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Volume of Trading Around Public Announcement: Hypothetical Approaches

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Abstract: A firm raising its dividends often experiences an increase in its stock price and a firm lowering its dividends has a falling stock price. This seems to suggest that dividends affect stock price. But several empirical works on the ground that dividends per se do not affect stock prices have refuted this causal relationship; rather it is the informational content of dividends that affects both stock prices and volume of trading as well. Investors' trading responses to the differing characteristics of management-generated earnings forecast has been a topic of concern for a number of years. Among the means of assessing potential investor interest in the firm's earnings, the most appropriate one is to investigate investor reactions to voluntarily disclosed executive forecasts. It is urgently necessary to investigate trading volume reaction associated with earnings announcements and the effect of predisclosure information on trading volume. The public announcements change investors' beliefs and induce them to engage in a new round of trade. Based on different theories and assumptions this paper theoretically hypothesizes and finds trading volume reactions surrounding dividend announcement. Moreover, empirical analysis of trading volume claims the superiority over theoretical analysis to proof the hypotheses.

Key words: Market reaction, trading volume, dividend announcements, predisclosure information

Prologue: In an efficient securities market, prices reflect intrinsic values of underlying firm. It ensures the proper allocation of new funds to the most productive areas of the economy. Modern theories of finance argue that exchange occurs when market makers assign different values to an asset. Researches (Cready, 1988; Lee, 1992; Lee and Lee and Radhakrishna, 2000) suggest that volume of trading increases along with the investor's wealth and information about the return of the firms. Easley and O'Hara (1987) and Hasbrouck (1988, 1991) infer that, on an average, more informed investors trade more (large traders) and less informed investors are likely to make smaller trades (small traders). Their studies hypothesize that small traders' abnormal trading response is significantly positively associated with absolute random-walk forecast error, even after controlling for absolute analyst forecast errors, contemporaneous price changes, and market –wide trading, whereas large traders' abnormal trading response is not. Similarly, Bhattacharya (2001) finds a positive association between small traders' trading and seasonal random walk forecast errors for the firms with low-to-moderate analyst following, but not for firms with the heaviest analyst following. In a laboratory market study Bloomfield, Libby and Nelson (1998) find that less-informed investors systematically transfer wealth to more informed investors as a result of overly aggressive trading. However, earnings announcements may generate differential trading responses among different classes of investors. The trading activities of small traders may not stimulate large price or volume reactions because of a disclosure is of little use to individual investors based simply on negligible average price and volume reactions would be premature. Policymakers, in this connection, find the realization to evaluate the usefulness of disclosures affecting trading responses in different classes of investors. Research of volume changes may provide some insights how investors react information during the days surrounding the announcement of earnings. Any change in trading volume during the week of announcement may cause the fact that the annual earnings announcement was assumed to have had information content. Morse (1981) finds significant price changes and trading volume surrounding quarterly earnings announcements providing stronger evidence that the information processing that is costly in terms of time is taking place among investors in the securities markets. Trading volume following the public announcement may be due to different interpretations of the signal released and/or investors returning to diversified positions after taking speculative positions prior to the public announcement. Significant changes in trading volume prior to the public announcement may indicate the signal or some clue about it had been received the investors. A better understanding of trading volume is important for at least three reasons (Karpoff, 1986). First one is the inconsistency between the widespread use of homogeneous investor assumption and observations of positive trading volume indicating that investors having a demand to trade even in the absence of new information because of unique liquidity or speculative desires. Second one is that, in the financial market volume data are regularly reported along with prce data. The third reason is that the effects of institutional design of the market on trading volume are not well understood. Trading volume is lower in the imperfect market, and information has a persistence effect on volume in the imperfect market. Empirical works (Beaver, 1968 and Morse, 1980) suggest that markets do not immediately clear all demands motivated by the

information or that investors make trading mistakes and have demands to recontract in subsequent periods. The rest of the paper is organized as follows; that the following section provides a brief history of theoretical works of trading volume. Section three draws the design of the research whereas section four defines the characteristics of the research variables. In section five we explain research methodology. Section six develops the hypotheses of trading volume. Suggestions for further research occupy the seventh section of this paper. Section eight concludes the paper.

Theories of Trading Volume: Volume refers to as the number of transactions between buyers and sellers who are randomly paired in the trading period, the transactions of whom are executed by the help given by a broker. Trading opportunities arise because both the potential buyers and sellers revise their demand prices prior to the market period according to idiosyncratic liquidity or speculative desires, which appear random to the outside observer who does not have specific data on each agent. Studies by Rendleman *et al.* (1987), Freeman and Tse (1989), Bernard and Thomas (1989,1990), Bartov (1992), Bernard and Seyhun (1997), Bernard, Thomas and Wahlen (1997) suggest that there are some securities investors who fail to assimilate publicly available, value-relevant information from previously announced earnings in forming expectations about future earnings. Bernard and Thomas (1990) did also add that a part of the securities market appears to depend on the seasonal random work model to form earnings expectations. More specifically they argue that abnormal returns around quarterly earnings announcements have the same autocorrelation structure as forecast errors from a seasonal random walk earnings expectation model. In this connection, Brown and Rozeff (1979) conclude that the time-series of quarterly earnings is best modeled with a seasonally differenced first-order autogressive component to account for positive but declining autocorrelation in lags one through three and a seasonally differenced first-order moving average component to account for the negative correlation between lag one and lag four.

Because of at least three reasons theoretical treatment trading volume appears in the literature: the bid-ask spread relation to it, its relation to price changes and the information relation to it. The dealer' s bid and ask prices weighs the cost of supplying quotes to informed traders against the revenues expected from liquidity-motivated traders. Epps (1976) argues that the expected number of transactions and expected volume from exogenous shock are decreasing function of transaction costs, which are exogenously determined. The relation of trading volume to price changes is being considered by several theoretical models. Using simulation, Copeland (1976) shows that volume after all investors receive the information is positively related to the magnitude of price change. Epps (1975), in this regard, also develops a model in which the volume on transactions in which the price ticks up is greater than volume on downticks. Each model by Clark (1973), Harris (1983), Tauchen and Pitts (1983), and Epps and Epps (1976) argue that the volume is positively related to the corresponding price change over fixed time intervals or on a given transaction. The magnitude of price change is uncorrelated with the trading by speculators with private information but is positively related to trading by liquidity-motivated investors. The degree of the correlation between absolute price changes and volume is negatively related to the existence of private information. The effects of private information on volume are examined by Pfleiderer (1984) and Varian (1985). They argue that trading volume depends only on differences of opinion, even when the investors receive different information. The market price adjusts to reveal all information in the economy and thus negates the value of the unique information to any single investor. One drawback of this model is that sometimes it implies that price decreases while trading volume increases. Each investor in the securities markets receives information about the price of a risky asset that includes both a common and a unique component.

Research Design: Investors believe that upon the release of dividend announcements, trading volume increases as the traders revise their prior beliefs. Kim and Verrecchia (1991) shows that during the announcement period trading volume increases, and such increases are increasing functions of the precision of the announced information and decreasing functions of the amount of preannouncement public and private information. This implies that informed traders are most likely to trade in the periods of increased liquidity preferred by uninformed traders. Median nonannouncement level of trading can be compared with the trading volume during the announcement date. The magnitude of the differences, as measured may carry an important inference about the volume reaction to the public announcements.

To show whether the trading volume is positively correlated with the absolute value of the magnitude of the dividend declared or not it is essential to find the difference between the trading volume linkage with the random-walk earnings expectation model and the trading volume linked with the analysts' forecast model.

Firm size may be defined as the product of the number of shares outstanding and the market price per share as of the declaration date. Trading volume is related with the firm size. When a firm declares dividend, trading volume changes around dividend announcement (Lobo and Tung, 1997). Bamber (1986) finds this relation is correlated with the firm size.

Dividends of smaller firms are more surprising and change more from year to year than larger firms. Maybe such

proposition occurs due to the absolute magnitude of the earnings and the retained earnings of the firms.
When abnormal earnings are held constant, there exists a relation between the firm size and trading volume around the earnings announcements. Firm size effect might occur for one of the reasons that a smaller firm's announcement tends to be more surprising than that of a larger firm. There is a size effect beyond the attributable to unexpected earnings if the earnings announcements provide a large share of the information about the firm and one might expect a larger volume reaction, as the information of such announcements has not been obtained from other sources. Nichols *et al.* (1979) shows that the magnitude of changes in earnings is associated with large changes in trading activity. The relative magnitude of the associated trading activity to the executive forecast is of interest and the relative change in the volume occurs at time t_o may be computed as follows:

$$\Delta v_i = (V_{io} - \bar{V}_i)/\bar{V}_i$$

where,
$\bar{V}_i$ = the average trading volume for company *i* for the periods surrounding period zero.
It may be theorized that executive forecasts predicting earnings very different from current investor expectations of earnings would be associated with greater trading activity than forecasts predicting earnings at a level nearer market expectations. A measure of investor expectations of earnings can test this possibility. Last year's earnings might be treated as base for investor expectations of earnings for the nest year.

Characteristics of Variables: This section is devoted to define the variables reflecting the volume and price movements of common stocks surrounding the dividend announcement date. The date of dividend announcement will be obtained from the closing price and volume quotation index of the exchange.

Trading Volume: Trading volume reflects the investors' activity by summing all market trades. Because of trading volume hypothesis, an expectation model is needed. In this regard, different approaches may be taken. Analyst may use the percentage of shares traded adjusted for the over all market level of trading as the expectation. Each firm' s median trading volume may also be used as its expectation over the period. The percentage of shares traded may be treated as the dependent variable. Beaver (1968) uses each firm' s percentage of shares traded on an index of market-wide trading defined as the percentage of shares traded on an exchange. Since the amount of trading depends on the number of shares outstanding, the trading volume measures are based on the percentage of shares traded. However, the adjustment for market-wide trading effect is:

$$V_{it} = a_i + b_i(V_{mt}) + \epsilon_{it}$$

where,
V_{it} = percentage of firm i's shares traded during period t,
V_{mt} = percentage of shares traded on exchange m firms during period t
a_i, b_i = regression constant and coefficient(specific to firm i) determined by simple linear regression of daily data and
ϵ_{it} = volume residual for firm i during period t
To attain distributional comparability across the firms, the residuals may be divided by their standard deviations to obtain standardized residuals, which would be computed for each sample firm for each day in the sample period as follows:

$$R_{it} = \frac{\epsilon_{it}}{\sigma(\epsilon_{it})}$$

Since there is no trading volume market model in practical usage, the unadjusted percentage of shares traded may be employed as an additional volume metric.
The parameters of the regression would be estimated to calculate expected trading volume I the absence of announcement and the parameter estimation period should not include those days immediately surrounding the dividend announcement date. Therefore, for each firm, regression parameters may be estimated over the study period except the days centered on the firm's dividend announcement dates. The measure of the unexpected trading volume is simply refers to the regression prediction error as:

$$UEV_{it} = Vit - (a_i + bi(V_{mt}))$$

Another measure of normal volume is the estimate of the median daily percentage of the firm's shares traded in the non-announcement period. Firm-specific abnormal trading (VF_{it}) volume may, therefore, be defined as the difference between the actual percentage of shares traded on the day t and the median non-announcement volume estimated as:

$$Vf_{it} = V_{it} - md(V_{it})$$

The statistical tests of the volume magnitude require the estimates of trading activity around the announcement dates. Patell and Wolfson (1982) find that the bulk of the trading reaction occurs between the day before and after the announcement date (-1 to +1 relative to the announcement dare).

Firm Size: Total assets and owners' equity of a firm carry an importance in measuring the firm's value. Market value of common shares outstanding measures the firm size. Book value of total assets and equities may produce a more stable measure of affirm size than its market value of common shares outstanding.

Abnormal Earnings: It refers to the difference between the expected earnings and the actual earnings. Measurement of the abnormal earnings may be the absolute value of the difference between the analysts' earnings forecast and the actual earnings per share before extraordinary items (henceforth EPSBEI), divided by EPSBEI.

Confounding Variables: Typically there are two types of firms based on the fiscal year-end month vix., 12/31 firms and non-12/31 firms. There may be systematic differences between the two. 12/31 firms usually become larger than non-12/31 firms. Foster (1981) finds that relevant intraindustry announcements will be available for 12/31 firms than for non-12/31 firms. In order to document any inference between them relevant study should include both 12/31 firms and non-12/31 firms. Fiscal year may also be divided into four quarters (four 13-week quarters) or the like so that the analysts may analyze each industry/firm once within the 13-week quarter with a view to drawing inference regarding the earnings forecast appear over varying 13-week intervals.

Research Methodology

Relationship between Price and Volume: Generally trading volume reflects a lack of consensus regarding the price. Such lack of consensus is induced by a new price information regarding the earnings report of a firm. If consensus were reached on the first transaction, there would be a price reaction but no volume reaction, assuming homogeneous risk preferences among investors. However, there should be a volume reaction even after the equilibrium price had been reached if risk preferences differ among the investors. Price reflects changes in the expectations of the market as a whole and the volume reflects changes in the expectations of individual investors. A piece of information may change the expectations of individuals rather than it changes the expectations of the market as a whole. Under this circumstance, there would be no price reaction but there would be shifts in portfolio positions reflected in the volume. Beaver (1968) argues that price reflects expectations of many investors. So, it may imply a very efficient forecast of earnings for several days prior to the announcement date. Efficiency, in this regard, is defined as the difference between the forecasted value of the reported earnings and the actual value. The closer the expectation is to zero, the more efficient the forecast is.

Measurement of Trading Volume: There is no theoretical basis for choosing a specific measure of trading volume. Different approaches of trading volume measures are involved. Whatever measure is most appropriate depends upon the objectives of the researchers. Beaver (1968), Nichols *et al.* (1979) adjusted the percentage of shares traded for the overall market level of trading to measure the trading volume. On the other hand, Based on a firm specific measure of normal volume, another measure is the percentage of shares traded minus the firm-specific median daily percentage of shares traded. This method of measuring trading volume makes no attempt to adjust for the effects of economy-factors on trading volume. Based on the research works of Bamber (1986); Ajinkya *et al.* (1991); Atiase and Bamber (1994) Lobo and Tung define a measure of trading volume as the percentage of a firm's outstanding shares traded on a given day, computed as:

$$V_{it} = \frac{ST_{it}}{SO_{it}} \times 100$$

where,

V_{it} = trading volume of firm *i* during period t,

ST_{it} = number of firm *i*'s shares traded during period t, and

SO_{it} = number of firm *i*'s shares outstanding during period t

This measure of trading volume ignores the level of trading in the overall market. Adjusting for differing levels of trading in the overall market, Atiase and Bamber (1994) employed another measure of trading volume as the difference between the percentage of outstanding shares traded on day *t* for a given firm and the percentage of outstanding shares traded in the overall market on that day which is given as follow:

$$MV_{it} = V_{it} - V_{mt}$$

where,

$$V_{mt} = \frac{St_{mt}}{So_{mt}}$$

where,

MV_{it} = Adjusted trading volume of firm *i* during period t,

V_{mt} = trading volume of overall market (on any exchange) during period t,

ST_{mt} = number of shares traded on any exchange on day t, and

SO_{it} = number of shares outstanding on any exchange on day t

Dividend announcement date may be termed as day 0. Around the announcement date, V_{it} and MV_{it} may be calculated over a certain day period. Daily mean values of these measures during this period, therefore, may be compared with their corresponding mean values in the nonannouncement period prior to the dividend announcement date. In addition, we may cumulate V_{it} and MV_{it} over multiple periods viz., two-day (-1, 0), three-day (-1, 0, +1), five-day (-1, 0, +3), seven-day (-1, 0, +5) and the like. However, it is essential to examine the relationship between these cumulative volume measures and predisclosure information asymmetry.

Measurement of Predisclosure Information Asymmetry: Investors gather information from different sources of which financial analysts are most reliable. To the extent the investors rely on financial analysts' forecast, the dispersion and range in analysts' earnings forecast will provide a measure of predisclosure information asymmetry. The dispersion and range in analysts' earnings forecasts will be measure, respectively, as follows:

$$DAF_{it} = \frac{SDAF_{it}}{Af_{it}},$$

$$RANGEit = \frac{\text{Highest forecast} - \text{Lowest forecast}}{AF_{it}}$$

where,

DAF_{it} = coefficient of variation of analysts' earnings forecasts,

$RANGE_{it}$ = difference between the most optimistic analysts' earnings forecasts and the most pessimistic analysts' earnings forecasts for each firm scaled by the absolute value of the mean analysts' forecast,

$SDAF_{it}$ = standard deviation of analysts' earnings forecasts for firm i made in the month preceding the earnings announcement month (period t) and

AF_{it} = mean analysts' earnings forecasts for firm *i* made in the month preceding the earnings announcement month (period t).

DAF_{it} may also be defined as the measure of predisclosure information asymmetry and therefore, may be used as an independent variable to test the relationship between trading volume and predisclosure information asymmetry. $RANGE_{it,}$ on the other hand, may be used as a proxy for predisclosure information asymmetry. Usage of $RANGE_{it,}$ as a proxy for predisclosure information asymmetry also does not change the basic results.

Measurement of Unexpected Returns: Unexpected earnings may be defined as the absolute value of the difference between actual earnings per share and the earnings forecast over the forecasted earnings per share. Unexpected returns may also be measured by using the mean adjusted returns assuming that the ex ante expected return for a given security i equals a constant K_i as follow:

$$\epsilon_{it} = R_{it} - K_i$$

where,
ϵ_{it} = unexpected return on firm i's stock on day t,
R_{it} = return on firm i's stock on day t and
K_i = mean returns on firm i's stock during the nonannouncement period.

Unexpected daily returns are cumulated over the periods corresponding to the cumulation periods for trading volume. The absolute values of these cumulated returns may be used as measures of the price reaction to the earnings announcement, which may be one of the independent variables in regression analyses.

Association between Trading Volume and Earnings Announcements: To show the relationship between trading volume and the level of information asymmetry, we may develop the following model:

$$V_{it} = \beta_0 + \beta_1 D_{it} + \beta_2 AV_{it} + \beta_3 Z_{it} + e_{it}$$

where,
V_{it} = trading volume at the time of dividend announcement
D_{it} = dispersion in analysts' earnings forecasts,
Av_{it} = absolute value of unexpected returns,
Z_{it} = market value of the firm's common stock at the beginning of the period,
e_{it} = volume of residual error term for announcing firm i on day t,
β_0, β_1, β_2, and β_3 are coefficients estimated using ordinary least squares regression analysis.

Different trading volume measures (V (MV)) and unexpected returns (AV) will be cumulated over the respective periods. However, analysts' forecast dispersion as a measure of predisclosure information asymmetry may reflect differences in average precision of investors' private predisclosure information in addition to differential precision of predisclosure information. So, analysts should include the magnitude of the price reaction to the dividend announcement and firm size as independent variables in the regression analysis to control the effect of differences in average precision of investors' private predisclosure information. Atiase (1985) finds average precision of investors' private predisclosure information is positively related to the firm size whereas, Kim and Verrecchia (1991) shows that the magnitude of the price reaction reflects the average precision of investors' private predisclosure information.

Statistical Tests: Lakonishok and Vermaelen (1986) draw their statistical inference regarding abnormal trading activity on standardized abnormal volume. The normal trading period would be defined as the period excluding the trading days both before and after the event date. We may estimate the mean and standard deviation of normal trading volume for each stock (i = 1 to n). For each day within the study period, we may compute abnormal volume for each stock as:

$$AV_{it} = V_{it} - \bar{V}_i$$

Since the interpretation of abnormal volume is difficult and confusing, we would compute percentage abnormal volume and standardized abnormal volume as:

$$\%AV_{it} = \frac{Av_{it}}{\bar{V}_i} \quad \text{and}$$

$$SAV_{it} = \frac{Av_{it}}{\sigma(\bar{V}_i)}$$

In order to determine the significance of abnormal trading around the dividend announcement date, we would compute mean percentage abnormal volumes and mean standardized abnormal volumes across the stocks for each day of the study period as follows:

$$\bar{\%}AV_{it} = \frac{1}{N} \sum_{i=1}^{N} \%AV_{it}$$

$$\bar{SAV}_{it} = \frac{1}{N}\sum_{i=1}^{N} SAV_{it}$$

We, therefore, may determine the statistical significance of abnormal trading by computing a t statistic derived from mean SAV as follows:

$$t = \frac{\bar{SAV}_{it}}{\sigma(\bar{SAV}_{it})/\sqrt{N}}$$

We may use the sample distribution of SAV_{it} from the normal period to compute the t-statistic under the assumption of null hypothesis that trading activity in the selected period is no different from normal trading activity. By construction, the sample mean and standard deviation of SAVit are zero and one respectively for each type trade during the normal trading period. If SAVit is normally distributed, the t-statistic may, therefore, be written as:

$$t_{it} = \sqrt{N}\bar{SAV}_{it}$$

The modified t- statistic is an adjustment to the conventional t-statistic as:

$$\square t = t + \left(\frac{s}{\sigma\sqrt{N}}\right)(t + 2t^2)$$

When s being the skewness is being the positive, the conventional t-statistic is biased downward. If we were interested to test the hypothesis that abnormal trading volume around dividend announcement date is positively related to dividend yield and negatively related to round-trip transaction costs (bid-ask spread), using a bid-ask spread as a proxy, we may use ordinary least squares method as:

$$SAV_{it} = b_0 + b_1 Y_{it} + b_2 S_{it}$$

According to tax-clientele hypothesis, the values of the coefficients b_1 and b_2 should be:

$$b_1 = 0,\ b_2 = 0$$

When we estimate this regression by using data from short-term trading by security dealers implies the following notion:

$$b_1 > 0,\ b_2 < 0$$

In case of the estimation of the regression by using data from individuals and/or taxable corporations, corporate dividend capture trading implies similar coefficients where we compute dividend yield as:

$$Y_i = \frac{D_i}{P_i}$$

where Di refers to the cash dividend for stock i and Pi is the mean closing stock price for stock i over days before dividend announcement date. For each stock in the sample, we extract every quote from the announcement date and for each quote, we may estimate percentage spread as:

$$\frac{2(A - B)}{A + B}$$

where A and B are ask and bid quote respectively and $Spread_{it}$ is the average percentage spread quoted for stock I on announcement day.

Development of Trading Volume Hypotheses: Trading volume is the sum of all individual investors' trades whereas price volatility reflects changes in the aggregate beliefs of the investors. Price changes and trading volume capture fundamentally different aspects of market' s assimilation of information and earnings announcements. Investors' trade size is obviously correlated with the investors' wealth. On the other hand, informed traders usually make large volume of trade due to the price sensitive information. It implies that information about the corporate earnings matters on the investment attitudes and behaviors of the investors. So, its an idea about the securities markets that well-informed investors are usually habituated to make larger trades than less-informed investors. Trading volume may be relatively more sensitive to individual differences in interpreting earnings information. In a study Fried and Givoly (1982) have documented the differences between price and trading volume reactions to earnings announcements. In contrast to their results, Bamber (1986) finds that trading volume is much more closely relate with corporate earnings announcements. In this connection, Morse (1981) documents that the trading volume reaction to earnings announcements persists longer than price reaction. Bamber (1987) hypothesizes that regardless of the firm size, more surprising announcements generates more trading volume reaction than lower earnings surprises. Investors in the securities market are interested to see the announcement effects on both price and volume of trading. Based on the theories and evidences regarding belief dispersion, there is a conceptual link between the magnitude of corporate earnings and trading volume of securities of the same. An informative announcement makes the investors more optimistic rather than a non-announcement period generating increased trading volume. So, it may be hypothesized that there is a positive association between corporate earnings (i.e., dividends) announcements and the trading volume i.e., the larger the absolute value of the earnings, the higher the trading volume around the earnings announcements.

Hypo-1: Trading volume increases during dividend announcements.
Any information relating to the dividend announcement increases the volume of trading in the securities market. This hypothesis asserts that trading volume around the dividend announcements is very much related to the level of predisclosure information. Trading volume is lower to the announcements, higher at the time of the announcements. It essential to investigate whether trading volume and the firm' earnings are related in a continuous manner. So, the second hypothesis is:

Hypo-2: When dividends are announced, unexpected trading volume is positively correlated with the absolute value of the magnitude of such dividends.
This hypothesis implies that the absolute value of the dividend declared changes the volume of trading around dividend announcements positing that the greater the magnitude of unexpected dividends, the greater the volume of trading around the announcement dates.
It is, therefore, necessary to identify a relation between the market reaction and variable(s) whose value is known prior to the announcement. Firm size, in this regard, is one such variable. Atiase (1985) argues that investors have lesser incentives to collect predisclosure information about smaller firms. Furthermore, publicly available information is more concerned for larger firms than the smaller firms. A relatively little information regarding small firms is lick out prior to the earnings announcements. Small firms' earnings announcements are especially informative. More informative announcements may lead to greater belief dispersion generating abnormally high trading. So, it may also be hypothesized that firm size is inversely associated with the magnitude of the volume of trading. Hypothesis regarding the firm size are invented below:

Hypo-3: When dividends are announced, unexpected trading volume is negatively correlated with firm size.
This hypothesis, therefore, implies that the volume of trading around the dividend announcements depend on the firm size. The smaller the firm, the higher the unexpected trading volume around dividend announcements and vice versa. Dividend announcements of smaller firms may become more difficult to predict.

Hypo-4: Firm size is negatively correlated with the absolute value of unexpected dividends.
It is necessary to explain here that the dividend announcements by smaller firms constitute a larger proportion of the total information available about those firms. Their announcements may be linked with a relatively large volume of trading. Hence, our testable hypothesis is the below.

Hypo-5: When unexpected dividends are held constant, the firm size is also negatively correlated with the volume of abnormal trading around dividend announcements.
In addition to the magnitude of the dividend announcements' market effects, the duration of these effects should be examined. Morse (1981) argues that high trading volume persists for a longer time than do price movements around the earnings announcements. Collection of more information need more time to respond and their response times are more flexible than the response times of those receiving less information. So, our testable hypothesis

implies:

Hypo-6: The duration of the high trading around the dividend announcements is associated with the magnitude of dividends.
The larger the absolute value of the dividend earnings, the longer the period of abnormally high trading associated with dividend announcements. Relatively small firms usually provide little predisclosure information. So, hypothesis may, therefore, be extended to firm size:

Hypo-7: The duration of the high trading around the dividend announcements is associated with the firm size.
The smaller the firm, the longer the period of abnormally high trading associated with dividend announcements. To test and investigate additional issues the paper needs to propose the following null hypothesis:

Hypo-8: There is no significant difference between the trading activity during the announcement period and the trading activity during the periods surrounding the announcement period.
The null hypothesis should be rejected when the announcement of earnings forecasts have informational significance to the investors causing increases in trading activity. To investigate whether the information content of longer term forecast and shorter term forecast remains the same, so the null hypothesis implies:

Hypo-9: There is no significant difference between the magnitude of the changes in volume associated with a longer term forecast and a shorter term forecast.
It is also necessary to investigate the association between the magnitude of the forecasted earnings change and the investor reaction. However, the following null hypothesis investigates whether forecasts predicting larger changes in earnings are associated with greater trading activity than forecasts predicting smaller changes:

Hypo-10: There is no significant difference in the trading activity associated with forecasts of larger expected changes in earnings and forecasts of smaller expected changes in earnings.

Suggestions for Further Research: This paper raises the questions for further researches regarding trading volume reaction centered to the dividend announcement. Because of the positive aspects of dividends, the market usually receives the dividend declaration positively. If the securities market is efficient in the semi-strong sense, then a firm's security price at any point in time reflects all publicly available information about the firm at that point in time. The primary variable, V_{it} as described by Beaver (1968) is the percentage of outstanding shares traded during a particular week adjusted by the number of trading days during the week. This is done to adjust the fact that not all the weeks have the same number of trading days. It is possible that the overall volume of securities traded on that day may influence the volume of trading in specific firm's security. In order to factor out any effects of changes in the level of trading in the market, adjustment of V_{it} should be made, assuming a proportional influence on a security' s trading volume from overall market volume. This adjustment will not carry any practical difference on the results obtained from the analysis of the unadjusted volume data.
The hypothetical approaches of this paper should be largely consistent with empirical researches. Moreover, substantial empirical analyses should be undertaken to test the hypotheses. The hypothetical evidences reported in this paper, shall undoubtedly, be base on and highlight the potential empirical trading volume researches regarding the effects of dividend announcement on the activity of the stock market participants. From the underlying perspective, this paper suggests that it would be prudent for further researches to examine both price and volume reactions. Finally, such theoretical evidences on factors with differential price-volume reactions may potentially help researchers develop empirical studies on trading volume.

Conclusion

The primary objective of this paper is to provide hypothetical evidences on the extent to which dividends announcements generate large trading surrounding such announcements. The major contribution of this paper has been devoted to develop hypotheses regarding trading behavior around the dividends announcements and the predisclosure information asymmetry on that behavior. We hypothesize that the intelligent investors with prior information about dividend will increase their trading activity before the dividends announcements, but there may be other important factors determining the trading behavior not considered in this paper. Nevertheless, we believe our hypotheses shall, no doubt, provide important insights in analyzing the trading activity surrounding the dividends announcements. To facilitate prediction of which particular firms' announcements are likely to generate an extensive or sustained market reaction, however, it may also be useful to identify a relation between market reaction and a variable whose value is known prior to the announcement. Firm size is one such variable whose value is known before the dividends are announced. Based on the theories and evidences discussed that investors'

incentives to collect predisclosure information increase with the firm size. Dividend information effects should be most visible at initiation since these events are more likely to be unexpected than subsequent regular dividend announcements which are preceded by the firm's past dividend history. Trading volume increases, primarily, in the response to the signal about future earnings contained in the initial dividend.

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