

## **AN EMPIRICAL EXAMINATION OF THE INFORMATION CONTENT OF BALANCE SHEET AND DIVIDEND ANNOUNCEMENTS: A SIGNALING APPROACH**

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### **Abstract**

This paper examines whether changes in financial statements and dividends can together provide a better information transmittal system to deliver missing private information on the firm. The dividend signal draws its value from three sources: its expected content favorableness, sign of dividend change, and type of signaling role. The signaling system can involve three corporate attributes: capital investment, financing, and agency decisions, all of which contribute to the firm's future cash flows. The findings show that the strength of market reaction to dividend announcement depends on the role of the dividend signal (confirmatory, clarificatory or unclear). The results also reveal that the market is more concerned with the news favorableness than with the sign of dividend change.

### **INTRODUCTION**

Miller and Modigliani's [15] seminal paper on the relevance of dividend policy to firm valuation continues to challenge both theorists and practitioners. On the one hand, dividends are like cash recycling. Therefore, they should have no influence on the market value of the firm. On the other hand, firms, in general, maintain target dividend payouts over time. Also, investors receive cash dividends and do react to dividend change announcements. Therefore, for wealth maximizers, knowledge of how dividend relates to the value of the firm is a non-trivial issue.

The consensus in the recent dividend literature is that dividend announcements contain valuable information not known to the market (e.g., see Healy and Palepu [9], Wansley and Lane [20], Wansley et al. [21]), and Haw and Kim [8]). Other studies by Fama and Babiak [7] and Black [4] show that American firms are reluctant to raise their dividend payouts unless they can preserve the higher levels over time. One implication of these findings is that dividend changes may reduce uncertainty about the firm's future cash flows. This contention, however, remains an empirical question.

Ross [18] and Battacharya [3] integrated the information content hypothesis with the signaling theory. Their hypothesis assumes that managers possess private information about the firm's attributes not known to the market. This information is valuable if the investments in place or opportunities to invest can have positive effect on the firm's future cash flows. In this circumstance, managers must use expensive, but credible, dividends to communicate this private information to the market.

The dividend signaling theory has been represented under alternative equilibrium models. The underlying notion in these models is that only investment attribute contributes to the firm's cash flows. Yet, this assumption ignores other possible sources such as financing and agency attributes. Furthermore, the majority of signaling studies do not account for the events preceding a dividend change. These events may reflect on the magnitude and

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direction of share price response to dividend announcement.<sup>1</sup> This paper accounts for some of these deficiencies that plagued earlier research.

This paper proposes that in a world of asymmetric information, three corporate attributes (i.e., capital investment, capital structure, and agency) are transmitted to the market in two phases. The first phase is mandatory. During this phase, information is communicated through the financial statements. Investors evaluate the released information for its favorableness and clarity of the meaning of corporate attribute (clear or unclear).

In the second phase, managers use their discretion to announce a dividend change as signaling means. The dividend change signal can *confirm* good, bad or flat news already observed in phase one. Alternatively, the signal *clarifies* what was ambiguous in the first place so the news about the firm becomes clearly good, clearly bad, ambiguous (net good or net bad), or remains flat. Occasionally, dividend announcement can be *unclear*, and therefore of less significant explanatory power. Thus, the confirmatory *or* clarificatory role of the dividend change may determine the value of the dividend signal.

This paper suggests that the share price response to dividend signal is jointly determined by three factors: (1) the expected content favorableness from the dividend signal, (2) the sign of dividend change, and (3) the dividend signaling role. The latter two factors were the subject of Elfakhani's [6] study. The paper further provides an empirical mechanism to classify dividend signals according to those three ingredients. It extends Elfakhani's results in three ways. First, it evaluates the favorableness of the released information. Second, it lumps all events according to the examined ingredient. Third, it investigates the interaction among the three signaling components.

The results show that this approach better reflects the impact of the signaling process on stock prices around dividend announcements. In particular, clarificatory signals induce significant market reaction by resolving most of the uncertainty predominant before dividend releases. Furthermore, dividend decrease (increase) signaling good (bad) news brings on positive (negative) market response. This observation signifies that content favorableness dominates the sign of dividend change (up or down).

The next section introduces the two-phase information transmittal system along with the methodology to test it. In section III the hypotheses to test the proposed system are formed, and data is described. Section IV reports the results and implications of the dividend signal tests, followed by conclusions.

## THE SIGNALING THEORY: A PROPOSED TESTING METHODOLOGY

### Assumptions

We test the proposed two-phase information transmittal system under the following general assumptions:

- (1) In presence of asymmetric information, management gradually sends signals to communicate the true value of the firm. In this context, balance sheet changes are released first followed by dividend signals. The two-phase information transmittal process confirms *or* improves the existing level of certainty about resources in place. Alternatively, it helps the assessment of present value of projected cash flows from future opportunities.
- (2) In their evaluation of dividend signal, investors weigh three factors: the signal expected content favorableness from the dividend signal, the sign of dividend change, and the role of dividend signal.
- (3) The market is efficient in the semi-strong form. Yet, some complex or conflicting information may take longer time to be fully digested. However, in the short term, the investors' consensus belief is reflected in their net buys or net sells. In this circumstance, dividend may not serve as the sole signal in clarifying all uncertainty.
- (4) Stock returns are independent and stationary over time with finite variance. Therefore, given a large sample, portfolio returns have a log-normal distribution.

### The Signaling Mechanism

The investments and financing decisions are made at the management's discretion. In a world of corporate asymmetric information, managers cannot directly reveal all private information related to these decisions without incurring some costs. For example, such costs may include competitors' access to the firm's private information and

ease of market entry. Similarly, investors are not always satisfied with the speeches of the firm's management. Knowing the investors' perception, managers use the release of earnings announcements to validate some of their verbal declarations (Kane et al. [13]). Nonetheless, investors are more interested in the financial statements with the details leading to the revealed earnings figures (Swaminathan and Weintrop [19]). Financial statements can be subject to manipulation; however, we suggest that informed investors can still use them to estimate the value of the firm's attributes. Thus, the release of balance sheet constitutes the first phase of the information transmittal process.

In the first phase outsiders, including marginal shareholders, use balance sheet changes to infer the meaning and direction of the firm's attributes. These changes can be clear, with little uncertainty. Therefore, they may point to a potentially good, bad, or flat news. In this circumstance, the conjecture is that discretionary dividend changes can only confirm market understanding of already released information. Thus, in the second phase dividends work as interpreters with no signaling about future activities.

In other occasions, changes in the balance sheet do not improve certainty about the meaning and direction of released information. Thus, at this stage, the interpretation of the transmitted information is not always easy and direct. In such cases, dividend change signals can be valuable if they can provide clear information about the firm's future success. This notion is consistent with John and Williams [10], Miller and Rock [16] and Ambarish, John and Williams [2]. This process constitutes the signaling phase of the two-phase information transmittal process. Under this condition, dividend announcements signal information about future activities including, but not limited to, the sign and size of future cash flows.

For testing purposes, the number of attributes signaled increases directly with the number of balance sheet items which experience changes. However, not all changes in the balance sheet items are independent. Thus, each attribute can require one or more of these changes. For example, a new investment (I) financed by a debt issue (B) requires changes to both balance sheet items.

## The Evaluation Of Dividend Signals

Investors evaluate the prescribed signaling mechanism by considering three components: (1) the expected content *favorableness* from dividend signal (flat, good, bad, or ambiguous), (2) the *sign* of dividend change (+ or -) and (3) the *role* of dividend signal (confirmatory, clarificatory or unclear). The sign of dividend change reflects size and strength of the expected market reaction.<sup>2</sup> This in turn depends on the role of the signal.

In the following scheme, resolving some or all the uncertainty about the firm's state can occur right after the balance sheet announcements. Alternatively, this may have to wait until the dividend announcement or alternative signals. This exemplifies the role of dividend signal as follows:

Phase-One: Balance Sheet Announcement		Phase-Two: Dividend Announcement		Signaling Evaluation	
News Favorableness	Attribute Clarity	Expected Favorableness	Attribute Clarity	Signaling Role	Expected Market Response
Flat	Clear	Flat	Clear	Confirmatory	No Reaction
Potentially Good	Clear	Good	Clear	Confirmatory	Low/Med Positive
Potentially Bad	Clear	Bad	Clear	Confirmatory	Low/Med Negative
Ambiguous	Unclear	Good or Bad	Clear	Clarificatory	Med/Hi Pos./Neg.
Ambiguous	Unclear	Ambiguous	Unclear	Unclear	Low/Med Net Pos./Neg.

If the market interpretation of balance sheet changes reflecting the firm's attributes is simple and straightforward, a consensus firm value can then be reached. In this case, reassured investors react based on their appreciation of the revealed attribute. This dividend signal is labeled confirmatory. Practically speaking, a *confirmatory* signal occurs if a single attribute can project one value about the revealed attribute both before *and* after the dividend announcement. For example, the first combination of Table 1 shows a firm that has undertaken a new positive NPV project financed by debt and has had an increase in liquidity ( $\Delta C > 0$ ). An increase in dividend would reinforce the expected positive news released to the market.

On the other hand, balance sheet changes include more than one attribute and may carry conflicting news (simultaneous positive and negative news). In this case, the interpretation of balance sheet information is less clear. For example, a debt-for-equity swap not accompanied by any new investment is illustrated in the second entry of Table 1. It can be a capital restructuring decision (reflecting a financing attribute) *or* a transfer of wealth (reflecting an agency problem), both of which can result in positive share price reaction. A large dividend increase would resolve uncertainty by narrowing the two attributes to one, the wealth transfer interpretation. This signal is *clarificatory*.

Sometimes the dividend signal fails to clear uncertainty or is not efficient (that is economically unjustifiable). Consequently, it might take the market longer to capture the net effect of the released information in share price. In this case the dividend signaling role is *unclear*. This is not to say that one dividend signal has a zero value; instead it is expected to have a net good or net bad effect on the share price. Nevertheless, this signal would not have the same value as a clarificatory signal. The last entry of the table exemplifies a case of an equity-for-debt swap with no new investment undertaken. The swap can be simply a refinancing decision about positive or negative news depending on the tradeoff between leverage risk and interest expense tax savings. Alternatively, it can also reflect a worsening liquidity ( $\Delta C < 0$ ). With this level of uncertainty, a dividend decrease does not improve clarity. Yet, it is consistent with previously observed lack of liquidity. Thus, the effect of this signal is expected to be net positive.<sup>3</sup>

**TABLE 1**  
**Classification Of Events Into Dividend Signaling Role: A Sample**

Changes In Balance Sheet	Attribute Clarity	Dividend Change	Signaling Role	Expected News Favorableness
$\Delta C > 0, \Delta I > 0, \Delta B > 0, \Delta CS = 0, \Delta RE = 0$	High	$\Delta D > 0$	Confirmatory	Little Good
$\Delta C > 0, \Delta I = 0, \Delta B > 0, \Delta CS < 0, \Delta RE = 0$	Low	$\Delta D > 0$	Clarificatory	Good
$\Delta C > 0, \Delta I = 0, \Delta B > 0, \Delta CS < 0, \Delta RE > 0$	Low	$\Delta D = 0$	Unclear	Net Good

Note: C is defined as cash, marketable securities, account receivables and other current assets except inventory. I is set as all net fixed assets plus inventory. B includes short- and long-term liabilities. CS combines common stocks and paid-in-capital. Changes in C, I, B and RE exceeding  $\pm 5\%$  are classified as  $>0$  or  $<0$ , respectively; otherwise they are included in the no change ( $=0$ ) category. This filter is used to account for classification error and to capture only significant changes.

In this scheme, the conjecture is that a confirmatory signal is expected to cause little positive market response to good news and small negative market response to bad news. Clarificatory signals bring strong positive (negative) market reaction to good (bad) news. Unclear signals usually do not eliminate all uncertainty surrounding conflicting news. Thus, they provoke lesser market movements than clarificatory signals. Thus, the three types of dividend signaling role ranks from most to least valuable. A clarificatory signal has the highest value and a confirmatory signal has the lowest value.

Next, the two-phase information transmittal process is examined to investigate the validity of the testing methodology in interpreting the dividend signal by its role, dividend change and expected content favorableness. Any interaction among the three components is also scrutinized. The testable contention is that this process can contribute to a better assessment of the dividend signal and therefore the firm's value.

## Hypotheses

In this context, several hypotheses are constructed. The first hypothesis explores the effect of dividend signaling role on stock prices.

Hypothesis 1: The role of dividend signal (confirmatory, clarificatory, or unclear) affects share price following the dividend announcement.

Hypothesis two is set to examine the relationship between sign of dividend change and stock price behavior.

Hypothesis 2: Dividend change (increase, decrease, or no change) affects share price following the dividend announcement.

Hypothesis set three investigates the case of clarificatory signals. This set includes three hypotheses:

Hypothesis 3: Clarificatory signal conditioned on the sign of dividend change (+,0, or -) affects share price following the dividend announcement.

Hypothesis 4: Clarificatory signal conditioned on the content favorableness (good or bad) affects share price following the dividend announcement.

Hypothesis 5: Clarificatory signal conditioned on the sign of dividend change and content favorableness, affects share price following the dividend announcement.

Evidence in support of any hypothesis strengthens the notion that the market may be reacting to a conditional signal rather than one particular signal.

## TEST DESIGN AND DATA SOURCES

### Sampling Criteria And Data Sources

The following filters are applied to firms in the CRSP Master Daily Files and Quarterly Compustat tapes.

- (1) Firms use the same quarterly fiscal (December).
- (2) Public utilities and banks are discarded because they have regulated constraints on earnings and dividend payments.
- (3) The non-event period is set at fifteen trading days in length ending at least ten days before financial statements announcement. This is likely to free the sampling period of any contaminating or noisy announcement effects.<sup>4</sup> Examples from the *Wall Street Journal Index* are major management changes, lawsuits, and labor disputes.
- (4) Firms reporting negative earnings for two consecutive quarters are dismissed for those two quarters.<sup>5</sup>
- (5) Stocks that have splits made on or near dividend announcement are excluded.
- (6) Non-quarterly dividends are omitted. Also, non-regular (extra, special and year-end) dividends are repudiated. The effect of these dividends is short lived and, therefore, may not carry any signaling value. Regular dividend announcements made on the same day as non-regular dividends are sampled.

- (7) Regular cash dividend events are sampled even when accompanied with stock dividends.
- (8) Firms are discarded for the year in which a merger or acquisition occurs. This is to avoid any possible noise from unusual changes in earnings level or dividend policy.
- (9) Firms that announce dividends within 45 days after the financial statement release are admitted in the sample, otherwise they are dropped. As in Aharony and Swary [1] and Wansley et al. [21], approximately sixty percent of the firms on the Compustat tape used in this study fit in this category.
- (10) As in Aharony and Swary [1], firms must have their financial statement announcements made at least five trading days before dividend announcements but not more than twenty days earlier. Similarly, *Ex*-dividend days should occur within five days after dividend announcement days. This filter resulted in less than five percent reduction in sample size.
- (11) Less actively traded stocks must trade at least on the announcement day.<sup>6</sup>

Standard and Poor's Quarterly Compustat tape is the source for data on book values of quarterly cash balances, investment, leverage, common stocks (including paid-in-capital), retained earnings, earnings per share and dates of earnings announcement.<sup>7</sup> The dates of financial statement releases are also reported on the 10-Q forms filed with the Security Exchange Commissioner (SEC). Dividends per share, dividend announcement dates, ex-dividend days and daily stock returns are available on the CRSP tape. Omitted dividend announcement dates and ex-days that are not recorded on CRSP are available from the *Annual Wall Street Journal Index* and the *Wall Street Journal*. The sampling period is forty quarters starting January 1, 1976, through December 31, 1985.

## Variables Measurements

Quarterly dollar changes in cash (C), investment (I), debt (B), common stocks (CS), retained (RE) and dividends (D) are classified as positive, negative or zero. To account for classification error, a band of  $\pm 5\%$  is placed around the zero change of all balance sheet items except common stocks and dividends.<sup>8</sup> Following Kalay and Lowenstein [11], dividend omissions are recorded as regular decreases in dividends. Newly initiated dividends are treated as increases in dividends.

## Tests Design

The now classical procedure for event studies is to investigate whether there are abnormal returns around the announcement date. The announcement effect exists only if abnormal returns are significant. One popular methodology for using daily data relies on the use of mean-adjusted returns. Brown and Warner [5] show this method to be as good as the market model in detecting abnormal daily returns. One feature of the methodology is that it requires the assumption that the returns generating process is stationary. Also, it avoids problems pertinent to the market model. In particular, it neither requires a proxy for market portfolio nor a determination of systematic risk (beta). However, this approach demands dividend announcement days not cluster in calendar time; otherwise, it will lose its advantage over the market model. Nevertheless, clustering was not a problem.

After all filters, and after eliminating all partitions that have fewer than five points, the number of sampled dividend *change* announcements is 3,897 events. Each sample point is then classified to one of 161 various combinations. Table 2 reports the sample classification by the three components (dividend signaling role, sign of dividend change, and expected content favorableness from dividend signal). For example, 201 dividend increase events in 12 different combinations that are expected to send confirmatory signals. Overall, 90 combinations and 2,461 sampled points, representing 63% of the sample, have predicted good news. Of these, 495 sample points had dividend increases (representing 79% of dividend increases events), and 99 observations had dividend decreases (representing 71% of dividend decreases events). The remaining sampled events involved unfavorable news mostly associated with no change in dividend, and unclear signals.

Next, sampled events with similar characteristics are grouped together depending on the hypothesis being tested. For each group, dividend announcement events include different firms sampled over many periods.

**TABLE 2**  
**Sub-States Based On Dividend Signaling Role,**  
**Content Favorableness And Sign Of Dividend Change**

Each combination is categorized by the dividend signaling role, sign of dividend change, and expected content favorableness. All combinations in one category of dividend role-sign-favorableness are grouped in one portfolio. Numbers in parentheses represent sample points in that portfolio. The sample period is 1976 - 1985.

Signal Class	Dividend Increases (+)	Stable Dividends (0)	Dividend Decreases (-)	Total
Confirmatory, Good News	10 (201)	8 (838)	3 (39)	21 (1078)
Confirmatory, Bad News	3 (32)	14 (505)	2 (14)	19 (551)
Clarificatory, Good News	18 (265)	18 (240)	4 (50)	40 (555)
Clarificatory, Bad News	9 (87)	8 (69)	— —	17 (156)
Unclear, Good News	4 (29)	23 (789)	2 (10)	29 (828)
Unclear, Bad News	1 (9)	31 (694)	3 (26)	35 (729)
<b>TOTAL</b>	45 (623)	102 (3135)	14 (139)	161 (3897)

The abnormal returns for each group are computed over the event period. The mean abnormal return is calculated by forming an equally weighted portfolio of all individual abnormal returns for each event day. The portfolio standard deviation over the non-event period is used to standardize the mean. The cumulative abnormal returns (CAR) are calculated over the entire event period of the group. For testing purposes, the event period consists of ten trading days (days -4, ..., +5) around each dividend announcement date.

## RESULTS AND INTERPRETATION

The results of the tests for Hypothesis One are shown in Table 3. The table covers the pre-announcement period (days -4, ..., -1), the announcement period (days 0,1), the post-announcement period (days +2, ..., +5), and overall event period (days 4, ..., +5). The probability of the outcome is shown in parenthesis under the standardized cumulative abnormal returns (CAR).

Inspection of Table 3 reveals that among the three types of dividend signaling role, clarificatory signals induce the strongest market response. Overall the event period, only clarificatory signals are significant at the 0.01, while unclear signals are less significant. It also shows that a confirmatory signal does not add to what the market already knows from other managerial decisions. Thus, as the dividend signal improves the clarity of the firm's state, the market reaction becomes stronger.

**TABLE 3**  
**CAR Results For Dividend Signal Hypothesis One**

Testing dividend signals using the conventional mean adjusted returns t-test methodology: CAR's are cumulative of standardized portfolio average abnormal returns for the total event period. Hypothesis one examines the three roles of dividend signaling: confirmatory, clarificatory, and unclear. The numbers in parentheses are p-values. The sample period is 1976-1985.

<b>Signaling Role</b>	<b>Pre-Announcement (-4 to -1)</b>	<b>Announcement (0 to +1)</b>	<b>Post-Announcement (+2 to +5)</b>	<b>Total (-4 to +5)</b>
Confirmatory	0.09 (0.49)	4.52** (0.10)	-0.52 (0.41)	4.09 (0.12)
Clarificatory	2.56 (0.15)	7.10** (0.06)	1.64 (0.24)	11.30* (0.01)
Unclear	-1.26 (0.29)	4.54** (0.10)	1.20 (0.30)	4.48** (0.10)

\*Significant at .05 level; \*\*Significant at .10 level

Table 4 reports the results on testing the effect of dividend changes on stock prices (Hypothesis Two). Using a significance level of 0.01, only positive change in dividends is statistically significant. Also, it shows that a zero change in dividends by itself holds little useful information. One surprising result is that dividend decreases brought on positive reaction. This may be explained by dividend decreases in the sample revealing more good news than bad, as will be shown later. The low significance implies that dividend decreases are perceived as provide little information beyond other available announcements.

Tables 3 and 4 confirm the notion that the pre-announcement and post-announcement periods contain little new information. They also prove that usually the announcement effect occurs on the day of the announcement or one day later.

**TABLE 4**  
**CAR Results For Dividend Signal Hypothesis Two**

Testing dividend signals using the conventional mean adjusted returns t-test methodology: CAR's are cumulative of standardized portfolio average abnormal returns for the total event period. Hypothesis two investigates the effect of dividend change on stock returns. Dividend can increase (+), remain stable (0), or decrease (-). The numbers in parentheses are p-values. The sample period is 1976-1985.

<b>Dividend Change</b>	<b>Pre-Announcement (-4 to -1)</b>	<b>Announcement (0 to +1)</b>	<b>Post-Announcement (+2 to +5)</b>	<b>Total (-4 to +5)</b>
(+)	1.82 (0.22)	12.35* (0.04)	2.63 (0.14)	16.80* (0.01)
(0)	-0.91 (0.34)	3.44 (0.15)	0.08 (0.48)	2.61 (0.22)
(-)	-0.18 (0.47)	2.38 (0.17)	1.74 (0.22)	3.93 (0.12)

\*Significant at .05 level; \*\*Significant at .10 level

These results may, however, conceal another aspect of the dividend signal. The content of the firm's news may dictate the way the market reacts to signaling quality and sign. News can be good or bad, although a dividend change (increase or decrease) may imply otherwise. For instance, the failure to find a negative effect for dividend decrease appears to conflict with prior work (e.g., Wansley et al. [21]). Similarly, a dividend increase may not always bring positive market reaction. This idea is the subject of the tests for Hypothesis set three on clarificatory signals only. Table 5 reports CAR and significance levels (in parentheses) for these tests.<sup>9</sup>

**TABLE 5**  
**CAR Results Of Dividend Signal Hypothesis Set Three:**  
**The Clarificatory Signal Case**

Testing dividend signals using the conventional mean adjusted returns t-test methodology: CAR's are cumulative of standardized portfolio average abnormal returns for the total event period. Hypotheses 3-5 pertain to clarificatory signal conditioned on the sign of dividend change and the information favorableness, individually and jointly. The numbers in parentheses are p-values. The sample period is 1976-1985.

Hypotheses	Pre- Announcement (-4 to -1)	Announcement (0 to +1)	Post- Announcement (+2 to +5)	Total (-4 to +5)
<b>A. Hypothesis 3</b>				
(Clarificatory, +)	1.91 (0.21)	10.71* (0.05)	3.01** (0.10)	15.62* (0.01)
(Clarificatory, 0)	-0.82 (0.35)	1.03 (0.28)	-3.97** (0.07)	-3.76 (0.14)
(Clarificatory, -)	-0.52 (0.41)	7.02** (0.07)	3.02 (0.12)	9.53* (0.01)
<b>B. Hypothesis 4</b>				
(Clarificatory, Good News)	2.93 (0.12)	6.96** (0.06)	2.74 (0.13)	12.63* (0.01)
(Clarificatory, Bad News)	-3.84 (0.08)	-1.93 (0.20)	-1.02 (0.33)	-6.79* (0.03)
<b>C. Hypothesis 5</b>				
(Clarificatory, +, Good News)	2.64 (0.14)	8.79* (0.05)	2.84 (0.13)	14.27* (0.01)
(Clarificatory, +, Bad News)	-2.21 (0.18)	-2.10 (0.19)	0.18 (0.46)	4.13** (0.10)
(Clarificatory, 0, Good News)	2.32 (0.16)	0.84 (0.33)	-0.43 (0.42)	2.73 (0.21)
(Clarificatory, 0, Bad News)	-3.74 (0.08)	-0.61 (0.37)	-0.65 (0.37)	-5.00** (0.07)
(Clarificatory, -, Good News)	0.42 (0.42)	4.07 (0.11)	3.31** (0.10)	7.79* (0.02)
(Clarificatory, -, Bad News)	—	—	—	—

\*Significant at .05 level; \*\*Significant at .10 level

Table 5 demonstrates that a clarificatory signal can induce significant market response for both dividend increases and decreases (hypothesis 3, panel A ). In panel B, clarificatory signals, with good (bad) news, induce significantly positive (negative) overall stock price adjustments (hypothesis 4). Panel C reports signals sustaining good news almost consistently showing strong performance.

Unlike the results in Table 4, clarificatory signals associated with dividend decreases carrying good news, are significant and positive at the 0.02 level (hypothesis 5). This finding is particularly important because it shows that dividend decrease can still import significant positive market reaction. This can be consistent only if there is other corporate good news. Furthermore, signals made by dividend increases associated with bad corporate news induce a negative market reaction significant at 10 percent or less.

One major conclusion of this paper is that integrating balance sheet changes with dividend change signal can result in a more inclusive evaluation of dividend announcements. Thus, dividend policy is so complex that any model specification must integrate balance sheet data and the three ingredients of dividend signal.

## CONCLUSION

In this paper, a signaling system that accounts for the interaction between financial statement and dividend announcement is presented and tested. The testing methodology considers balance sheet information followed by dividend change signal as to resolve most of the uncertainty about the firm's future. The dividend signal has three components: (1) content favorableness (good or bad); (2) sign of dividend change (+, 0, or -), and (3) role of dividend signal (confirmatory, clarificatory, or unclear).

This paper shows that the classification of dividend signal by the three components improves the understanding of the firm's value. In particular, the more the market understands (with certainty) about the firm's sources and uses of funds before the dividend announcement, the clarifying role of dividend becomes minimal. Under these conditions, dividends are less efficient and have little value to the market. On the other hand, the less the market knows, the more eager it is to receive dividend signal and to assess its contents (as carrying good or bad news). Thus, confirmatory signal induces less market reaction in returns than those of the clarificatory or unclear signals.

Findings also show dividend signal sending good news to cause larger price movements than those involving bad news. This suggests that bad news may be discounted long before the dividend announcement, so later dividend may carry little information. Furthermore, market reaction is more dependent on the expected content favorableness, than on the sign of dividend change. Thus, neither all dividend decreases carry bad news nor all dividend increases carry good news.

## ENDNOTES

1. There are some studies that link financial statements to dividend changes in both directions, e.g., Wansley and Lane [20], and Manakyan and Carroll [14]. Alternatively, Kale and Noe [12] propose a model that related dividend policy to observable firm specifics (e.g., flotation costs, systematic and unsystematic risk.)
2. In no case in the sample was a dividend change less than 5%. Dividend changes are relatively large; thus, they can also provide information about signal strength.
3. These are just a few examples that can be generalized to classify all events into various types of dividend signaling role, sign of dividend change, and favorableness groups. Although the described classification process can prove to be judgmental, however, we assume that investors will agree on one interpretation in their trading activities around the dividend announcement.
4. The non-event sample was allowed to be twenty days with no discernible effects on the results.
5. Although this can be a selection bias, we do not expect managers or investors to rely as much on dividends as an important signaling device when they have concern about the firm's survival. Yet, these presented only a 3% reduction of the sample.

6. In no case did a sampled firm have less than three trading days during the event period, including days 0 and 1. Few firms (< 2%) had three or four trading days. However, in order to adjust for this possibility, the portfolio was standardized for every day of the event period.
7. Data items from the Compustat quarterly files that were used in this study are numbers 36, 37, 38, 39, 40, 42, 43, 54, 55, 56, 57, and 58. Sources and uses of funds are computed as follows:  $C = \#36 + \#37 + \#39$ ,  $I = \#38 + \#42 + \#43$ ,  $B = \#54 + \#55$ ,  $CS = \#56 + \#57$  and  $RE = \#58$ .
8. The reason dollar change in dividends is used is that, following Pettit [17], the market reaction does not depend on the percentage change of quarterly dividends. In addition, all changes in the balance sheet items were also measured in dollars.
9. Tests in Table 5 were replicated for confirmatory and unclear signals. The results are less significant. However, occasionally good news-unclear signals appeared to cause intense response as well. This is so although unclear signals arguably do not resolve all confusion surrounding the firm's standing. The contention is that when the market sees firms' announcements as ambiguous, a dividend change in the correct direction will induce a strong reaction since it would reduce uncertainty.

## REFERENCES

- [1] Aharony, J. and I. Swary, "Quarterly Dividend and Earnings Announcements and Stockholder's Returns: An Empirical Analysis," *Journal of Finance* 35, March 1980, pp. 1-12.
- [2] Ambarish, R., K. John, and J. Williams, "Efficient Signaling With Dividends and Investments," *Journal of Finance* 42, 1987, pp. 321-343.
- [3] Bhattacharya, S., "Imperfect Information, Dividend Policy and the Bird in Hand Fallacy," *Bell Journal of Economics* 10, Spring 1979, pp. 259-270.
- [4] Black, F., "The Dividend Puzzle," *Journal of Portfolio Management*, 1976, pp. 5-8.
- [5] Brown, S. J. and J. B. Warner, "Using Daily Stock Returns: The Case of Event Studies," *Journal of Financial Economics* 4, 1985, pp. 3-31.
- [6] Elfakhani, S., "The Asymmetric Information Hypothesis and Dividend Policy: A Micro Study of Dividend Signals," *Advances of Quantitative Analysis of Finance and Accounting* 2, Part B, 1993, pp. 45-76.
- [7] Fama, E. and H. Blasi, "Dividend Policy: An Empirical Analysis," *Journal of American Statistical Association* 63, 1968, pp. 32-61.
- [8] Haw, I. M. and W. S. Kim, "Firm Size and Dividend Announcement Effect," *Journal of Accounting, Auditing & Finance* 6, Summer 1991, pp. 325-344.
- [9] Healy, P. M. and K. G. Palepu, "Market Rationality and Dividend Announcements," *Journal of Financial Economics*, 1988, pp. 149-176.
- [10] John, K. and J. Williams, "Dividends, Dilution, and Taxes: A Signaling Equilibrium," *Journal of Finance* 40, 1985, pp. 1053-1070.
- [11] Kalay, A. and U. Lowenstein, "Predictable Wants and Excess Returns: The Case of Dividend Announcements," *Journal of Financial Economics* 14, 1985, pp. 423-449.

- [12] Kale, J. R. and T. H. Noe, "Dividends, Uncertainty, and Underwriting Costs Under Asymmetric Information," *Journal of Financial Research* 13, 1990, pp. 265-277.
- [13] Kane, A., Y. Lee, and A. Marcus, "Earnings and Dividend Announcements: Is There a Corroboration Effect?" *Journal of Finance* 39, 1984, pp. 1091-1099.
- [14] Manakyan, H. and C. Carroll, "An Empirical Examination of the Existence of a Signaling value function for Dividends," *Journal of Financial Research* 13, 1990, pp. 201-210.
- [15] Miller, M. and F. Modigliani, "Dividend Policy, Growth and Valuation of Shares," *Journal of Business* 34, 1961, pp. 411-433.
- [16] Miller, M. and K. Rock, "Dividend Policy Under Asymmetric Information," *Journal of Finance* 40, 1985, pp. 1031-1052.
- [17] Pettit, R., "The Impact of Dividend and Earnings Announcements, A Reconciliation," *Journal of Business* 49, 1976, pp. 86-96.
- [18] Ross, S., "The Determination of Financial Structure: The Incentive Signaling Approach," *Bell Journal of Economics* 8, 1977, pp. 23-40.
- [19] Swaminathan, S., and J. Weintrop, "The information Content of Earnings, Revenues, and Expenses," *Journal of Accounting Research* 29, 1991, pp. 418-427.
- [20] Wansley, J. W. and W. R. Lane, "A Financial Profile of the Dividend Initiating Firm," *Journal of Business Finance and Accounting* 14, 1987, pp. 425-436.
- [21] Wansley, J. W., C. F. Sirmans, J. D. Shilling and Y. J. Lee, "Dividend Change Announcement Effects and Earnings Volatility and Timing," *Journal of Financial Research* 14, 1991, pp. 37-50.