AN EMPIRICAL EXAMINATION OF THE DIVIDEND INFORMATION CONTENTS IN THE BALANCE SHEET: A Signaling Approach

Agus Sartono
Anna Maria Sri Asih

This study examines whether the changes in the financial statements and dividends can together provide a better information transmission system to deliver missing private information on the firm using Indonesian firms as the sample. In doing so, this study considers three components in evaluating the dividend signaling theory: the expected content favorableness, the sign of dividend change, and the role of dividend signal. The finding shows that in Indonesia, the market reactions to the dividend announcement depend on the role of dividend signals, whether it is concomitant, clarifying, or unclear. The other finding shows that this market is more concerned with the expected content favorableness rather than the dividend sign.

Keywords: dividend, balance sheet, signaling, role, clarifying, Indonesia.

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Introduction

The finance and economic literature about dividends usually assumes that managers are perfect agents of investors. Economists find dividend mystique. The celebrated articles by Merton Miller and Franco Modigliani declare them irrelevant because investors could home-brew their own dividends by selling or borrowing against their portfolios. Meanwhile, the firms that issued the dividends would also incur costs to float new securities to maintain their optimal investment policies. Dividend is hard enough to be explained. In the stock market, a company should set its dividend policy, which involves the decision to pay out earnings versus retaining them for reinvestment in the firm. Basically, the firm’s value is influenced by owner’s equity and debt. In the stock price, capital is that has constant growth, a higher dividend payment tends to increase the stock price. The increase in the stock price means the increase in the firm’s value. However, the higher dividend payout ratio lowers the company’s ability to invest in the company’s growth, which may finally cause the stock price decreases because investors do not react to the dividend change announcements. Therefore, in an attempt to maximize the shareholder’s wealth, it is important to consider the relationship between dividend and the firm’s value.

Bhagwati (1999, p. 47) noted that dividend changes can provide signals about managers’ beliefs as to their firms’ future prospects. Dividend reductions generally have a significant effect on a firm’s stock price. Since managers recognize this, they try to set dollar dividends low enough so that there is only a remote chance that dividend will have to be reduced in the future. Of course, unexpectedly large dividend increases can be used to provide positive signals.

Asymmetric information will lead to the market reaction. Managers in general have better information than outside investors. Elfhakani (1995) stated that the information is valuable if the investments in place or opportunities to invest can have positive effects in the firm’s future cash flows, and in this circumstance, managers must use expensive, and credible, dividends to communicate their private information to the market.

The signaling system explained by Elfhakani (1995) involves three corporate attributes: capital investment, financing, and agency decisions, all of which contribute to the firm’s future cash flows. Moreover, he noted that most of studies about dividend signaling theory not focused on all of these three attributes. Furthermore, the events of preceding dividend changes also ignored. In fact, Aburany and Swary (1980) found that these events might reflect on the magnitude and direction of stock price response to dividend announcement.

The main process of signaling system used in this paper is that the three corporate attributes above are transmitted to the market in two phases. The first is through financial statement, which is the mandatory one. The second is through the announcement a dividend changes as signaling means. In the first phase, investors may evaluate the financial statement for its attractiveness and the clarity of its three corporate attributes, whether it is clear or unclear. In the second phase, the dividend signals can confirm good, bad or flat news already observed in the phase one. Or, it can clarify the ambiguous part in the phase one; so that, the information becomes clearly good, clearly bad, still ambiguous, or remains flat. The other possibility is the information contained in the dividend announcement can be unclear, and therefore has less significant explanatory power.

The examination of signaling process in this paper employs the research methods done by Elfhakani (1995), where the stock price response to dividend signal is jointly determined by three factors: the expected content of favorability from the dividend signal, the sign of dividend change, and the dividend signaling role. In other words, this research mainly takes the same approach or a replication research of Elfhakani (1995) using the information on Jakarta Stock Exchange. The main research purpose is to examine whether the same conclusion could be drawn and whether there is information content and dividend of public firm in Indonesia. In short, the transmissional process and dividend signal will be examined to investigate the role of dividend change and expected content of favorability.

Literature Review

Much research about dividend announcement have been done, such as Charpentier (1978), Long and Lilezenberger (1980), Penman (1983), Watts (1977), Peot (1976), and Aburany (1980). Generally, the result showed that the dividend increases or decreases can indicate significant effects on the market price. The irrelevance of dividend policy to firm valuation observed by Miller and Modigliani (1961) continues to challenge both theoreticians and practitioners. In general, firms maintain larger dividend payouts over time and 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 normative issue (Elfhakani 1995). According to Kall and Nez (1990), many theorists concerning the value of dividends expand on the role of dividend as a signal of firm quality. While these models elaborate on the original signaling idea in Miller and Modigliani (1961), they remain the notion that the dividend conveys the information concerning the level of current or future economic profits. The signaling hypotheses holds that firms use dividends to signal asymmetric information, which induces a reassessment of the firm’s expected future earnings and a simultaneous adjustment of stock price (Manares and Gravelle 1990). Several studies, such as John and Williams (1985), Miller and Rock (1985) examine theoretically the mechanisms by which dividends can serve as signals.

Another insightful empirical research, e.g. Aburany and Swary (1980), Dyle and Weigand (1988), Manares and Carroll (1990), focused on the link between the dividend and the market’s reassessment of the stock prices movements. In general, evidence is consistent with the idea that dividends signals that the market reacts positively to dividend increases and negatively to dividends cuts. Ross (1977) and Subbalakshmi (1997) investigated the information content in dividend announcements and how they affect the signaling theory. They demonstrate that dividends provide information about the firm’s future financial activities. However, the dividend decision can change a firm’s price. Their hypotheses assumes that managers possess private information about the firm’s attributes not known to the market. This information is valuable if the investors have an opportunity to invest in the firm’s future cash flows. In this circumstance, managers must use expensive, and credible, dividends to communicate their private information to the market.
In addition, he proposed that in a world of asymmetric information, three corporate attributes—capital investment, capital structure, and agency—are transmitted to the market in the financial statements and dividend announcement. The financial statements published by firms lead- ing the investors to reveal earnings figures. Therefore, the performance of the firms can be evaluated from its financial statement, in the sense that the earnings announcement leads the dividend announcement, before evaluating the information content in the dividend. Nonetheless, investors are more interested in the financial statements with the details leading to the revealed earnings figures, Swaminathan and Weisbrod (1991). Using the information contained in the balance sheet, the investors can infer the meaning and direction of the firm’s attributes. The dividend announcement carried out after the earnings announcement can confirm the market understanding of already released information, El الف까지 (1997). Moreover, the evidence in the research conducted by Manakian and Carroll (1990) indicates that the combined influence of the lagged dividends on earnings is not significant, while the combined influence of lagged earnings in dividends is significant. Thus, in aggregate, direction of causality is from earnings to dividends.

Discussing the earnings and the dividend announcements, there are separate effects of earnings as part of balance sheet and dividend announcements on abnormal returns to equity. Easter (1991), Kane, Lee and Marcus (1984) argued that, in view of the noise associated with both earnings and dividend announcements, investors might be interested in the consistency of these signals. They found evidence of an interaction effect of earnings and dividend announcements on abnormal returns to equity.

The Signaling Mechanism of Balance Sheet and Dividend Announcements

The investments and financing decisions are made at the management’s discretion. Knowing the investors’ perception, managers use the release of earnings announcements to validate some of their verbal declarations (Kane et al. 1984). Nonetheless, investors are more interested in the financial statements with the details leading to the revealed earnings figures, Swaminathan and Weisbrod (1991). Using the information contained in the balance sheet, the investors can infer the meaning and direction of the firm’s attributes. The dividend announcement carried out after the earnings announcement can confirm the market understanding of already released information, El الف까지 (1995), in the first phase, outsiders use balance sheet changes to infer the meaning and direction of the firm’s attributes. These changes can mean good, bad or flat news. As information content of balance sheet is quite clear with little uncertainty, in the second phase, the discretion in the dividend changes can only confirm market understanding to the information content of balance sheet already released. In short, dividend changes have no signals about future activities. In the other condition, if information content of balance sheet in the first phase does not improve certainty about the meaning and direction of released information, then in the second phase, dividend change signals can be valuable if it provides clear information about the firm’s future success. If the dividend signal fails to clear uncertainty or is too inefficient, then this signal is unclear. The conjecture is that a confirmatory signal is expected to cause little positive market response to good news and small negative response to bad news.

Clarificatory signals being strong positive (negative) market reaction to good (bad) news. Unclear signals usually do not eliminate all uncertainties surrounding conflicting news. Thus, they provoke lesser market movements than clarificatory signals. Thus, the three types of dividend signaling role rank from most to least valuable. A clarificatory signal has the highest value and a confirmatory signal has the lowest value.

The translational process will be examined in order to investigate the validity of the testing methodology in interpreting the dividend signal by its role, dividend change, and expected content of favorableness. The testable hypothesis is that this process can contribute a better assessment of the dividend signal and the firm’s value.

Variable Description

Variables used in evaluating the change component of balance sheet and dividend are: cash (C), investment (I), common stocks (CS), retained earnings (RE), bonds (B) and dividends (D). Those variables can be defined as follows:

a. C is defined as all current assets except inventory.
b. I is set as all net fixed assets plus inventory.
c. B includes short and long term liabilities.
d. CS combines common stocks and paid-in-capital.
e. D is defined as cash dividend.

Changes exceeding 5 percent for C, I, B, and RE are classified as >0, those for RE are as <0; 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. Following Ralston and Lowerre (1985), dividend changes are recorded as regular decreases in dividends. Newly initiated dividends are treated as increases in dividends.

Sample Selection

The sample of this study consists of 240 public companies, which give cash dividend and have the same fiscal-years end (December). Financial institutions are discarded because they have different conditions and policies with manufacturing companies; the remaining sample is 202 companies. The firms reporting negative earnings for two years are dismissed, so the number of companies reduce to 199 companies. The companies in this sample also should release the financial statement before announcing the dividend. Therefore, the firms that announce dividend within 45 days after the financial statement release are admitted in the sample, otherwise they are dropped.

The number of companies announces dividend after the financial release is 194 companies. Those final sample fall into two group, 52 companies announce dividend within 45 days and 142 companies announce dividend more than 45 days after the financial statement released. To control the impact of other variables, companies having stock split, acquisition, or merger, stock dividend and bonus shares are excluded from the sampling frame. This research does not make separate analysis of each group and it will be done for another research.

Analysis Method

Evaluating the Dividend Signal

As stated before, investors evaluate the signaling mechanisms by considering
three components. They are expected content: favorableness from dividend signal (this, good, bad, or ambiguous), the size of dividend change (+ or -), and the role of dividend signal (confirmatory or clarifying or unclear). The size of dividend change reflects the strength of the expected market reaction. This in turn depends on the role of the signal.

The three role of dividend towards the information content brought in the balance sheet announcements before the dividend announcements are defined as follows:

a. Confirmatory: confirmatory signal occurs if a single attribute can project one value about the revealed attribute both before and after the dividend announcement. 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, reasoned investors react based on their appreciation of the revealed attributes.

b. Clarifying: clarifying signal occurs if 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, and the dividend announcement can clarify one of the possibilities of conflicting news from balance sheet items.

c. Unclear: this signal does not carry any clear explanation even for conflicting news. The dividend announcement also cannot make the information of changes in balance sheet items clearer. This unclear role does not mean that the dividend signal has a zero value; instead, it is expected to have a net good or net bad effect on the stock price. This signal would not have the same value as a clarifying signal. So, in this classification, all sample will be divided into several groups based on its expected favorableness, its dividend value and its signaling role. The objective of this classification is to test the hypotheses in each group as well as in group combinations.

Table 1. The Exemplified Role of Dividend Signal

<table>
<thead>
<tr>
<th>Phase one: Balance sheet Announcement</th>
<th>Phase two: Dividend Announcement</th>
<th>Signaling Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>News Favorableness</td>
<td>Attribute</td>
<td>Expected Favorableness</td>
</tr>
<tr>
<td>Flat</td>
<td>Over</td>
<td>Flat</td>
</tr>
<tr>
<td>Potentially Good</td>
<td>Clear</td>
<td>Good</td>
</tr>
<tr>
<td>Potentially Bad</td>
<td>Clear</td>
<td>Bad</td>
</tr>
<tr>
<td>Ambiguous</td>
<td>Unclear</td>
<td>Good or Bad</td>
</tr>
<tr>
<td>Ambiguous</td>
<td>Unclear</td>
<td>Ambiguous</td>
</tr>
</tbody>
</table>

Event study Method

a. To calculate the actual return of share, the following equation is used:

$$R = \ln \left( \frac{P}{P_{t-1}} \right)$$

where $R$ and $P$ are the return and price of the share.

b. The share’s abnormal return, the difference between observed return of security $t$ and the expected return, as well as the expected return within 60 days are calculated using the following equation:

$$AR = R_s - \beta R_m$$

where $AR$ is the abnormal return, $R_s$ is the security return, and $R_m$ is the market return.

$$\beta = \frac{\text{SIC} \times \text{HSG}}{\sum \text{SIC} \times \text{HSG}}$$

where $\beta$ is the slope of the security’s characteristic line and $\text{HSG}$ is the market return.

$c. The daily abnormal returns above are then averaged across the portfolios of firms or all securities which increase, decrease or do not change their dividends level as follows:

$$\overline{AR} = \frac{1}{n} \sum \overline{AR}_i$$

where $\overline{AR}$ is the mean abnormal return, which is calculated by forming an equally weighted of all individual abnormal returns for each event day ($t$).

To test for significance of the impact of the event during period, the abnormal return can be added to obtain the cumulative abnormal return (CAR) for the individual stock over the period. The cumulative abnormal returns are calculated over the entire event period of the group by dividing this event period into four parts: pre-announcement ($t-1$ to $t-2$), announcement ($t$), and post-announcement ($t+1$ to $t+5$) using the following equation:

$$\text{CAR} = \sum \overline{AR}_i$$

Hypotheses

The uncertainty about the firm’s state can be resolved when the balance sheet announcement. Alternatively, this may have to wait the dividend announcement or alternative signals. The common knowledge in the recent dividend literature is that dividend announcements contain valuable information not known to the market (Bhattacharya 1979; Hillier and Rock 1985; and Charette 1987). Therefore, the first hypothesis explains the effect of dividend signaling role on stock prices toward balance sheet information, which is released before the dividend announcement. The first hypothesis is formalized as follows:

$$H_1: \text{The dividend signal (confirmatory, clarifying, or unclear) affects share price following the dividend announcement.}$$

The dividend signaling models suggest that managers increase dividends only when they are confident that higher dividends can be maintained with higher subsequent cash flow. Evidence from previous research is consistent with the use of dividends as signals in that the market reacts positively to dividend increases and negatively to dividend cuts (John and Willian 1985, Watts 1973; and Lang and Litzenberger 1989). Thus, the second hypothesis is used to examine the relationship between sign of dividend change and stock price behavior. The second hypothesis is stated as follows:

$$H_2: \text{Dividend change increases, decreases, or fluctuates affect share price following the dividend announcement.}$$

Since the confirmatory and unclear signals provoke lesser market movements
than clarificatory signals to minimize problems arising, the next hypothesis investigates the case of clarificatory signals combined with the sign and the content of favorableness of the dividend. This last hypothesis is in line with Swaminathan and Weisbrod (1991); Elfakan (1995) and Asquith and Mullins (1983). The third hypothesis is formulated as follows:

\[ H_3: \text{Clarificatory signal conditioned on the sign of dividend change (increase, decrease or flat) and the content favorableness (good or bad) affects share price following the dividend announcement.} \]

Results

The results of the test for Hypothesis 1 is shown in Table 2. The table covers three parts of the test period: pre-announcement period (-4 to -1), announcement period (0), and post-announcement period (1 to +5).

The probability of the outcome is shown in parentheses under the cumulative abnormal return (CAR). Evaluating Table 2, it is revealed that among the three types of dividend signaling role, the clarificatory signal has the highest market response. From the significance level, the clarificatory signal is the only one that has significant number on the announcement date and post announcement date at the 0.05 and 0.025 levels, whereas totally it is significant at the 0.004 levels. The other two signals, confirmatory and unclear, have no significant result. It means that these two signals do not add to what the market already knows from other material events. The conclusion can be drawn from here is if the dividend signal can increase the clarity of the firm’s condition, then the market reaction becomes stronger.

Table 2 shows the results of Hypothesis 2 testing on the impact of dividend change on stock prices. From the significance number, all dividend changes are statistically significant on the post announcement and on the total test period. The dividends with positive sign bring positive market reactions. It is quite clear that most of the dividend increase bring good news to the market. To the next sign, the stable dividend, the market reactions show negative number of average abnormal return. This can be explained that the stable dividend in this sample indicates more bad news than good news. This kind of situation is also happened at the dividend decreases, which brought positive reaction. With the same analysis, it may give indication that dividend decrease in this sample reveals more good news rather than bad news. It is important to be noted here that in fact, the dividend decrease does not always bring negative reaction. This result will be clearer when evaluating the late hypothesis.

Table 3 shows the results of clarificatory signals that can significantly induce all of the dividend changes, whether it is increase or decrease. The stable dividend have an increasing number in investment.

Table 3. CAR results for Dividend Signal Hypothesis-2

<table>
<thead>
<tr>
<th>Dividend Change</th>
<th>Pre-Announcement (-4 to -1)</th>
<th>Announcement (0 to +1)</th>
<th>Post-Announcement (+2 to +5)</th>
<th>Total (+4 to +5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(+)</td>
<td>0.025 (0.008)</td>
<td>-0.00375/56</td>
<td>0.02758/125</td>
<td>0.046/3556</td>
</tr>
<tr>
<td>(-)</td>
<td>0.00457/925</td>
<td>-0.00145/05</td>
<td>-0.00180/88</td>
<td>0.0079/181</td>
</tr>
</tbody>
</table>

* significant at .05 level; ** significant at .01 level

Table 4 reports that clarificatory signals can significantly moderate the dividend changes, whether it is increase or decrease. The stable dividend have an increasing number in investment.

The relative dividend in fact can bring negative reactions. It is shown in Table 3 and Table 4 on Panel A that the stable dividend changes in negative market reactions. In Panel B, it is separated between the stable clarificatory dividends that bring bad news and good news. Both news could bring negative market reactions although both of them show positive and negative number of average abnormal returns significantly (Panel C). It is because from the magnitude, the negative reaction is bigger than the positive one.
Table 4. CAR results for Dividend Signal Hypothesis: The Clarificatory Signal Case

Hypothesis-2 examines the clarificatory signal conditioned on the sign of dividend change and the information favorableness, individually and jointly. The results in parentheses are p-values. The sample period is 1989-2006.

<table>
<thead>
<tr>
<th>Hypothesis-2</th>
<th>Pre-Announcement (4 to -1)</th>
<th>Announcement (0 to +1)</th>
<th>Post-Announcement (2 to +5)</th>
<th>Total (4 to +6)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Panel A</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clarificatory</td>
<td>0.0394 × 0.9355</td>
<td>0.0425 × 0.9355</td>
<td>0.0345 × 0.9355</td>
<td>0.0367 × 0.9355</td>
</tr>
<tr>
<td></td>
<td>(0.144)</td>
<td>(0.636)</td>
<td>(0.089)**</td>
<td>(0.411)**</td>
</tr>
<tr>
<td>Clarificatory</td>
<td>-0.0014 × 0.9355</td>
<td>-0.0014 × 0.9355</td>
<td>-0.0014 × 0.9355</td>
<td>-0.0014 × 0.9355</td>
</tr>
<tr>
<td></td>
<td>(0.135)</td>
<td>(0.636)</td>
<td>(0.089)**</td>
<td>(0.411)**</td>
</tr>
<tr>
<td>Clarificatory</td>
<td>-0.0011 × 0.9355</td>
<td>0.0270 × 0.9355</td>
<td>0.0205 × 0.9355</td>
<td>0.0230 × 0.9355</td>
</tr>
<tr>
<td></td>
<td>(0.802)</td>
<td>(0.29)</td>
<td>(0.032)**</td>
<td>(0.401)**</td>
</tr>
<tr>
<td><strong>Panel B</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clarificatory, Good News</td>
<td>0.0100 × 0.9355</td>
<td>0.0248 × 0.9355</td>
<td>0.0105 × 0.9355</td>
<td>0.0105 × 0.9355</td>
</tr>
<tr>
<td></td>
<td>(0.121)</td>
<td>(0.190)</td>
<td>(0.042)**</td>
<td>(0.042)**</td>
</tr>
<tr>
<td>Clarificatory, Bad News</td>
<td>-0.0132 × 0.9355</td>
<td>0.0070 × 0.9355</td>
<td>-0.0130 × 0.9355</td>
<td>-0.0130 × 0.9355</td>
</tr>
<tr>
<td></td>
<td>(0.579)</td>
<td>(0.223)</td>
<td>(0.272)</td>
<td>(0.093)**</td>
</tr>
</tbody>
</table>

**Panel C**

| Clarificatory, Good News | 0.0570 × 0.9355          | 0.0132 × 0.9355        | 0.0675 × 0.9355             | 0.1375 × 0.9355|
|                         | (0.856)**                 | (0.019)**              | (0.003)**                   | (0.001)**      |
| Clarificatory, Bad News | -0.0079 × 0.9355          | 0.0457 × 0.9355        | -0.0524 × 0.9355            | -0.141 **      |
|                         | (0.136)                   | (0.510)                | (0.286)                     | (0.108)        |
| Clarificatory, Good News | 0.0055 × 0.9355          | 0.0308 × 0.9355        | 0.0504 × 0.9355             | 0.0070**       |
|                         | (0.803)**                 | (0.009)**              | (0.006)**                   | (0.006)**      |
| Clarificatory, Bad News | -0.0044 × 0.9355          | -0.0261 × 0.9355       | -0.0207 × 0.9355            | -0.0207 × 0.9355|
|                         | (0.833)**                 | (0.314)                | (0.061)                     | (0.009)**      |
| Clarificatory, Good News | -0.0219 × 0.9355          | 0.0327 × 0.9355        | 0.2031 × 0.9355             | 0.2536 × 0.9355|
|                         | (0.802)                   | (0.299)                | (0.032)**                   | (0.048)**      |

*Significant at .05 level; **Significant at .10 level. Panel B and C indicate that clarificatory signals are conditioned on the sign of dividend change and the information favorableness.

This finding indicates that stable dividend does not always bring positive reaction; it is still influenced by firm's performance showed in the balance sheet. When the news from the financial statement gives a bad indicator then it is possible that the market will react negatively although the dividend remain stable. It reveals that the financial statement released by firm could give significant contribution to the market reaction toward dividend announcement.

**Conclusion**

Integrating the information content in the balance sheet and dividend gives significant signaling effect in the market reaction. This paper reveals that the classification of dividend signal into three components could improve the understanding of the firm's value. The results from this paper show that when the level of certainty towards the firm's performance before the dividend announcement, which can be reached through firm's information sources such as balance sheet, is high, then the clarifying role becomes minimal. In this circumstance, information contents on dividend become less efficient and has little value to the market. On the contrary, when the market knows are less, then the more efficient the dividend's clarifying role in the market reaction. In this condition, the market becomes easier to receive the clarificatory signal and to assess its content to carrying good or bad news. This finding is consistent with those of previous research.

Thus, clarificatory signals bring strong positive or negative market reaction to good or bad news rather than the confirmatory and unclear signals, which provide little market movements. The finding also shows that in Indonesian case, dividend signals that lead good news cause larger price movements rather than bad news. It means the bad news caused by the dividend may bring little information.

Another finding shows that the market reactions depend more on the expected content favorableness than on the sign of dividend change. This finding is shown that not all dividend decreases bring bad news. It could be due to the sampling problem as well as market conditions. The minor inconsistency with the theory provide potential research topic in the future.

**References**


