THE INFORMATION CONTENT OF THE ADOPTION OF CLASSIFIED BOARD PROVISIONS

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Abstract

The purpose of this study is to analyze the information content of a frequently used anti-takeover amendment, the classified board provision. If information regarding the intrinsic value of the firm is imbedded in this decision, the information should be reflected by the existence of abnormal returns. If managers are signaling private information, the change in available information should be reflected by changes in the relationship between bid and ask prices. Managers who combine classified boards and insider trading provide a unique opportunity to study signaling, financial decisions, and anti-takeover defenses. Prior studies have found that managers propose anti-takeover strategies because they have private information that the firm is undervalued, and thus is a potential takeover target. Researchers indicated that these actions benefit the shareholder, while others assert that anti-takeover provisions lead to entrenched management and lower shareholder wealth. We document empirically that the announcement of board classification significantly depresses share prices following the event day during the event interval (days +2, +45) and is a signal of potential takeover activity. We also find that dealer spread reacts to the adoption of classified boards dependent upon insider trading activity. The difference in reaction is due to changes in the level of adverse information cost.

INTRODUCTION

In the traditional Modigliani and Miller (1958) framework, the income generating ability of a firm's assets is the primary determinant of value. More recent lines of theoretical and empirical research, however, have focused on internal factors that influence the income generating process, such as managerial operations and business strategies.

Change in corporate policy is one such business decision that may have implications regarding the value of the firm. First, the policy change may alter expectations regarding future firm cash flows. In an efficient market, the stock price reaction to the announcement of the policy change is an unbiased estimate of the value of the change in future cash flows. Additionally, the announcement may contain certain information regarding the intrinsic value of the firm. The academic community generally agrees with the notion that corporate announcements reveal private information to financial markets (Balvers et al. 1993; Brennan 1991; Bushman and Indjejikian 1993; Alles and Lundholm 1993; Lundholm 1991). The basis of this signaling literature is an information asymmetry assumed to exist between shareholders and the agents they hire as managers.

This paper focuses on the information asymmetry surrounding the announcement of a particular type of corporate decision, namely the decision by management to propose a classified board provision. A classified board provision staggers the terms of directors and is a defensive strategy designed to prevent takeover attempts. The paper examines the elements of classified board provisions and how they affect both stock prices and the behavior of the security dealers who trade in the shares. To isolate the information content of classified board provisions, we examine the insider trading patterns of the high private information managers, i.e., those managers who engage in insider trading prior to the announcement of a classified board provision. For this purpose, we categorized them into two groups: (I) positive private information managers, defined as managers who increase their holdings before the proxy mailing date, and (ii) negative private information managers, defined as those who decrease their holdings. We test for stock price and bid-ask price spread reaction surrounding the proxy mailing date of the provision.

We found no significant stock price reaction to classified board announcements in the three-day window surrounding the event day. However, we document that the announcement of board classification depresses share

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prices following the event day (days +2, +45). The dealer spreads are found to systematically react to the announcement of classified boards. For the sample of negative private information firms, the magnitude of bid-ask spreads decreases and for the sample of positive private information firms, bid-ask spreads widen. This study finds, therefore, that a proposal of board classification changes the level of risk inherent in making a market for stocks. Additional findings indicate that dealers widen spreads to protect themselves against information trades, but allow spreads to fall into a more narrow range when that risk subsides. These results are consistent with the notion that financial decisions and insider trading affect market microstructure.

The remainder of the paper is organized as follows: Section Two includes a description of classified board provisions and a discussion of the competing hypotheses regarding their effect on shareholder wealth; Section Three includes the theoretical background of this paper and a review of relevant signaling and market microstructure literature; research design and methodology are discussed in Section Four; Section Five details the tests along with a discussion and interpretation of the empirical findings; and Section Six presents the summary and conclusions.

TRADITIONAL ANTI-TAKEOVER DEFENSES

A classified board provision is one of many anti-takeover charter amendments (ATCAs) that present obstacles to takeovers. A classified board provision staggers the terms of directors and can be a defensive strategy designed to prevent takeover attempts. This provision makes it difficult for raiders to gain control over boards since most firms propose three classes of directors. A proxy contest for board seats would require at least two elections for raiders to successfully gain control of the board.

Since the early 1980s, several studies have been published attempting to explain the effect of anti-takeover charter amendments on shareholder wealth. Results of the studies are inconclusive. Proponents of the stockholder interests hypothesis contend that ATCAs benefit stockholders through an increase in net wealth (Linn and McConnell 1983). They believe that the passage of ATCAs prevents more costly forms of managers seeking job protection sometimes sought by managers. Linn and McConnell (1983) found support for the stockholder interests hypothesis and conclude that the adoption of ATCAs results in an increase in firm value. Conversely, proponents of the management entrenchment hypothesis maintain that the passage of ATCAs decreases shareholder control and increases potential abuse by a further entrenched management team (Jarrell and Paulson 1987; Bhagat and Jefferis 1991; DeAngelo and Rice 1983). This research contends that incumbent managers propose ATCAs for job protection at the expense of stockholders. Subscribers to this position assert that firm value declines because of the reduced probability of receiving valuable takeover bids.

Jarrell and Poulsen (1987) and Bhagat and Jefferis (1991) found that the announcement of ATCAs has an insignificant effect on shareholder wealth. DeAngelo and Rice (1983) found that this relationship resulted in statistically insignificant abnormal returns. They suggest that this may point to another hypothesis, namely the existence of an "Irrelevance hypothesis".

Agrawal and Mandelker (1990) led research suggesting signaling as a motive behind ATCAs contending that the decision to adopt a classified board may be motivated by the fact that the firm is undervalued and therefore a likely target for takeover. In such situations, management uses the classification as protection against subsequent job termination in the event of a hostile change in control. These findings are consistent with Talmor (1981) whose results indicate that managers use corporate decisions to signal the intrinsic value of the firm.

BACKGROUND

Signaling - There are several studies that focus on the signaling interpretation of managerial decisions (Glosten and Milgrom 1985; John and Mishra 1990; Talmor 1981; and Balvers et al. 1993). Such studies found that corporate insiders maintain a superior information set compared with investors (outsiders). Information that is undisclosed to the market is imbedded in managerial decisions. Through their actions, corporate insiders reveal the undisclosed information to the outsiders. It can be quite costly for investors to obtain information that managers have readily available. Therefore, it can be optimal for managers to periodically convey their private information to financial markets through costly signals.

Talmor (1981) indicates that signaling is unavoidable. His findings contend that once the market invokes a signaling apparatus, whenever asymmetric information is present, signaling is inherent in every decision made by the firm. Most signaling models that explain stock price behavior of corporate announcements assume that insiders cannot engage in trading to benefit from such announcements. John and Mishra (1990) present a model that allows

for insider trading, subject to compliance with Security and Exchange Commission (SEC) regulations. They model insider trading as a primary signal that reveals information to the market. Their findings show that the use of two signals, used jointly, is the most efficient and least costly method of conveying management's expectations of future earnings. Their study develops a signaling model that defines insider trading as a signal used by corporate insiders combined with the signal activity of a corporate announcement of capital expenditures.

It is reasonable to extend this research to include the proposal of classified boards. Consider a situation in which there is some information imbedded in management's decision to propose a classified board provision. Further, the market pricing mechanism fails to identify and/or the market fails to identically interpret the information. By observing other managerial actions during the same period, outsiders gain insight into management's perception of the condition of the firm. This multiple signaling methodology is relevant for this paper. Insider trading may signal firm undervaluation. Insider trading, coupled with the intention by management to adopt a classified board provision, could be interpreted as a signal of a possible takeover bid. As such, part of this analysis focuses on insider trading prior to the announcement of a proposed classified board provision.

Bid−Ask Spreads-It is widely held that specialists and dealers face at least three potential costs in functioning as market makers (Glosten and Milgrom 1985). They face transaction costs, inventory carrying costs, and adverse selection costs. To cover these costs, specialists adjust bid and ask prices. The difference in the two price levels is known as the bid-ask spread. Glosten and Milgrom (1985) developed an adverse selection model in which dealer's bid-ask spread depends on the losses expected from trading with informed traders, and the gains expected in trades with liquidity traders. In their model, the spread may adjust rapidly or slowly after a change in relevant information to reflect the trading patterns of both information and liquidity traders.

Copeland & Galai (1983) studied the informational aspects of bid-asked spreads and found that the dealer's objective is to choose a bid-ask spread that maximizes his profit. If the spread is too wide, he loses expected revenue from liquidity traders. If the spread is too narrow, the probability of losses to the informed trader increases. The loss to informed traders is the adverse selection component of the bid-ask spread.

Other studies have documented changes in adverse selection in response to financial decisions. Tripathy and Rao (1992) studied adverse selection and spread behavior on over-the-counter (OTC) seasoned equity offerings. They reported that the adverse selection component as a percentage of the total spread is about 43 percent for National Association of Security Dealers Automated Quotations (NASDAQ) stocks. Howe and Lin (1992) using bid-ask spreads found that dividends convey information to the market, thereby reducing information asymmetry.

RESEARCH DESIGN AND METHODOLOGY

The Investor Responsibility Research Center (IRRC) maintains a publication that tracks corporate governance issues. The report identifies firms that have adopted classified boards through 1990. IRRC data provides the year in which the classified board was adopted. We examined each proxy statement to obtain proxy mailing dates and to verify that a classified board was an agenda item on that year's statement. The proxy mailing date serves as the appropriate event date when using standard event study methodology. A three-day event window (the announcement date and the two surrounding trading days) is used to calculate prediction errors in order to analyze the information content of anti-takeover amendment, the classified board provisions. Cumulative prediction errors are calculated over the event interval covering days -45, -2 and days +2, +45. Bhagat (1983) provides evidence consistent with the notion that information contained in proxy statements does not bias event study results.

The Official Summary of Security Transactions and Holdings published by the SEC was consulted to identify the firms in which insider trading activity occurred prior to the announcement date. Firms qualifying for "insider" status had insider trades during a period of ninety trading days before the announcement date. The publication categorizes trades into twenty-one separate transaction types. For the purposes of this study, we included only transactions listed as a private purchase, private sale, open market purchase, or open market sale. Each firm qualifying as an "insider" was classified as either a "net buyer" or "net seller." Firms not qualifying for "insider" status were dropped from this study. This decision eliminated a majority of the firms from consideration.

Data used to determine the impact on bid-ask spreads were obtained from tapes provided by the Institute for the Study of Security Markets (ISSM). That database includes every quotation from the consolidation quotation system for New York Stock Exchange (NYSE) and American Stock Exchange (AMEX) listed stocks. Unfortunately, the ISSM database has incomplete data before 1990 for NASDAQ firms. Therefore, no NASDAQ firms were included in this study. Therefore, the total sample used for this analysis was reduced to fifty one firms. These firms were partitioned as follows: 1) Total Classified Board Sample, 2) Insider Trades - Net Buyers, and 3) Insider Trades - Net Sellers.

Daily returns data provided by the Center for Research in Security Prices (CRSP) were used to determine the impact that classified board proposals have on stock prices. An estimation period of 250 days that ends 46 days before the event date is used. The market

model methodology described in Equation (1) was used to calculate prediction errors. Since a t random variable has variance equal to its degrees of freedom divided by the its degrees of freedom minus two, the test statistic is the Z statistic represented by Equation (2). The Mikkelson and Partch (1988) adjustment ensures that prediction errors will not be biased in the presence of serial dependence.

Equation 1

$$PE_{jt} = R_{jt} - (\hat{\alpha}_j + \hat{\beta}_j R_{mt})$$

where:

PE_{jt} = market model prediction errors of firm j on event day t,
R_{it} = return of firm j on event day t,
$\hat{\alpha}_j$ and $\hat{\beta}_j$ = market model parameters of firm j. These parameters were estimated by ordinary least squares regression using daily returns for 250 days which ends 46 days before the event date,
R_{mt} = the CRSP market index on event day t.

Equation 2

$$Z = \Sigma \, SCPE_j \div \sqrt{J} \qquad N(0,1)$$

where:

Z = Z test statistic distributed unit normal,
$SCPE_j$ = standardized cumulative prediction error of firm j. $SCPE_j$ is computed by dividing the summed sample standardized prediction errors for given day t by the square root of the number of sample firms,
J = total number of firms in the sample.

To test for the reaction of the percentage bid-ask spread to an unexpected announcement of a classified board provision, we use a simple deviations from the mean model documented by Tripathy and Rao (1992) in a study of the information content of seasoned equity issues. The actual percentage spread is calculated as follows:

Equation 3

$$PS_{jt} = [ASK - BID] \div [0.5 \times (ASK + BID)]$$

where:

PS_{jt} = actual percentage spread or reported percentage spread of firm j on event day t,
ASK = the price at which a market maker is willing to sell a specified quantity of a particular security,
BID = the price at which a market maker is willing to purchase a specified quantity of a particular security.

The true bid-ask spread of the firm is estimated over a sample period of 75 trading days ending 6 days before the announcement date. For firm j, the abnormal percentage bid-ask spread on day t during the event period is shown by Equation (4). The statistic to test the null hypothesis that the mean abnormal spread is zero for each day in the event period is the t statistic shown in Equation (5).

Eqution 4

$$APS_{jt} = PS_{jt} - \hat{PS}_{jt}$$

where:

APS_{jt} = abnormal percentage spread of firm j on event day t,

$\hat{PS}_{jt}$ = estimate of the true percentage spread during estimation period s,

Equation 5

$t_t = MAPS_t \div \sigma(MAPS_t)$

Equation 6

$MAST_t = \Sigma(1/J)APS_{jt}$

where:

$MAPS_t$ = mean abnormal percentage spreads of on event day *t*,

$\sigma MAPS_s$ = standard deviation of mean abnormal spreads in cross section during the estimation period,

J = total number of firms in the sample.

TESTS, RESULTS, AND INTERPRETATIONS

Test I: Using the event study methodology highlighted in the previous section we calculate abnormal returns for the total classified board sample and for both net insider buyer and net insider seller sub-samples. Panel A of Table 1 contains these results, which shows insignificant stock price reaction in the three-day window surrounding the event day. Share price reaction over this interval does not seem to depend on insider trading patterns. The cumulative prediction errors over various ranges were calculated in Panel B Table 1. Significant positive cumulative abnormal returns were documented at the 5 percent level prior to the passage of the provisions (days -45, -2) for the full sample firms. This means that the full sample of firms performed above their risk-adjusted expected level in the months preceding the proxy mailing date. However, these same firms performed below their risk-adjusted levels following passage of the provisions (days +2, +45). Overall, the results from Test I suggest that the market reaction to announcement of a classified board provision in the three-day window does not lend support to either the Stockholder Interests Hypothesis or the Management Entrenchment Hypothesis regarding the effect of an anti-takeover charter amendment on shareholder wealth.

TABLE 1
Event period average prediction errors (APE) and event interval cumulative prediction errors (CPE) for firms in which a classified board provision was adopted during the period 1988-1991. The total sample is divided into two sub-samples based on insider trading: Net Buyers and Net Sellers

Panel A: Average Prediction Errors

Event Period	Full Sample		Net Buyers		Net Sellers	
	APE (%)	Z	APE (%)	Z	APE (%)	Z
Day –1	-0.00	-0.9	-0.17	-0.9	0.10	-0.4
Day 0	-0.26	-1.1	-0.43	-1.1	-0.16	-0.5
Day +1	-0.17	-1.2	-0.51	-1.2	-0.01	-0.6

TABLE 1
Event period average prediction errors (APE) and event interval cumulative prediction errors (CPE) for firms in which a classified board provision was adopted during the period 1988-1991. The total sample is divided into two sub-samples based on insider trading: Net Buyers and Net Sellers

Panel B: Cumulative Prediction Errors

Event Interval	Full Sample		Net Buyers		Net Sellers	
	CPE (%)	Z	CPE (%)	Z	CPE (%)	Z
(-45, -2)	5.81	2.2[a]	6.77	1.7[b]	4.99	1.4
(+ 2, +45)	-4.05	-2.0[a]	-2.84	-1.3	-4.99	-1.5

[a]Significant at 5 percent
[b]Significant at 10 percent

Test II: The next series of tests focuses on the reaction of the percentage bid-ask spread to an unexpected announcement of a classified board provision. Using the methodology previously described, we calculate abnormal spreads for each sub-sample. Daily mean abnormal percentage spreads and differences in the spread reaction between net buyers and net sellers are shown in Panel A of Table 2. Panel A of Table 2 indicates that the net buyer group experienced widening spreads significant at the 5 percent level. When insiders buy shares, dealers respond to the announcement of classified boards by making spreads significantly wider. The net seller group experienced narrowing spreads, although the associated test statistics indicate that the spreads are not statistically different from zero. Panel B of Table 2 indicates that for the group of net buyers, the abnormal percentage spreads are significant over key windows surrounding the event. They are wider around the proxy mailing date and during a four-day post-event trading interval.

Conversely, cumulative mean abnormal percentage spreads narrowed for the net seller group. Although they are not significant on the event date as indicated in Panel A of Table 2, they are significantly narrower around the event date and remain so afterwards. These results are consistent with the argument that corporate insiders increase their personal stake in the firm when they anticipate positive events and decrease their investment when they anticipate negative events.

Finally, we use a simple difference in the means test to determine if spreads are significantly different during the estimation period and the event interval. The results are shown in Panel C of Table 2. These results are consistent with spreads being wider during the event period and event interval for those firms whose managers bought shares and more narrow for those firms whose managers sold shares. For this difference in the means test, we assume that the variances were equal during the event period, event interval, and estimation period. For both sub-samples, the null hypothesis of equal variances could not be rejected. A p-value of 0.1213 for the net buyer sample and a p-value of 0.9338 for the net seller sample which were not reported in the tables were also calculated.

We attribute the spread reaction to a change in the level of adverse information costs incurred by security dealers. The proposal of board classification is only part of the change in information that is critical to dealers. To establish and maintain optimal spreads, dealers must also consider insider trading patterns. The change in managerial ownership contains information about future takeover activity, and dealers must guard against trading with someone who has superior information regarding takeover premiums.

Before management proposes a classified board provision, they have an incentive to investigate potential shareholder response. Management would appear unskilled or unsophisticated if a proposal they sponsored and recommended was rejected by shareholders. Consequently, there is some leakage of information about classified boards prior to its actual announcement. This could explain the stock price appreciation during the crucial period before the proxy statement is mailed. Shareholders build possible takeover premiums into stock prices because any ATCA can be interpreted as a signal that management perceives the firm to be undervalued and a possible takeover candidate. However, when the proxy statement is mailed, and when shareholders know with certainty that the classified board will be adopted, the probability of an actual takeover is reduced because of the takeover defense. Share prices decline, although not significantly, on that day to reflect an increase in the risk of receiving actual takeover premiums.

TABLE 2
**Mean abnormal percentage spreads (MAPS) for the sub-samples
of firms with insider buying and insider selling during the period prior
to and subsequent to the proxy date of a classified board provision.**

Panel A: Daily Mean Abnormal Percentage Spreads

Event Period	Net Buyer Sample		Net Seller Sample	
	MAPS	t-stat	MAPS	t-stat
-1	0.003485	2.15[a]	-0.001915	-1.45
0	0.003310	2.05[a]	-0.001669	-1.26
+1	0.002333	1.44	-0.001508	-1.14

Panel B: Cumulative Mean Abnormal Percentage Spreads over Event Interval

Event Interval	MAPS	t-stat	MAPS	t-stat
(-4,-1)	0.002512	1.13	-0.001026	-0.47
(-1,0)	0.012342	4.48[a]	-0.008351	-10.24[a]
(0,+1)	0.006023	4.06[a]	-0.008872	-13.96[a]
(+1,+4)	0.006254	4.68[a]	-0.006254	-8.91[a]

Panel C: Difference in Percentage Spreads Test Between Estimation and Event Interval

Period	N	APS	N	APS
Estimation	75	-0.00008455	75	0.00007476
Event	9	0.00200463	9	-0.00087627
t-stat		4.11[a]		-2.21[a]
p-value		(0.0001)		(0.0303)

[a]Significant at 5 percent

Agrawal and Mandelker (1990) discuss the possibilities of managers using ATCAs to signal future takeover activity. Our results are consistent with the view that the adoption of board classification is a signal, but the value of the signal depends on insider trading activity. Management's trading patterns distinguish between those managers who perceive their firm to be undervalued and those managers interested only in protecting themselves in the long run against job termination. The spread reaction to classified boards is not uniform, but also depends on insider trading activity.

Managers who use classified boards and increase their holdings have a stronger belief that their firm is undervalued than managers who decrease their holdings. Classified boards are used to secure employment, but managers who buy shares hope to reap takeover premiums in a hedge against job loss. The combination increases risk to security dealers because of the uncertainty of the takeover market and the speculation of future bids. To protect themselves against insider information trades motivated by the pursuit of takeover premiums, dealers widen

spread. These wider spreads discourage information trades and make liquidity trades more attractive. Even in the face of uncertain takeover premiums, dealers can still maintain optimal spreads.

Managers who use classified boards and decrease their holdings are signaling that their firm is overvalued and the board classification is used only as a precautionary device. Since managers signal a lack of potential takeover activity, dealers are exposed to less adverse information risk and allow spreads to narrow.

CONCLUSION

Insider buying can be interpreted as a signal of firm undervaluation. Insider buying, coupled with the intention by management to adopt a classified board provision, may be interpreted as a signal of a possible takeover bid. We categorized a sample of firms in which classified boards are proposed into two groups: net insider buyers and net insider sellers. The results show that managers who purchase additional shares before adopting classified boards are hedging their total wealth. In the event of a takeover and subsequent job termination, inside buyers will realize takeover premiums. Conversely, managers who sell shares before adopting a classified board have no useful inside information about the likelihood of a takeover. As such, their motivation for the classification is pure entrenchment. We use two independent data sets to test for stock price and bid-ask spread reactions to the adoption of classified board provisions.

Our results provide minimal support for management entrenchment. The announcement of board classification depresses share prices following the event and is a signal of potential takeover activity. If managers sell shares prior to adopting classified boards, they are indicating that they believe that their firm is currently not a takeover candidate. Managers who buy shares prior to adopting classified boards are signaling undervaluation and using higher levels of ownership to hedge against job loss in the event of a takeover.

Dealer spreads react to the adoption of classified boards dependent upon insider trading activity. Spreads widen if managers have bought shares and spreads narrow if managers have sold shares in the months prior to the classification announcement. We find that the difference in reaction is due to changes in the level of adverse information cost. The present paper has implications for further studies in which researchers might extend this analysis to include the effects of stock dividends, stock splits, or other capital structure changes.

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