample consists of 1,222 dividend change announcements that satisfy the selection criteria described in Table 1. The final sample includes 1,140 dividend increase and 82 dividend decrease announcements. Insider ownership/control is denoted by *ALPHA*. To run piecewise-linear regressions, we define *ALPHA 0 to 5* and *ALPHA 5 to 100* as described in Table 3. Other ownership variables are also defined in Table 3 and non-ownership control variables are defined in Table 4.

Variable	(8)	(9)	(10)	(11)
<i>Number of observations</i>	1140	1140	82	82
	Increases	Increases	Decreases	Decreases
<i>INTERCEPT</i>	1.365 (3.18)***	2.124 (2.56)***	8.120 (4.20)***	7.000 (1.38)
<i>ALPHA 0 to 5</i>	-0.174 (-2.16)**	-0.205 (-2.41)**	-0.820 (-1.98)**	-0.934 (-2.09)**
<i>ALPHA 5 to 100</i>	-0.002 (-0.17)	0.001 (0.10)	-0.012 (-0.25)	-0.011 (-0.26)
<i>ICTRL</i>	0.547 (2.13)**	0.525 (2.04)**	3.527 (2.31)**	2.499 (1.79)*
<i>INST</i>	-0.009 (-1.39)	0.002 (0.21)	-0.051 (-1.27)	-0.002 (-0.05)
<i>ICOMP</i>	0.491 (1.49)	0.457 (1.39)	-1.715 (-1.09)	-2.404 (-1.64)
<i>IFAMILY</i>	-0.918 (-2.11)**	-0.943 (-2.10)**	-3.474 (-1.22)	-4.044 (-1.49)
<i>IMISC</i>	0.178 (0.30)	0.053 (0.09)	3.168 (0.80)	-0.077 (-0.02)
<i>YLDRNK</i>		0.008 (1.67)*		0.011 (0.40)
<i>DIVCHG</i>		0.0005 (0.16)		0.1589 (4.13)***
<i>IVAL</i>		-0.224 (-1.96)**		-1.483 (-2.24)**
Adjusted- R^2	0.0065	0.0102	0.0723	0.2545
F-statistic	2.07**	2.17**	1.90*	3.77***

***, ** and * denote significance at the 1, 5 and 10% level in a two-tailed test.

variables, has an adjusted- R^2 of 0.0102, significant at the 5% level. Regression 11 for the sample of decreases has a higher adjusted- R^2 of 0.2545, significant at the 1% level, but a large part of it is explained by *DIVCHG*, a non-ownership variable. (Table 1 shows that, on average, the magnitude of dividend

change is much larger for decreases.) Without the non-ownership variables, the sample of decreases has an adjusted- R^2 of 0.0723, significant at the 10% level. *ALPHA 0 to 5* and *ICTRL* remain significant in the sample of decreases, but *IFAMILY* becomes insignificant, perhaps because of only 82 observations.

The somewhat weaker results for dividend-increase sub-sample points to an important influence not analyzed above. Dividend decreases are more likely to be announced by firms with low values of Tobin's Q. This is likely because dividend cuts are almost always preceded by poor economic performance, as suggested by DeAngelo and DeAngelo (1990). (Our proxy for the Tobin's Q ratio, defined in the next section, had an average value of 1.51 for the dividend increase sample and 0.99 for the dividend decrease sample.) Lang and Litzenger (1989) show that firms with low values of Tobin's Q have higher price reaction to a dividend change announcement. Also, Jensen (1986) suggests that agency costs of free cash flow are likely to be more severe for firms in declining businesses.

5. GROWTH OPPORTUNITIES, OWNERSHIP STRUCTURE AND AGENCY COSTS OF FREE CASH FLOW

The market value of a firm equals the value of assets in place plus the value of growth opportunities. Other things being equal, firms with low growth prospects are expected to have smaller values of Tobin's Q ratio. Gaver and Gaver (1992) document a significant correlation between Q ratio and some alternate measures of growth opportunities, namely, the price to earnings ratios, R&D expenditure and holdings by growth-oriented mutual funds.

Value Line Data Base II provides the (FASB 33) replacement cost data for 745 firms from 1976–1979. From this data, we calculated Tobin's Q ratio for 2,106 firm-years using the Lindenberg and Ross (1981) procedure.¹⁹ We then obtained the 5-year growth rates of sales, cash flows and earnings per share. Q ratios had correlations of 0.28, 0.24 and 0.13 with these three growth measures, all of them significant at the 0.0001 level. Under the assumption that expected growth rates are equal to the realized growth rates, our experiment shows that Q ratio is a good measure of expected growth rates. Because the above-described procedure relies on replacement cost data, we cannot calculate Q ratios for our entire sample. Under the assumption that replacement cost equals the book value, however, we calculated a similar measure, which we denoted as QB. For the 2,106 firm years for which we calculated replacement-cost-based Q measure, we also calculated the alternative QB measure. We found

that the two measures have a correlation of 0.90, indicating that QB is a good proxy for Q. With the alternative QB measure, however, we cannot separate over-investing firms by comparing the QB ratio to 1. To account for this scaling problem, we use partitions based on ranked values of QB ratios rather than the cutoff value of 1.00 in the following tests.

For every firm included on the Value Line's Data Base II, we estimated QB ratios for each year from 1979 to 1987 by using the preceding end-of-year accounting data. Then we ranked all listed firms into two groups based on the QB values. Of the 1,222 observations in our dividend change sample, 413 were in the low-QB group and 809 were in the high-QB group. The relatively greater frequency of observations in the high QB group reflects that dividend increases are more likely for this group. The low-QB group had firms with QB values below 1.09 and the high-QB group had firms with QB values above 1.09. The median QB values in the two groups were 0.93 and 1.55. Otherwise, the ownership attributes were quite similar across the two groups. The frequencies of *ICTRL* and *IFAMILY* cases were roughly proportional to the sample sizes (120 vs. 240 and 36 vs. 93), and the *ALPHA* values averaged 13.3 and 14.9% for the low-QB and the high-QB groups. The institutional ownership was somewhat lower for the low-QB group, 27.5% vs. 38.6%, perhaps because institutions are more likely to hold growth stocks. The low-QB group was also characterized by somewhat lower market values, higher dividend yields and lower dividend changes.

Regressions 12 and 13 in Table 6 report the results of multivariate analysis with the combined samples of increases and decreases in the low-QB and high-QB partitions. The evidence between the two partitions is substantially different. With only one third of the observations, the regression within the low-QB group has an adjusted- R^2 of 0.1548. In comparison, the high QB group with two thirds of the observations has an insignificant adjusted- R^2 of 0.0044. The three previously significant ownership variables and other control variables have larger coefficients in the low-QB group. In comparison, none of the ownership variables or even the control variables are significant in the high-QB group. These results are consistent with the interpretation that agency costs of free cash flow are significant only in the low-growth sample of firms.

Comparing the two groups, we find (not surprisingly) that decreases are concentrated in the low-Q sample. Sixty-eight of the 82 decreases occur in this sample. Since there are not enough decreases in the high-Q sample, we carried out regressions within the low-QB and high-QB partitions for only the sample of increases. Regressions 14 and 15 in Table 6 show that the evidence is qualitatively similar to regressions 12 and 13. The regression within the high-QB subset of increases has an adjusted- R^2 of 0.0279. In comparison, the regression

Table 6. Regression of Announcement-period Returns on Ownership and Non-ownership Control Variables for 1,222 Dividend Changes from 1979 to 1987: Evidence Within Low-growth and High-growth Categories.

The sample consists of 1,222 dividend change announcements that satisfy the selection criteria described in Table 1. Insider ownership/control is denoted by *ALPHA*. To run piecewise-linear regressions, we define *ALPHA 0 to 5* and *ALPHA 5 to 100* as described in Table 3. Other ownership variables are also defined in Table 3 and non-ownership growth variables are defined in Table 4. Low-growth or high-growth firms are determined by QB – the ratio of market value to book value of assets of the firm.

Variable	(12)	(13)	(14)	(15)
	Low-growth	High-growth	Low-growth	High-growth
<i>Number of observations</i>	413 increases and decreases	809 increases and decreases	345 increases only	795 increases only
<i>INTERCEPT</i>	3.453 (2.18)**	1.516 (1.44)	3.234 (2.02)**	1.487 (1.43)
<i>ALPHA 0 to 5</i>	-0.553 (-3.63)***	-0.166 (-1.60)	-0.361 (-2.28)**	-0.153 (-1.49)
<i>ALPHA 5 to 100</i>	-0.019 (-1.15)	0.010 (0.92)	-0.024 (-1.41)	0.010 (0.95)
<i>ICTRL</i>	1.375 (2.97)***	1.179 (1.16)	0.361 (2.53)**	0.278 (0.90)
<i>INST</i>	-0.015 (-1.12)	-0.002 (-0.16)	0.010 (0.76)	0.000 (0.02)
<i>ICOMP</i>	-0.631 (-1.15)	0.836 (2.05)**	-0.320 (-0.57)	0.897 (2.19)**
<i>IFAMILY</i>	-2.680 (-3.10)***	-0.744 (-1.40)	-1.760 (-1.98)**	-0.687 (-1.30)
<i>IMISC</i>	-0.161 (-0.15)	0.291 (0.40)	-0.309 (-0.30)	0.328 (0.46)
<i>YLDRNK</i>	0.033 (3.69)***	0.008 (1.12)	0.017 (1.75)*	0.008 (1.12)
<i>DIVCHG</i>	0.0675 (6.16)***	-0.0001 (-0.04)	0.0218 (1.57)	-0.0009 (-0.30)
<i>IVAL</i>	-0.720 (-3.22)***	-0.138 (-0.97)	-0.500 (-2.22)**	-0.152 (-1.08)
Adjusted- R^2	0.1548	0.0044	0.0279	0.0042
<i>F</i> -statistic	8.54***	1.36	1.99**	1.34

***, ** and * denote significance at the 1, 5 and 10% level in a two-tailed test.

within the high-QB subset of increases has an insignificant adjusted- R^2 of 0.0042. All three ownership variables and two out of three non-ownership variables are significant in the low-QB subset of increases, but none is

significant in the high-QB subset. It appears that the evidence for the agency costs of free cash flow in the entire sample is driven mainly by firms with low values of Tobin's Q. Our results show that increased insider ownership and block ownership by a family or trust mitigate the agency costs of free cash flow and that control without ownership exacerbates the agency costs of free cash flow within this subset of firms.

6. CONCLUSIONS

This paper shows that market's reaction to dividend announcements is related to the ownership structure of a firm's equity. We interpret this relationship as evidence on the role of ownership structure in determining the agency costs of free cash flow. Our evidence is consistent with an interpretation that the agency costs of free cash flow decrease as insider ownership increases. The agency costs also decrease when a family owns a large block of equity, but increase when managers control voting rights of outside blocks that they do not own. The results are significant only for a subset of firms characterized by low growth opportunities, however. These results also suggest that 5% insider ownership may be a sufficient threshold to prevent managers from over-investing retained earnings.

Somewhat surprisingly, upon controlling for firm size, we find no correlation between market's reaction to dividend changes and institutional ownership. Institutional investors have become a dominant force in recent years and many researchers have documented their role in reducing potential conflicts of interest between managers and outside shareholders. In view of their growing importance, the role of institutional investors in determining market's reaction to dividend changes needs further examination with data containing finer classifications along the lines suggested by Brickley, Lease and Smith (1988).

NOTES

1. For a recent empirical examination of the information content hypothesis, see DeAngelo, DeAngelo and Skinner (1992) and Bajaj (1999). For the stockholder-bondholder conflict in the context of dividend policy, see Handjinicolaou and Kalay (1984). For the agency cost hypothesis, see Lang and Litzenberger (1989) and for the clientele hypothesis, see Bajaj and Vjih (1990). The listed papers provide additional references.

2. Lang and Litzenberger (1989) have shown that the market's reaction to dividend changes is larger for firms for which the Tobin's Q ratio is less than one. (Tobin's Q ratio is defined as the ratio of the market value to the replacement cost of a firm's assets.) Under the assumption that firms are investing in scale-expanding projects, they show that average Q ratio less than one is a sufficient condition for a firm to be

"over-investing." Lang, Stulz and Walkling (1991), Smith and Watts (1992) and Gaver and Gaver (1992) have suggested that Tobin's Q ratio could be a proxy for firm's investment opportunities.

3. Easterbrook (1984) further extended Rozeff's (1982) argument and suggested specific mechanisms through which dividends control agency costs.

4. While Rozeff (1982) treated ownership structure of the firm as exogenously specified, Demsetz and Lehn (1985) argued that firms' ownership structure is optimally determined to maximize firm value. According to Demsetz and Lehn, in equilibrium, marginal agency costs should not vary cross-sectionally with ownership structure.

5. See, for example, Morck, Shleifer and Vishny (1988).

6. When managers own a large stake in the firm and feel relatively immune from the threat of a corporate control contest, they may make dividend decisions on the basis of their personal tax planning, for example.

7. We excluded utilities by eliminating firms with 2-digit SIC codes of 41, 43 and 49. Financial firms were excluded by eliminating firms with 2-digit SIC codes between 60 and 69.

8. Another way to define a substantial dividend change is based on the size of the change, relative to free cash flow. We also examined our results in various sub-samples which were divided on the basis of how large the dividend change was, relative to free cash flow of the firm, as described later.

9. Since 1979, Value Line has reported total common stock holdings by institutions which file 13(f) reports with the Securities and Exchange Commission (SEC). All institutions with equity assets exceeding \$100 million must file with SEC within 45 days after each quarter end. Between 1972-1978, *Value Line Investment Survey* reported ownership of common stock by 99 major investment funds.

10. See Aharony and Swary (1980), Eades, Hess and Kim (1985) and Bajaj and Vjih (1990) for examples.

11. Value Line follows about 1,700 stocks belonging to more than 95 industries. The companies are selected on the basis of investors' interest, as measured by trading volume. Collectively, these stocks account for more than 95% of all trading volume on U.S. exchanges. The total universe of companies followed by Value Line is divided into 13 reporting groups according to industry classifications. Value Line issues a new edition of reports each week on individual companies and the industries they represent, hence covers all companies every calendar quarter.

12. Several researchers have used Value Line as a source of insider ownership data. A partial list includes Rozeff (1982), McConnell and Servaes (1990), Stulz, Walkling and Song (1990) and Song and Walkling (1989). McConnell and Servaes (1990) and Song and Walkling (1989) have examined the accuracy of Value Line's insider ownership data and found that it compares favorably with the ownership data obtained directly from the proxy statements.

13. Insider ownership and control can also differ if the firm has two different classes of common stock with different voting rights. Usually, insiders own the class which has more voting rights. For obvious reasons, the class of stock with less voting power has dividend protection features. Such dividend protection clauses make it difficult to interpret the market's reaction to dividend changes in the incentive/control framework. Therefore, we eliminated such stocks from our sample. Such cases are quite rare, and until 1984, NYSE disallowed listing of firms which had more than one class of shares with different voting rights. This reduced our sample of dividend changes by about 2%.

For incentive and control effects of dual class see DeAngelo and DeAngelo (1985), Lehn, Netter and Poulsen (1990) and references in these papers.

14. See Pound (1988), Brickley, Lease and Smith (1988), and references in these papers for examples.

15. Value Line mentions blockholdings of less than 5% in less than 2% of the cases. In 76% of the cases, blockholdings are at least 10%.

16. We chose a dummy-variable specification for block ownership because block holdings are infrequent but large. Therefore, it is important to distinguish whether or not there was a blockholder and size of the block may not make much incremental difference. In the context of proxy contest outcomes, Pound (1988) recounts an often heard folklore, that winning a proxy contest becomes discontinuously easier when the dissidents' ownership increases beyond a "threshold" level (for example, 10%). He also uses a dummy variable specification for the same reason.

17. These results are consistent with McConnell and Servaes's (1990) findings that market valuations of firms, as measured by Tobin's Q, increase as ALPHA increases (at low levels of insider ownership) and as INST increases. They also found that the presence of blockholders does not increase Tobin's Q.

18. This result contrasts with the evidence provided by McConnell and Servaes (1990), who find that Tobin's Q ratios increase with institutional ownership, even after including a firm size proxy. Because of their findings and our results before, we were surprised to see that INST becomes insignificant when we control for firm size. Our results are not necessarily directly comparable to their paper, however. We have examined a sample of dividend change companies over a nine-year period. In contrast, McConnell and Servaes examine the relationship between Tobin's Q ratio and ownership structure using two cross-sections during 1976 and 1986.

19. In calculating Q ratios, we assumed that preferred stock and debt are valued at their book value.

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REFERENCES

- Aharony, J., & Swary, I. (1980). Quarterly dividend and earnings announcements and stockholders' returns: An empirical analysis. *Journal of Finance*, 35, 1-12.
- Bajaj, M. (1999). Dividend Omissions and Forecasts of Future Earnings: Some Positive Evidence on Information Content of Dividends. *Research in Finance*, 17, 13-39.
- Bajaj, M., & Vijh, A. M. (1995). Trading behavior and the unbiasedness of market reaction to dividend announcements. *Journal of Finance*, 50, 255-279.
- Bajaj, M., & Vijh, A. M. (1990). Dividend clienteles and the information content of dividend changes. *Journal of Financial Economics*, 26, 193-219.

- Black, F., & Scholes, M. (1974). The effects of dividend yield and dividend policy on common stock prices and returns. *Journal of Financial Economics*, 1, 1-22.
- Blume, M. (1980). Stock returns and dividend yields: Some more evidence. *Review of Economics and Statistics*, 62, 567-577.
- Brickley, J. A., Lease, R. C., & Smith, C. W., Jr. (1988). Ownership structure and voting on antitakeover amendments. *Journal of Financial Economics*, 20, 267-292.
- Brown, S. J., & Warner, J. W. (1985). Using daily stock returns: The case of event studies. *Journal of Financial Economics*, 14, 3-31.
- Chang, S., & Mayer, D. (1992). Managerial vote ownership and shareholder wealth: Evidence from employee stock ownership plans. *Journal of Financial Economics*, 32, 103-131.
- DeAngelo, H., & DeAngelo, L. (1990). Dividend policy and financial distress: An Empirical examination of troubled NYSE firms. *Journal of Finance*, 45, 1415-1431.
- DeAngelo, H., DeAngelo, L., & Skinner, D. (1992). Dividends and Losses. *Journal of Finance*, 7, 1837-1863.
- DeAngelo, H., & DeAngelo, L. (1985). Managerial ownership of voting rights: A study of public corporations with dual classes of common stocks. *Journal of Financial Economics*, 14, 33-69.
- Demsetz, H., & Lehn, K. (1985). The structure of corporate ownership: Causes and consequences. *Journal of Political Economy*, 93, 1155-1177.
- Eades, K., Hess, P., & Kim, E. H. (1985). Market rationality and dividend announcements. *Journal of Financial Economics*, 14, 581-604.
- Easterbrook, F. H. (1984). Two agency-cost explanations of dividends. *American Economic Review*, 74, 650-659.
- Gaver, J. J., & Gaver, K. M. (1993). Additional evidence on the association between the investment opportunity set and corporate financing, dividend and compensation policies. *Journal of Accounting and Economics*, 16, 125-160.
- Handjinicolaou, G., & Kalay, A. (1984). Wealth redistribution of changes in firm value: An analysis of returns to bondholders and the stockholders around dividend announcements. *Journal of Financial Economics*, 13, 35-63.
- Holderness, C. G., & Sheehan, D. P. (1985). Raiders or saviors? The evidence on six controversial investors. *Journal of Financial Economics*, 14, 555-579.
- Holderness, C. G., & Sheehan, D. P. (1988). The role of majority shareholders in publicly held corporations: An exploratory analysis. *Journal of Financial Economics*, 20, 317-346.
- Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance and takeovers. *American Economic Review*, 76, 323-329.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics*, 3, 305-360.
- Jensen, M. C., & Murphy, K. J. (1990). Performance pay and top management incentives. *Journal of Political Economy*, 98, 225-264.
- Karpoff, J. M., & Walkling, R. A. (1990). Dividend capture in NASDAQ stocks. *Journal of Financial Economics*, 28, 39-65.
- Karpoff, J. M., & Walkling, R. A. (1988). Short-term trading around ex-dividend days: Additional evidence. *Journal of Financial Economics*, 21, 291-298.
- Lang, L. H. P., & Litzenberger, R. H. (1989). Dividend announcements: Cash flow signaling vs. free cash flow hypothesis. *Journal of Financial Economics*, 7, 163-195.
- Lang, L. H. P., Stulz, R. M., & Walkling, R. A. (1991). A test of the free cash flow hypothesis: The case of bidder returns. *Journal of Financial Economics*, 29, 315-335.
- Lehn, K., Netter, J., & Poulsen, A. (1990). Consolidating corporate control: Dual-class recapitalizations vs. leveraged buyouts. *Journal of Financial Economics*, 27, 557-580.

- Lindenberg, E., & Ross, S. (1981). Tobin's q ratio and industrial organization. *Journal of Business*, 54, 1–32.
- Lintner, J. (1956). Distribution of incomes of corporations among dividends, retained earnings and taxes. *American Economic Review*, 46, 97–113.
- McConnell, J. J., & Servaes, H. (1990). Additional evidence on equity ownership and corporate value. *Journal of Financial Economics*, 27, 595–612.
- Mikkelson, W. H., & Ruback, R. S. (1985). An empirical analysis of the interfirm equity investment process. *Journal of Financial Economics*, 14, 523–553.
- Morck, R., Shleifer, A., & Vishny, R. W. (1988). Management ownership and market valuation. *Journal of Financial Economics*, 20, 293–316.
- Pound, J. (1988). The information content of takeover bids and resistance. *Journal of Financial Economics*, 22, 207–228.
- Rozeff, M. S. (1982). Growth, beta and agency costs as determinants of dividend payout ratios. *Journal of Financial Research*, 5, 249–259.
- Shleifer, A., & Vishny, R. W. (1986). Large shareholders and corporate control. *Journal of Political Economy*, 94, 461–488.
- Song, M. H., & Walkling, R. A. (1993). The impact of target managerial ownership on acquisition attempts and target shareholder wealth. *Journal of Financial and Quantitative Analysis*, 28, 439–458.
- Smith, C. W., & Watts, R. L. (1992). The investment opportunity set and corporate financing, dividend and compensation policies. *Journal of Financial Economics*, 32, 263–292.
- Stulz, R. M. (1988). Managerial control of voting rights: Financing policies and the market for corporate control. *Journal of Financial Economics*, 26, 3–29.
- Stulz, R. M., Walkling, R. A., & Song, M. H. (1990). The distribution of target ownership and the division of gains in successful takeovers. *Journal of Finance*, 45, 817–834.

MANAGERIAL ENTRENCHMENT AND THE EFFECTIVENESS OF INTERNAL GOVERNANCE MECHANISMS

Mark M. McNabb and John D. Martin

ABSTRACT

Founder CEOs of poorly performing firms are less likely to be replaced than non-founders. Furthermore, founder CEO firms are much more prevalent in our sample of poor performing firms than in the general population. We also report that simply replacing a founder CEO is not sufficient to increase long-term stock returns unless the founder leaves both the firm and the board. In addition founder CEO firms are less likely than non-founder CEO firms to: (i) replace the CEO with a financier; (ii) experience financial distress; (iii) file for bankruptcy; (iv) restructure assets; or (v) be targeted for takeover.

1. INTRODUCTION

We report evidence that founders reduce subsequent operating and equity performance of firms relative to the performance at firms headed by non-founders. This lower relative performance occurs during a time of active external takeover activity in the markets. We suggest that founder status provides additional powers beyond equity ownership to the CEO that increase entrenchment to the detriment of minority shareholders.

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