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**MARKET REACTION TO ANNOUNCEMENTS OF RIGHTS OFFERINGS  
USING DAILY AND INTRADAY DATA**

**Nourhen Kdaiem**

**A Thesis  
In  
The Faculty  
of  
Commerce and Administration**

**Presented in Partial Fulfilment of the Requirements  
for the Degree of Master of Science in Administration at  
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## **ABSTRACT**

### **MARKET REACTION TO ANNOUNCEMENTS OF RIGHTS OFFERINGS USING DAILY AND INTRADAY DATA**

Nourhen Kdaiem

This study uses daily prices and intraday trade and quote data to examine the market reaction to announcements of 95 rights offerings of Canadian firms listed on the TSE over the period 1987-1994. In a rights offering, existing shareholders are offered rights entitling them to buy new shares usually at a discount from the current market price. Consistent with previous research, we identify significant mean abnormal returns during the two-day event period  $[0, +1]$ . Cross-sectional regression results support the information release, and possibly the price pressure hypotheses. Trading frequency, volume, value and conditional variance decrease significantly on the event day relative to the pre-event period and return to normal levels during the post-event period. The relative bid/ask spread decreases on the event day relative to the pre-event period. No significant permanent changes occur in all trade indicators from the pre- to post-event periods. Trade direction for the stocks does not change significantly between any two periods. Trades for the rights issued by the sample firms are more seller-initiated during their 21-day trade period.

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# **MARKET REACTION TO ANNOUNCEMENTS OF RIGHTS OFFERINGS USING DAILY AND INTRADAY DATA**

## **1. INTRODUCTION**

Firms can raise new equity in several ways. In a best efforts equity issue, an investment dealer contracts to make its best effort to sell the stock of the firm but does not guarantee that all of the issue will be sold. In a firm-commitment issue or bought deal, the investment dealer guarantees the sale of all the shares to be issued and so bears the risk of loss. In a rights offering, existing shareholders are offered rights entitling them to buy new shares, usually at a lower price than the current market price (i.e. the subscription price). Rights issues can be either standby or uninsured. In a standby rights issue, an underwriter, which can be an investment dealer or a shareholder, commits to purchase all unsubscribed shares for a fee which depends on the risk of failure of the offering. An uninsured rights issue is not underwritten so the firm faces the risk of non subscription and thus the failure of the offering. However, it saves the costs of underwriting. Sometimes the firm uses oversubscription in order to reduce the costs of failure, where each shareholder who subscribes for his/her rights is offered the right to subscribe on a pro rata basis for unsold shares.

Eckbo and Masulis (1992) report that from 1963 to 1981, less than 5% of all seasoned stock offerings by NYSE and AMEX listed industrial companies used rights, and rights

offers were rarely used after 1981. This contrasts with the situation in Europe where rights issues are widely used. Marsh (1979) states that new equity capital in Europe is raised almost exclusively through rights issues in 1975. For example, 99% of equity issues in the UK are rights offerings. In Canada, rights offerings are used more than in the U.S., but their use has been fluctuating over time and for the last years it has decreased. For TSE-listed firms, the use of rights offers decreased from \$2,511,317,000 (21.91% of total new equity financing) in 1992 to \$231,918,000 (2.35%) in 1994 (TSE Review, December 1994).

While most of the published studies on equity issues focus on new seasoned issues, a number of studies focus on rights offerings. They document that firms experience, on average, negative stock price reactions surrounding the announcements of rights offerings (Nelson, 1965; Scholes, 1972; White and Lusztig, 1980; Hansen, 1988; Eckbo and Masulis, 1992).

The purpose of this study is to examine the behaviour of stock prices and trade activity surrounding the announcements of rights offerings for a sample of Canadian firms over the period 1987 to 1994 using an event study methodology. Cross-sectional regressions are used to determine the factors that influence the size of the abnormal returns around such events. Using 30-minute interval data for 21 days centered on the event day, returns, conditional variances, frequencies of trades, trading volumes, trading values, relative bid/ask spreads, relative liquidity premiums, trade depths and trade directions are examined.

The remainder of this thesis is organized as follows. In the next section, the literature is reviewed. In section three, the sample and description of the data are discussed. In section four, the methodology is described. Section five presents and analyses the empirical results. In section six, concluding remarks and implications are given.

## **2. LITERATURE REVIEW**

A significant negative stock price reaction is identified around the announcement of new equity issues. On average, stock prices of industrial firms drop by approximately 3%, whereas stock prices of utility firms decrease by only 1% (Hess and Bhagat, 1985; Pettway and Radcliffe, 1985; Asquith and Mullins, 1986; Masulis and Korwar, 1986; Mikkelson and Partch, 1988; Schipper and Smith, 1986). According to Mikkelson and Partch (1988), a significant positive price reaction is associated with announcements of the withdrawal of an offering or an issuance. The largest abnormal return occurs in the three days centered on the announcement, and depends on the time during which the announcement was released. Table 1 summarizes the findings of the previous studies.

Studies on rights issues find that stock prices react negatively to announcements of rights offerings. Eckbo and Masulis (1992) reject the hypothesis that the average market reaction to firm commitments and rights offerings is the same for a sample of 135 standby and 57 uninsured rights issues. Their results show that the two-day  $[-1, 0]$  abnormal return is  $-1.03\%$  ( $z = -2.04$ ) for standbys and  $-1.39\%$  ( $z = -1.56$ ) for uninsured for industrial

companies and is  $-0.53\%$  ( $z=-2.28$ ) and  $0.23$  ( $z=1.0$ ), respectively, for utilities. This confirms the findings of earlier studies (e.g. Nelson, 1965; White and Lusztig, 1980; Hansen, 1988). It is difficult to compare the results of these studies because some use the issue date rather than the announcement day as the event date, others do not differentiate between standby and uninsured rights offers, and still others use different methodologies to measure abnormal returns.

Scholes (1972) examines 696 rights issues on the NYSE between 1926 and 1966 using the market model. Based on monthly data, he finds that the average prediction errors are positive prior to the dates of issue and drop by  $0.3\%$  during the months of issue.

Smith (1977) uses monthly data for 853 rights offerings from the CRSP file between 1926 and 1975 and daily returns for a sample of 52 rights offerings from 1971 to 1975. He finds no abnormal returns on the month of issue. However, his study does not distinguish between standby and uninsured rights issues and between the rights issues of industrial and utility companies.

White and Lusztig (1980) study a sample of 90 rights issues between 21 July 1962 and December 1972. Using a pooled cross-section time-series model to measure the effect of announcements of rights issues on the stock price of the firm, they find a significant negative reaction. However, they do not distinguish between the two types of rights issues.



Bhagat (1986) examines a sample of 303 pre-emptive rights amendment proposals over the period 1962 to 1981. Around the proxy mailing date, he finds that, on average, announcements of pre-emptive rights amendments decrease shareholders' wealth, while announcements that the amendments will not pass increase shareholders' wealth.

Previous studies report large positive abnormal returns in the year prior to the announcement of an equity issue ( Scholes, 1972; Smith 1977; Marsh, 1979; Masulis and Korwar, 1986; Eckbo and Masulis, 1992). Smith (1977) reports abnormal returns of 8 to 9% in the year prior to the rights issue. He attributes this to a selection bias since firms that raise capital are usually those with good performance. Eckbo and Masulis (1992) show that these price run-ups are smaller for rights issues than for firm commitment issues. Firm commitment offers for industrial firms follow price run-ups of 12.05% ( $z=11.89$ ), standby offers have price run-ups of 4.74% ( $z=1.97$ ), and uninsured offers have no price run-ups.

The pre-announcement abnormal returns for utilities are smaller in absolute value than for industrials. The difference is attributed to the higher frequency of using external capital markets by utilities, which makes their equity issues highly predictable. It also is attributed to the disclosure required by regulated firms, which makes their equity issues less unexpected and reduces the impact of information leakage ( Smith, 1977; Asquith and Mullins, 1986; Masulis and Korwar, 1986).

## 2.1 Possible Explanations and Their Support

Although three main explanations are advanced in the literature for the significant negative abnormal returns surrounding an equity issue, the empirical evidence is inconclusive as to which hypothesis is supported. This is due to the correlations between the variables used to measure each effect, and because the hypotheses are not mutually exclusive.

The price pressure hypothesis argues that the demand curve for shares is downward sloping which implies that an increase in the supply of shares causes a drop in the firm's stock price (Scholes, 1972). This contradicts the theory of finance which states that prices of securities are determined only by risk and expected return (i.e. the demand curve for the firm's securities, with similar risk and expected return, is horizontal).

The wealth redistribution hypothesis states that when a company issues new equity, its leverage ratio is reduced and its debt becomes less risky. This reduces the market value of the outstanding equity, and increases the market value of the outstanding debt. Therefore, a transfer of wealth occurs from stockholders to bondholders (Galai and Masulis, 1976).

The information release hypothesis contends that new equity issues convey negative information to the market about the market value of the firm. In a world of informational asymmetry, equity issues signal the superior information held by insiders about the firm's true value to the market. Scholes (1972) states that the downward price adjustment in the

stock's price is the expected value of the information contained in the new equity issue. Heinkel and Schwartz (1986) show that since the method of financing used by the firm disseminates information about the quality of the firm, the stock price reacts to this information. Ross (1977) suggests that the choice of capital structure of the firm discloses information about the future prospects of the firm. Since new equity issues decrease the debt ratio and the tax advantages of using debt, this conveys negative information about the value of the firm. However, a higher debt ratio may be interpreted as the firm having the higher future cash flows needed to pay the debt. This is consistent with other studies on the capital structure of the firm ( Modigliani and Miller, 1963; DeAngelo and Masulis, 1980; Masulis, 1983; Myers and Majluf, 1984).

Asquith and Mullins (1986) find support for the price pressure hypothesis. They find that larger issues for industrial firms have greater negative abnormal returns on the announcement day. They use the planned proceeds of the offering divided by the pre-announcement value of the firm's equity as a proxy for the relative size of the issue. Kalay and Shirmat (1987) argue that this finding is also consistent with the two other hypotheses because issue size can also be interpreted as a proxy for the amount of unfavourable information or for the change in leverage. Thus, a larger issue size may lead to a higher reduction in the market value of equity and a higher increase in the market value of the debt and therefore more wealth transfer from shareholders to bondholders. Also, a larger issue can reveal more information at the announcement. Several studies find results different from Asquith and Mullins (1986) (e.g. Hess and Bhagat, 1985; Masulis and Korwar, 1986;

Mikkelson and Partch, 1986; Sant and Ferris, 1994). Hess and Bhagat (1985) find that relative issue size accounts for about 3% of the cross-sectional variation in the announcement day abnormal returns for a sample of utility (and not industrial) issues. Masulis and Korwar (1986) find that a larger issue size is associated with larger and smaller announcement returns for industrial and utility firms, respectively. Both Hess and Bhagat (1985) and Masulis and Korwar (1986) measure relative issue size by the announced number of shares to be issued divided by the number of shares outstanding prior to the announcement.

Scholes (1972) rejects the price pressure hypothesis since he finds that the empirical evidence shows that the price reduction is permanent. However, other studies find that the price drop is temporary. For example, Smith (1977) shows that stock prices recovered over the two months after the issue what they lost in the two months prior to issue. Hansen (1989) concludes that the price decline is temporary for a sample of standby rights offerings. He finds a significant correlation between the abnormal returns over the 20 trading days preceding the offer period and the 20 days following offer expiration.

Sant and Ferris (1994) test the price pressure hypothesis using the value of new equity issues standardized by the volume of outstanding equity as a proxy for the relative issue size. They find that this hypothesis is not supported by the negative abnormal returns during the announcement period, which exist even after controlling for the purpose of the issue.

Asquith and Mullins (1986) and Masulis and Korwar (1986) find a negative relationship between the announcement day abnormal return and the leverage change.<sup>1</sup> However, when relative issue size is added to the cross-sectional regression, they find that the relationship becomes statistically insignificant. They argue that since issue size and leverage change are correlated, it is difficult to separate the effect of each variable. Since a firm is expected to have an optimal debt ratio, a deviation from the target ratio should predict a change in the stock price. However, Masulis and Korwar (1986) find no significant effect of deviations from the target leverage ratios calculated as the average book values over the returns for the two previous years.

Sant and Ferris (1994) examine a sample of all equity (zero debt) and extremely low debt (near zero debt) firms. They find a significant negative mean abnormal return of -1.44% over the window [-1, 0]. Since the sample has little leverage, they conclude that the reduction in stock prices is due to factors other than the change in leverage.

It is difficult to test the information release hypothesis because it depends on what information is conveyed by the announcement of an equity issue, and whether any revealed information is correlated with any other effect, such as issue size or change in capital structure. Miller and Rock (1985) argue that new equity issues communicate information

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<sup>1</sup> Asquith and Mullins (1986) measure leverage change as the difference between the net debt ratio after the equity issue and the average net debt ratio for the 5 years preceding the announcement of the offering. Net debt is calculated as total debt minus cash and cash equivalents, and the net debt ratio is calculated as net debt divided by the sum of net debt and net worth.

about lower future cash flows given a fixed investment policy. Sant and Ferris (1994) regress the cumulative abnormal return over the window  $[-1, 0]$  on the change in growth rate over the year immediately surrounding the announcement of equity issue.<sup>2</sup> They find a positive and significant relationship between change in growth rate and the two-day announcement abnormal return even after controlling for the purpose of the issue. They conclude that new equity issues signal expectations about future cash flows.

Korwar (1983) finds that firms which issue equity have lower earnings per share during the issuing and following year than control stocks. Kalay and Shirmat (1987) argue that the decline in earnings per share resulting from equity issue should be distinguished from that resulting from the reduction in the leverage ratio due to the equity issue. The authors find evidence that bond prices react negatively to announcements of new equity issues. This evidence is consistent with the information release hypothesis but does not rule out the other hypotheses.

Asquith and Mullins (1986) show that the announcement day reduction is negatively related to stock returns in the year prior to the announcement for industrial firms but not for utilities. The authors attribute this to the larger information content revealed by announcements of industrial offerings. Masulis and Korwar (1986) find that the higher the

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<sup>2</sup>The change in growth rate is measured by the arithmetic growth rate in cash flow from the announcement year to the following year divided by the arithmetic growth rate in cash flows from the previous year to the announcement year.

stock's variance of return, the larger the drop in the stock's price at announcement. They conclude that the higher the uncertainty about the future value of the firm, the higher the risk and so the larger the information content of the announcement.

## 2.2 The Purpose of Issue Effect

Evidence exists that the purpose of an equity issue can predict the size of the stock price reaction following the announcement. Masulis and Korwar (1986) report that issues whose purpose is to use the proceeds to increase capital expenditures have smaller abnormal returns. This implies that the negative abnormal returns following an announcement of an equity issue are offset by the positive abnormal returns associated with the contemporaneous announcement of capital expenditures. This is consistent with McConnell and Muscarella (1985) who find that stock prices increase (decrease), on average, by approximately 1% on the announcement of increased (decreased) capital expenditures. In addition, Trueman (1986) predicts that an increase in capital expenditures should be followed by positive stock price reactions. This also is consistent with the information release hypothesis. When the firm announces that it will use the proceeds for an investment, the market interprets the announcement as good news for the future value of the firm.

Sant and Ferris (1994) report that the announcement period mean abnormal returns vary according to the purposes of the equity issues. Over the window  $[-1, 0]$ , issues whose purpose is repayment of short-term debt have a significant average abnormal return of

-4.37%, whereas those for investment (i.e. working capital or capital expansion needs) have a significant average abnormal return of -2.14%.

### 2.3 The Low Subscription Price Effect

Higher discounts for rights offerings are associated with lower subscription prices. As a result, the more valuable the right is, and the higher is the probability that the issue will be fully subscribed. Heinkel and Schwartz (1986) suggest that a high discount conveys negative information to the market about the true value of the firm. An issuer who is not sure of the success of the offering and does not want to incur failure costs offers a low subscription price to insure the success of the offering. Therefore, the market adjusts the stock price downward in the case of a large discount. Eckbo and Masulis (1992) do not find support for this hypothesis. They regress the abnormal stock return on the offer day against the offer price discount and find that it has an insignificant coefficient, even after controlling for the type of the rights issue.<sup>3</sup> Keane (1972) argues that even if we accept the possibility that the subscription price conveys negative information about the manager's valuation of the share, this interpretation should not persist if the low subscription price becomes a general practice for firms, and if managers disclose the significance of the issue price to the market.

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<sup>3</sup> The discount is measured as  $(p - p_{-1})/p_{-1}$ , where  $p$  = offer price and  $p_{-1}$  = closing price of the stock on the trading day before the offer day.



Managers appear to be concerned about the effect of low subscription prices on shareholders' wealth. According to Brealey and Myers (1984): "They [managers] believe that the cost of an issue is inversely proportional to the issue price. One reason managers are reluctant to sell shares at low prices is that they are worried about earnings' dilution." (p. 312)

Patterson and Ursel (1993) argue: "It is easily demonstrated that, in the absence of differential taxes or transaction costs, the post-issue wealth of investors is theoretically independent of the subscription price discount as long as the ratio of new to old shares is adjusted to maintain the amount of capital issued constant, and all rights are exercised." (p.115)

Patterson and Ursel (1993) state that in theory the effect of a rights issue should be viewed as a quasi split, that is, like a stock split or a stock dividend which allegedly does not affect shareholders' wealth.<sup>4</sup> Since the empirical evidence is not consistent with this expectation, they attribute this to the fact that the quasi-split effect of a rights issue is rarely adjusted for in annual reports and market analyses. This differs from the treatment of stock splits or stock dividends.

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<sup>4</sup> Even though stock split and stock dividend announcements are considered cosmetic accounting changes because they do not affect directly the future cash flow of the firm, empirical evidence shows that stock prices react positively to these announcements. Grinblatt, Masulis and Titman (1984) find that the mean two-day AR around the announcement date is 5.87% for a sample of 84 stock dividends and 3.29% for a sample of 244 stock splits of firms listed on the NYSE. Kryzanowski and Zhang (1993) find that for 197 Canadian stock splits listed on the TSE, the mean AR on the ex-date is 0.78%, which is significant at the 5% level.

### **3. SAMPLE AND DESCRIPTION OF DATA**

A list of 224 rights offerings with issue and expiry dates was compiled from the section "Supplementary Listings" in the Toronto Stock Exchange Monthly Review for the period of 1985-1994. The Lexis Nexis database is used to identify the exact announcement date of 110 offerings. Daily common stock returns for 190 days before and after the announcement, issue and expiry dates are retrieved from the TSE/Western Data Base. After deleting the companies with missing returns during the event window, the final sample consists of 95 rights offerings for the period 1987-1994. Table 2 gives the distribution of the offerings by year.

For each announcement, data is collected on the characteristics of the offering and the issuing company. The information is collected using several sources: Cancorp database, Lexis Nexis database, Canadian newspapers (Globe and Mail, Financial Post) and the Financial Post Survey of Industrials. It was not possible to classify the sample by type of offering (standby and uninsured) due to lack of information, or by type of sector because there was not enough utilities. Offerings announcements that accompany other announcements are not discussed separately because the total sample and the clean sample (those without confounding events) yield similar empirical results.

The exact within-day timing of the announcements are obtained from Canada News Wire database, and Reuters Financial Report for only 64 offerings. Trade and Quote data

are extracted from the TSE Equity History File for the 21 days centered on the announcement day for the common stocks and for 21 days of trade for the rights. The data are summarized into 13 half-hour intervals for each trading day. The information available consists of the transaction price, the bid/ask price, the number of shares traded, the number of trades and the bid/ask size. If the company does not trade in a 30-minute interval, the last mid-spread is used as the price. Missing bid/ask prices and bid /ask sizes are replaced with previous ones.

#### 4. METHODOLOGY

The stock market reaction to announcements of rights offerings is measured using a dummy variable approach. According to Karafiath (1988), this approach is equivalent and more convenient to use than the traditional two-step approach. The following two-beta market model is estimated:

$$R_{it} = \alpha_i + \beta_{i1} R_{mx} D_1 + \beta_{i2} R_{mx} D_2 + \sum_{j=m}^n \tau_{ij} D_{3j} + \epsilon_{it} \quad (1)$$

where  $R_{it}$  = return on stock i on day t

$R_{mx}$  = return on value-weighted market index (proxied by all the firms listed on the TSE ) on day t

$\alpha_i$  = intercept for stock i

$\beta_{i1}$  = estimated beta for stock i prior to the rights offering

$\beta_{i2}$  = estimated beta for firm i on and subsequent to the rights offering

$D_1$  ( $D_2$ ) = dummy variable with ones (zeros) before the event date and zeros

(ones) on and after the event date

$D_{jt}$  = event dummy which equals one for day  $j$  in the event window and zeros otherwise, where  $m$ =starting day/period and  $n$ =ending day/period

$\tau_{ij}$  = the measure of abnormal returns for day  $j$  in the event window for stock  $i$

$\epsilon_{it}$  = estimated error term for stock  $i$  on day  $t$ , which is assumed to be normally distributed with mean zero and constant variance

Both parametric t-test and nonparametric sign and Wilcoxon signed rank tests are used to test the significance of the abnormal returns.

Cross-sectional regressions are conducted to determine the factors that affect the size of the abnormal returns following the announcements of the rights offerings. The estimated cumulative returns over the announcement period  $[0, +1]$  are used as the dependent variable.<sup>5</sup> Independent variables are:

- The log of total assets (LNA) as a proxy for the size of the firm.
- The offering size (SIZE) measured by the planned number of shares issued standardized by the total number of shares outstanding before the announcement to test the price pressure hypothesis.

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<sup>5</sup> The two-day abnormal return  $[0, +1]$  is needed to capture the effect of the announcement because the reaction of the market depends on the time at which the announcement is made. If the rights offering is announced before the closing of the market, the stock price will react on the same day. If the offering is announced after the closing of the market, the stock price will react on the next day.

- The change in financial leverage (LEV), measured by the difference between the net debt ratio after the offering and the average net debt ratio for the five years before the announcement of the offering. The net debt ratio is calculated as net debt divided by the sum of net debt and net worth, where net debt is total debt minus cash and cash equivalents. This is the same measure used by Asquith and Mullins (1986) to test the wealth redistribution hypothesis.

- The change in the cash flow growth rate (CASHFLOW) calculated as the arithmetic growth in cash flow from the announcement year to the following year divided by the arithmetic growth rate in cash flows from the preceding year to the announcement year. Cash flow is calculated as income before extraordinary items plus discontinued operations plus depreciation and amortization. This the same measure used by Sant and Ferris (1994) to test the information release hypothesis.

-The average cumulative stock abnormal return over the three month period before the announcement (RUNUP) (i.e. starting -60 days through day -2 relative to the event day).

- The price discount (ANNDIS), calculated as  $(p - p_{-1}) / p_{-1}$ , where  $p$  is the offer price and  $p_{-1}$  is the closing price of the stock on the trading day before the announcement day.

- Dummy variables to capture the purpose of the offering:

D1=1 if the purpose of the offering is capital investment and zero otherwise.

D2=1 for debt reduction purposes and zero otherwise.

D3=1 if more than one purpose is stated for the offering, and zero otherwise.

D4=1 if no purpose is stated for the offering, and zero otherwise.

The half-hour returns based on the change in the mid-spread between successive intervals are used to measure the intraday market reaction to announcements of rights offerings. The abnormal returns for the 30-minute interval periods window [-19, +19] or day period [-1, +1] are estimated using the following mean-adjusted model:

$$R_{it} = \alpha_i + \sum_{j=m}^n \tau_{jt} D_{jt} + \epsilon_{it} \quad (2)$$

where  $D_{jt}$  = dummy variable that is equal to one at time  $t$  in the event window and equal to zero otherwise, where  $m$ =starting period and  $n$ =ending period

To examine the changes in intraday market activity, the following indicators are used: Relative bid-ask spread is calculated as  $(\text{ask price} - \text{bid price}) / [(\text{ask price} + \text{bid price}) / 2]$ . Trading volume is measured by the number of shares traded during each 30-minute interval. Trading value is the total dollar value of shares traded during each 30-minute interval (i.e. the sum of the product of the number of shares traded for each transaction and the transacted per share price). Trading frequency is the number of transactions completed every half hour. The conditional variance is calculated as the square of the 30-minute return. Relative liquidity premium is equal to the absolute value of the difference between the trade price and mid-spread divided by the mid-spread. Trade depth is measured by:  $(\text{bid size} - \text{ask size})$ , where the bid and ask size are the number of sell and buy orders for each half hour interval, respectively. Trade direction is based on five criteria: number of trades at the bid price, number of trades at prices greater than the bid but less than the mid-spread, number of trades at the mid-spread, number of trades at prices greater than the mid-spread but less than the

ask, and number of trades at the ask price. Parametric t-test and non-parametric tests are conducted to examine if any significant changes occur from the pre-event period to the event day, from the event day to the post-event period, and from the pre-event period to the post-event period. The pre-event period, the event day and the post-event period are defined as day periods  $[-10, -1]$ , day 0, and  $[+1, +10]$  or the 30-minute interval periods:  $[-136, -7]$ ,  $[-6, +6]$  and  $[+7, +136]$ , respectively.

## 5. EMPIRICAL RESULTS

### 5.1 Abnormal Returns

#### 5.1.1 Announcement Day Effects

The ARs around the announcement days are examined first. The mean ARs for model (1) and tests of their significance for the event window  $[-10, +10]$  around the announcement day for the total sample of 95 rights offerings are presented in Table 3.<sup>6</sup> The mean AR for the announcement day is  $-1.78\%$ . This value is significant at the 5% levels according to the t- and non-parametric tests. On day  $[+1]$ , the AR is negative ( $-0.94\%$ ) but significant only for the non-parametric tests. The average ARs for windows  $[-1, +1]$  and  $[0, +1]$  are negative and significant. Figure 1 presents the plot of cumulative mean abnormal

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<sup>6</sup> The empirical results show that the difference between the mean estimated betas of the stocks before and after the event day is positive but only significant at the 10% level.

returns for the total sample.

The mean ARs for the sample classified by industry type and purpose of issue are presented in Tables 4 and 5, respectively. Due to the small size of the subgroups by industry, the sample is only divided into two groups. The first group consists of 38 companies from the natural resource industries (gold exploration and development industry, mineral exploration and development industry, natural gas pipeline industry and oil and gas exploration and development industry). The second group consists of the 57 remaining companies. The first group only has one significant mean AR, the negative mean AR of -1.38%, which occurs on day +10. In contrast, the second group has a negative and significant mean AR of -2.32% on the announcement day, and a positive significant mean AR of 1.29% on day +3. Furthermore, its average ARs for windows [-1, +1] and [0, +1] are both negative and significant. The difference between the two groups may be due to the fact that the natural resource sector is more highly regulated. Thus, its offerings are more anticipated than non-regulated industries due to the disclosure required.<sup>7</sup> Figure 2 presents the plot of the cumulative mean abnormal returns for the sample classified by industry sector.

Based on Table 5, the mean event day AR is positive but not significant when the offering is made for the purpose of capital investment. This is consistent with the literature,

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<sup>7</sup> The mean difference between the beta estimates is not significant for the natural resource grouping. For the second group, the mean difference between the estimated betas of the stocks before and after the event day is 0.3341 which is significant at the 5% and 1% levels according to the t-test and non-parametric tests, respectively.



which finds that the positive effect of the capital investment announcement dilutes the negative effect of the offering announcement. In contrast, the two-day  $[0, +1]$  mean AR is negative when the purpose of the offering is to reduce debt. The mean two-day AR of  $-2.57\%$  is significant at the 5% for all three test statistics. When more than one purpose for the offering is given, the ARs for the announcement day and window  $[0, +1]$  are still negative but only significant at the 10% level. The fourth group consists of offerings where the purpose is not known. The event-day ARs for this group are negative but not significant. Figure 3 presents the plot of the cumulative mean abnormal returns for the sample classified by purpose of issue.

### 5.1.2 Issue and Expiry Day Effects

The mean ARs around the issue and expiry dates and tests of their significance are presented in Tables 6 and 7, respectively. Based on Table 6, the mean AR on the issue day of  $-3.73\%$  is significant at the 1% level, and 79.17% of the ARs are negative on this date. Based on the non-parametric tests, the ARs on days  $[0]$  and  $[1]$  are negative and significant at the 1% level. The ARs for windows  $[-1, +1]$  and  $[0, +1]$  are significant and negative for all three significance tests. Figure 4 presents the plot of the cumulative mean abnormal returns for the event window  $[-10, +10]$  centered on the issue day for the total sample. Based on Table 7, the mean ARs for the days surrounding the expiry day are positive but insignificant. However, the ARs for windows  $[-1, +1]$  and  $[0, +1]$  are positive and

significant for all three tests.<sup>8</sup> Figure 5 presents the plot of the cumulative mean abnormal returns for the event window [-10, +10] centered on the expiry day for the total sample.

### 5.1.3 Robustness Test

Abnormal returns are estimated next for the three event window ( namely [AD-1, AD+1], [ID-1, ID+1] and [ED-1, ED+1] ) using a common regression model, where AD refers to the announcement day, ID to the issue day and ED to the expiry day. The specific model used is:

$$R_{it} = \alpha_i + \beta_{i1} R_{mt} D_1 + \beta_{i2} R_{mt} D_2 + \beta_{i3} R_{mt} D_3 + \beta_{i4} R_{mt} D_4 + \sum_{j=m}^n \tau_{ij} D_{3j} + \epsilon_{it} \quad (3)$$

where  $D_1$  = dummy variable that equals 1 from -190 days to the day before the announcement and zero otherwise

$D_2$  = dummy variable that equals 1 from the announcement date to the day before the issue date and zero otherwise

$D_3$  = dummy variable that equals 1 from the issue day to the day before the expiry date and zero otherwise

$D_4$  = dummy variable that equals 1 from the expiry day to 191 days after the announcement date and zero otherwise

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<sup>8</sup> The mean difference between the two beta estimates of model (1) is 0.7874 and is significant at the 10% and 5% levels based on the t- and non-parametric tests, respectively. This implies that the risk level of the stock increases after the expiry day.

Based on the results reported in Table 8, the average ARs for the announcement window  $[AD-1, AD+1]$  and the issue window  $[ID-1, ID+1]$  are negative and significant, and the average AR for the expiry date window  $[ED-1, ED+1]$  is positive and significant.<sup>9</sup> Panel B of Table 8 reports the cumulative ARs for combinations of the three periods. The cumulative mean AR for the three event windows of 1.49% is significant at the 5% and 1% levels according to the t- and non-parametric tests, respectively. The cumulative mean AR for the announcement and expiry three-day event windows is positive, small and not significantly different from zero. This implies that the two price reactions cancel each other out. The cumulative mean AR of the announcement and issue periods is negative and significant at the 1% level for all three test statistics. Cumulative mean AR for the issue and expiry periods is negative and only significant at the 10% level based on the t-test. Panel C of Table 8 shows the differences between the beta estimates for the different periods. All of the four beta estimates are not significantly different. Thus, there is no evidence of shifts in risk from one period to another.

In summary, our findings are consistent with the literature. The announcement of a rights offering leads to significantly negative ARs. However, the announcement day ARs vary according to the industry sector and offering purpose. The stock continues to be sold at a discount until the expiry day of the rights, when returns recover. This shows that the

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<sup>9</sup> The mean AR for the announcement window  $[AD-1, AD+1]$  is significant only at 10% level according to the t-test.

negative reaction of the stock price to a rights offering is temporary.<sup>10</sup>

## 5.2 Cross-Sectional Regressions

The two day announcement period  $[0, +1]$  cumulative return is regressed on various variables to identify the factors that determine the negative stock price reaction to announcements of rights offerings. The descriptive statistics for the variables for the total sample and by type of issue purpose are presented in Table 9. The total sample has a mean total assets of \$1,500,050 and a median of \$124,554 (both in thousands). The mean issue size is 88.23%, and the median is 25.28%. The 3-month price run-up is positive, as predicted by previous studies, but very small (0.0288%). Firms whose issue purpose is capital expenditure have the smallest mean firm size (mean of total assets of \$671,000 thousands). They also have the highest change in cash flow growth and the lowest issue size. Their rights offerings announcements follow a negative price run-up (-0.001%). These findings imply that firms which issue rights to invest in capital expenditures are small size firms with little debt, and their main objective is to increase their cash flows. The leverage change is highest for issues whose purpose is to reduce debt, as predicted. The price discounts offered for these issues are the highest (mean of 19.76% and median of 17.86% based on the closing price on the trading day before the announcement date). Rights offerings with more than one purpose are issued by big size firms with mean total assets of \$1,760,000 thousands. These

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<sup>10</sup> The average abnormal return for the window  $[0, +191]$  is regressed against the subscription rate of the offering. The regression coefficient was positive but not significant.

offerings have high issue size, which may be explained by the large amount of capital needed to finance several projects. The mean leverage change for these firms is positive, implying that reducing debt is not the main reason for issuing the rights. Companies with unknown purpose are the biggest size companies. They have higher cash flow growth after the announcements but positive leverage change which may imply that they use the proceeds to increase their future cash flows.

Spearman correlation coefficients and the corresponding p-values of significance are reported in Table 10. There is high correlation between the price discount and issue size of -26.15%, which is significant at the 5% level. The price discount is also correlated (but not significantly) with changes in cash flow growth and changes in leverage. The log of total assets and issue size are both positively correlated with the dummy variable for mixed uses (D3). There is a correlation of -23.36% between the log of total assets and price run-up, which is significant at the 5% level. In the above, a stock that lacks information for at least one variable was excluded from the sample. This reduced the sample size to 49 stocks.

Table 11 presents the estimated coefficients from the cross-sectional regressions for the 49 stocks. The coefficient for the log of total assets is negative and insignificant, which means that firm size has no effect on the stock reaction. The estimated coefficient for the size of the issue suggests that the ARs are inversely and significantly related to issue size. This implies that increasing the size of the offering results in a greater reduction in stock price. This finding is consistent with the price pressure and the information release

hypotheses. The estimated coefficient for the average cumulative abnormal return for the 3-months prior to the announcement is positive but not significant. This finding is not consistent with the hypothesis that firms with good performance, three months prior to the announcement, experience lower stock price reductions. The estimated coefficient for the change in cash flow is positive and significant, as predicted. This implies that the higher the cash flow growth, the lower the reduction in the stock price. This is consistent with the information release hypothesis. The estimated coefficient for leverage change is positive and significant. This finding is consistent with the proposition that larger declines in leverage should be associated with larger drops in stock price. However, when size or cashflow are not included in the regression, the estimated coefficient for leverage change becomes insignificant. The estimated coefficient for price discount is positive as predicted but is not significant. However, when either size, cashflow or leverage are not included in the regression, the estimate becomes significant. This finding may result from the high correlation between the price discount with each of these variables. The dummy variables (indicators for the purpose of the issue) have no explanatory power.

The issue day AR is also regressed against the issue day price discount (calculated in the same manner as the announcement day discount), log of total assets, issue size and the dummy variable indicators for the purpose of the issue (described earlier). This regression is conducted to test the possibility that the news about the price discount may reach the market only on the issue day. The results of these regressions are reported in Table 12. The estimated coefficient of issue size is negative and significant. The estimated coefficient of

the price discount is positive but insignificant. However, when size is not included in the regression, the price discount coefficient becomes significant at the 10% level.<sup>11</sup>

In summary, the cross-sectional regression results show that both issue size and changes in cash flow growth have explanatory power for the negative abnormal returns. This provides evidence that the reduction in stock prices due to announcements of rights offerings are explained mainly by the information release hypothesis, and possibly also by the price pressure hypothesis. Weak evidence is found for the wealth redistribution hypothesis, and no support is found for the hypothesis that large price discounts are associated with large price reductions.

### 5.3 Intraday Analysis

#### 5.3.1 Abnormal Returns

The ARs from the mean-adjusted model (2) for the sample of 64 common shares for the half-hour event window [-19, +19] and their tests of significance are presented in Table 13. Based on the t-tests, few of the half-hour intervals have significant mean ARs. Based on the non-parametric tests, almost half of the intervals have significant mean ARs and most of these are on day [+1]. The average AR for half-hour intervals [-19, +19], [6, +6] and [-6, +19] (i.e. days [-1, +1], [0] and [0, +1], respectively) are negative but not significant for all

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<sup>11</sup> Offer day price discount and issue size have a correlation of 21.7%, which is significant at the 10% level.

three tests. Thus, weak evidence exists that abnormal returns are negative for the event day [0] and days [1] and [-1].

### 5.3.2 Trading Frequency

Table 14 presents the results for the changes in trading frequency for the 30-minute intervals. The event day, pre and post-event periods are defined as the half-hour intervals [-6, +6] or day 0, [-136, -7] or days [-10, -1] and [+7, +136] or days [+1, +10]. Based on non-parametric (and not t-) tests, trading frequency on the event day is lower than that on the pre and post-event periods (5% and 10%, respectively). No significant changes occur from the pre to the post-event period, and from the event day to the day immediately following it or to the day immediately preceding it. The results imply that less common share trades occur on the event day compared to the pre and post-event periods.

### 5.3.3 Trading Volume

Table 15 presents the descriptive statistics for the changes in the trading volumes for the 30-minute intervals. Based on non-parametric tests, the mean trading volume on the event day is significantly lower than that for the pre and post-event periods. However, the differences are not significant using the t-tests. No significant changes occur in trading volume from pre-event to post-event periods, from the event day to day (+1) and from day (-1) to the event day. Therefore, less shares are traded on the announcement day than



during the surrounding periods.

#### 5.3.4 Trading Value

Table 16 presents the results for changes in trading values for the 30-minute intervals. Trading value is the total dollar value of shares traded during each 30-minute interval. The mean trading value for the event period is significantly lower than that during the pre- and post-event periods for the non-parametric but not parametric tests. No significant changes occur over all the other periods.

#### 5.3.5 Conditional Variance

The conditional variance is calculated as the square of the 30-minute returns. The changes in these conditional variances are presented in Table 17. Based on the non-parametric tests, the average variance during the event period is significantly lower than that during the pre- and post-event periods. No significant changes occur over all the other periods.

#### 5.3.6 Relative Liquidity Premium

Table 18 presents the results for the changes in liquidity premium. The relative liquidity premium is measured by the absolute value of the difference between the price and

the mid-spread, divided by the mid-spread. The average relative liquidity premium on the event day is lower than that during the pre- and post-event periods. However, the differences in all periods are not significant for all three tests. Therefore, no strong evidence exists that the relative liquidity premium changed permanently.

### 5.3.7 Relative Bid/Ask Spread

Table 19 presents the changes in the relative bid-ask spread for the half hour intervals. For all the compared periods, the mean relative bid-ask spread is statistically different (lower) for the event day.

### 5.3.8 Trade Depth

Table 20 presents descriptive statistics for the changes in the mean trade depth, calculated as the difference between bid size and ask size, where bid (ask) size is the number of sell (buy) orders for each half-hour interval. No significant changes occur in the average trade depths for the six compared periods.

### 5.3.9 Trade Direction

Trades are classified as a buy or a sell order by comparing the trade price to the most current quote price at the time of the trade. If the trade occurs at the bid or at a price that is

greater than the bid but less than the mid-spread, it is considered a sell order. If a trade occurs at the ask or at a price that is greater than the mid-spread but less than the ask, it is considered a buy order. Five criteria are used to measure changes in trade direction. They are the number of trades at: the bid, prices greater than the bid but less than the mid-spread, the mid-spread, prices greater than the mid-spread but less than the ask, and the ask. Tests of changes in these criteria for the half-hour intervals are reported in Table 21. The mean number of trades at the ask is significantly lower during the event day than during the pre- and post-event periods (non-parametric tests only), and significantly lower between the bid and mid-spread during day [+1] compared to during the event day. No significant changes in measures of trade direction occur for the other periods.

Table 22 presents descriptive statistics for **all** of the intraday activity indicators for different half-hour periods. The results show that the number of trades at the ask is higher than that at the bid for all the periods. This implies that more buyer-initiated trades occur than seller-initiated trades.

In summary, weak evidence exists of significant changes in trade direction. Changes occur only for trades at the bid and at the ask, but not for trades within the spread. No significant changes in the number of seller-initiated trades relative to the number of buyer initiated trades occur in all periods.

### 5.3.10 Summary of the Intraday Indicators for the Rights

Mean and median trade values for eight trade activity indicators for the rights for the sample of 64 rights over the 21 day window from the issue day to the expiry day are discussed next. Based on the plots of the mean and median trading frequencies reported in Figure 6, trade frequencies are low for the first 6 days, increase afterwards and then decrease on day 18 until the expiry day. Based on Figure 7, trade volumes increase gradually, reach a peak on day 15, and then drop on the expiry day. Based on Figure 8, trade dollar values peak on the issue day, drop sharply on the next day and then increase again. They decrease on day 18, and are at their lowest on the expiry day. Based on Figure 9, the relative bid/ask spreads are at their peak on the issue day, drop off and then increase, and reach a peak on the expiry day. Based on Figure 10, no specific pattern exists for the relative liquidity premiums. Based on Figure 11, the variances move up and down over the studied period, although they are at relatively lower levels during the beginning of the period. Based on Figure 12, trade depths are low during the first half of the period, and then increase for the second half of the period. The trade direction is more seller-initiated over the whole period, with the difference between sell and buy orders increasing throughout the period. Based on Figure 13, the number of trades at the bid is higher than the number of trades at the ask and within the spread over the period. The number of trades within the spread is also low compared to the number of trades at the ask over the period.

## **6. CONCLUDING REMARKS, IMPLICATIONS AND DIRECTIONS FOR FUTURE RESEARCH**

This thesis examined the reaction of daily stock prices and intraday trade activity for announcements of rights offerings of a sample of companies listed on the TSE over the period 1987-1994. It attempted to explain the price reaction by testing four hypotheses. The price pressure hypothesis states that an increase in the supply of shares causes a drop in the firm's stock price. The wealth redistribution hypothesis argues that bondholders gain from the leverage reduction associated with the equity issue at the expense of shareholders. The information release hypothesis suggests that the issue signals superior information held by insiders about the firm's true value to other market participants. The price discount hypothesis states that higher discounts for rights offerings are associated with higher price reductions.

The empirical results identify a significant negative stock price reaction, which is consistent with the literature. The abnormal returns are concentrated in the two day-event period  $[0, +1]$ . The mean abnormal return on the event day is  $-1.78\%$  and is significant. While the stock continues to be sold at a discount on the issue day, it recovers on the expiry day of the rights. The stock price reaction is not uniform as many studies find, since it depends on the industry sector of the issues and the purpose of the offerings. Cross-sectional regression results support the information release and possibly the price pressure hypotheses, and do not support the price discount hypothesis.

The tests of intraday activity find no significant permanent changes in all the indicators from the pre- to post-event periods. Trading frequency, volume, value, and conditional variance decrease significantly on the event day relative to the pre-event period and return to normal levels during the post-event period. The relative bid/ask spreads decrease on the event day relative to the pre-event period. The number of trades at the ask during the event day is lower than during the pre- and post-event periods. No changes occur in trade direction (either seller or buyer-initiated) over any two periods. Overall, the empirical results are that trade activity decreases on the event day and then returns to normal levels.

The results of the intraday analysis of rights trading finds that trading activity is low during the first 6 days of the 21-day period, then increases gradually until four days before the expiry date, and then decreases. Trades also are more seller-initiated during this 21-day period.

The findings of this study suggest several implications for financial managers. Managers should not be concerned about the effect of price discounts since the empirical evidence indicates that they do not help explain stock price reactions to announcements of rights offerings. Managers should focus, instead, on the effect of issue size and the purpose of the issue, because they affect the stock price reaction to announcements of rights offerings. Announcing that the proceeds from the issue will be used to finance, for example, capital expenditures projects, to increase the future cash flows of the firm conveys positive

information to the market and dilutes the negative stock price reaction. For purposes that convey negative information to the market, like debt reduction, the firm is better off using internally generated funds instead of external equity to maximize shareholders' wealth. This implies that there is an interaction between financing and investment decisions, and that both types of policies should be determined together.

This study suggests several directions for future research. One suggestion is to include other variables to test the hypotheses explaining the negative price reaction to announcements of rights offerings. These variables include earnings per share, stock's variance of returns, and other measures of leverage change. Another fruitful subject for additional research is to study current trends in other markets, such as European markets, to examine why they continue to use rights widely. Further work should also concentrate on identifying the reasons for the decrease in the use of rights by Canadian firms. In addition, comparing the reaction of stock prices to announcements of other methods for raising additional equity would be interesting.

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**TABLE 1: Summary of the empirical results of previous studies on new equity issues.**

Author	Year of Publication	Sample Period	Sample Size		Event Window	Average Return *	
			Utilities	Industrials		Utilities	Industrials
Pettway and Radcliffe	1985	1973-1980	366		0 [0, +1]	-2.81 -0.58	
Asquith and Mullins	1986	1963-1981	264	128	[-1, 0]	-0.9 (-7.8)	-3.0 (-12.5)
Masulis and Korwar	1986	1963-1980	584	388	[0, +1]	-0.68 (-24.2)	-3.25 (-11.3)
Hess and Bhagat	1986	1963-1978	20	95	[0, +1]	-1 (-6.16)	-4.28 (-11.72)
Kalay and Shirmat	1987	1970-1982		185	0 [-1, 0]		-0.86 (-9.14) -3.36 (-23.6)
Eckbo and Masulis	1992	1963-1981	646	389	[-1, 0]	-0.8 (-11.57)	-3.43 (-21.48)
Mikkelson and Partch	1988	1974-1983	22		[-1,0]	-3.39 (-15.21)	

\* t-test statistics are in parentheses, all abnormal returns are significant at the 1% level.

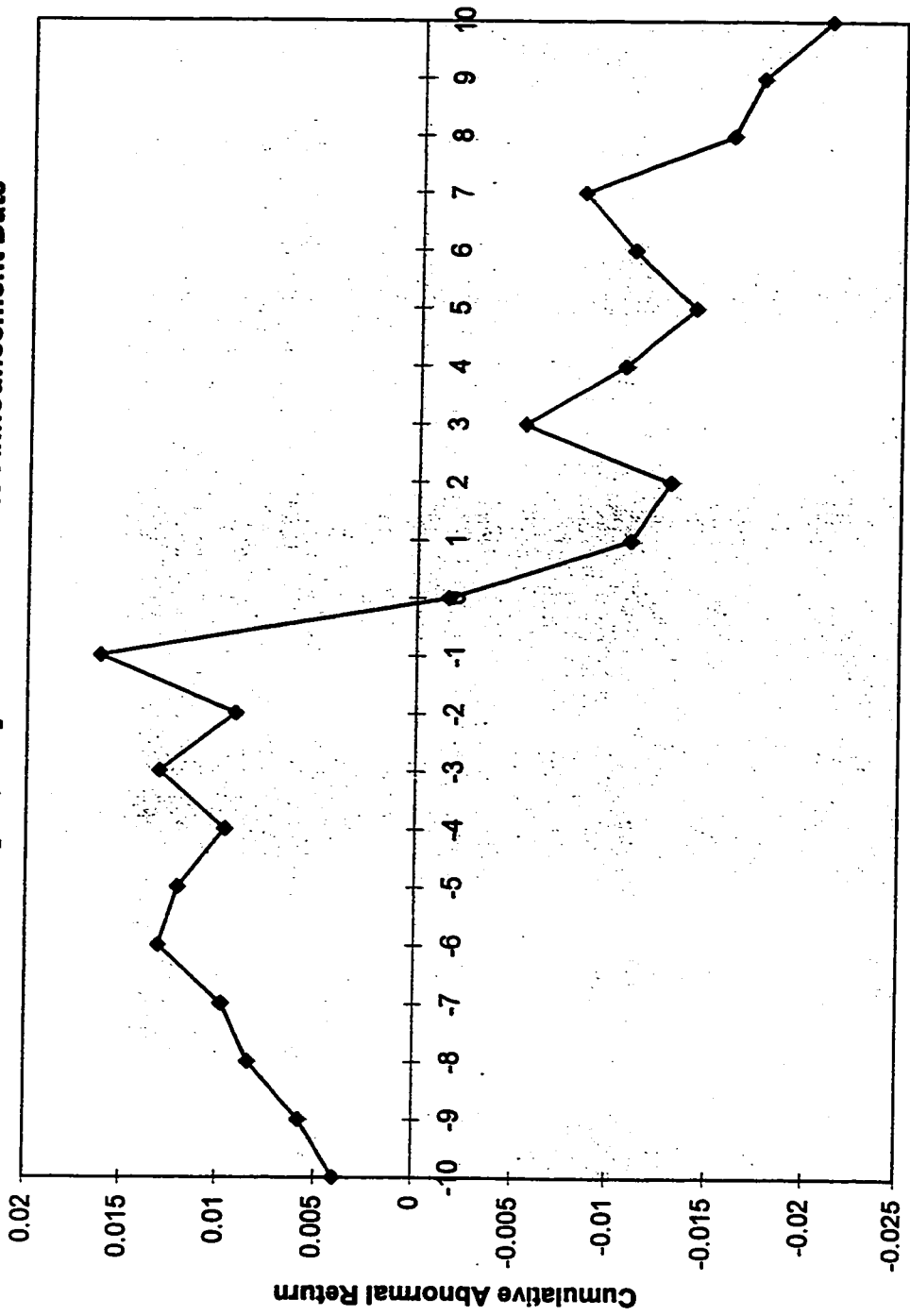
**TABLE 2:** The frequency distribution of the sample of rights offerings of firms listed on the TSE during 1987-1994 is listed below.

<b>Year of Issue Announcement</b>	<b>Number of Offers</b>
1987	1
1988	14
1989	16
1990	11
1991	13
1992	13
1993	15
1994	12
<b>TOTAL</b>	<b>95</b>

**TABLE 3:** The mean abnormal returns for the total sample of 95 pre-emptive rights offerings by TSE-listed firms during 1987-1994 for the event window [-10, +10] centered on the announcement day, and tests of their significance for model (1) are presented below.

Event Day/Period	Daily										Negative Stock Returns (%)
	Average Abnormal Return	Standard Error	t-test	p-value	Median	Sign test	p-value	Wilcoxon test	p-value	Sign test	
-10	0.0040	0.0058	0.69	0.4948	-0.0046	-10.00	0.0495	-271.50	0.3085	61.05	
-9	0.0018	0.0046	0.39	0.6998	-0.0007	-3.00	0.6063	-59.50	0.8238	53.68	
-8	0.0026	0.0041	0.64	0.5213	0.0000	0.00	1.0000	14.50	0.9567	50.53	
-7	0.0014	0.0053	0.27	0.7874	-0.0008	3.00	0.6063	73.50	0.7833	53.68	
-6	0.0033	0.0067	0.50	0.6180	-0.0003	-2.00	0.7572	-80.50	0.7633	52.63	
-5	-0.0010	0.0078	-0.13	0.8943	-0.0035	-8.00	0.1214	-527.50	0.0461	58.95	
-4	-0.0024	0.0063	-0.39	0.6965	-0.0014	-4.00	0.4705	-141.50	0.5963	54.74	
-3	0.0034	0.0041	0.82	0.4122	0.0014	4.00	0.4705	199.50	0.4548	46.32	
-2	-0.0039	0.0048	-0.82	0.4141	-0.0020	-12.00	0.0172	-349.50	0.1890	63.16	
-1	0.0070	0.0057	1.23	0.2204	-0.0001	-1.00	0.9179	146.50	0.5834	51.58	
0	-0.0178	0.0083	-2.16	0.0333	-0.0040	-12.00	0.0172	-603.50	0.0220	63.16	
1	-0.0094	0.0061	-1.54	0.1259	-0.0061	-10.00	0.0495	-584.50	0.0267	61.05	
2	-0.0020	0.0060	-0.34	0.7370	-0.0039	-5.00	0.3533	-268.50	0.3139	55.79	
3	0.0076	0.0051	1.51	0.1342	-0.0012	-7.50	0.1462	39.50	0.8807	58.95	
4	-0.0052	0.0038	-1.38	0.1710	-0.0022	-6.00	0.2564	-331.50	0.2130	56.84	
5	-0.0035	0.0049	-0.72	0.4727	-0.0021	-10.00	0.0495	-248.50	0.3515	61.05	
6	0.0031	0.0055	0.57	0.5703	-0.0002	-1.50	0.8376	-54.00	0.8424	51.58	
7	0.0026	0.0048	0.54	0.5871	-0.0014	-3.50	0.5384	-56.00	0.8366	53.68	
8	-0.0075	0.0069	-1.08	0.2811	-0.0005	-3.50	0.5384	-110.00	0.6853	53.68	
9	-0.0015	0.0071	-0.21	0.8339	-0.0012	-9.50	0.0642	-472.00	0.0797	60.00	
10	-0.0035	0.0037	-0.94	0.3511	-0.0023	-4.50	0.4119	-307.00	0.2566	54.74	
[-10,+10]	-0.0010	0.0009	-1.14	0.2571	-0.0008	-6.50	0.2181	-523.00	0.0517	56.84	
[-1, +1]	-0.0067	0.0036	-1.85	0.0668	-0.0026	-9.00	0.0790	-602.50	0.0223	60.00	
[0, +1]	-0.0136	0.0053	-2.59	0.0113	-0.0075	-16.00	0.0013	-787.50	0.0025	67.37	

**Figure 1**  
**Cumulative Abnormal Returns for the Sample of Rights Offerings for the Event Window [-10, +10] Centered on the Announcement Date**



Days relative to announcement date

**TABLE 4:** The mean abnormal returns for the sample of 95 pre-emptive rights offerings by TSE-listed firms during 1987-1994, classified by industry for the event window [-10, +10], and tests of their significance for model (1) are listed below.

Event Day/ Period	Daily Average Abnormal Return				t-test		Sign test		Wilcoxon test		Negative Stock Returns (%)	
	Return	Standard Error	p-value	Median	test	p-value	test	test	p-value	test	p-value	Returns (%)
-10	0.0020	0.0058	0.34	0.7323	0.0005	0.50	1.0000	3.50	0.9587	50.00		
-9	0.0034	0.0078	0.43	0.6672	-0.0008	-3.50	0.3240	-19.50	0.7731	60.53		
-8	0.0104	0.0078	1.33	0.1921	0.0010	0.50	1.0000	60.50	0.3686	50.00		
-7	0.0107	0.0098	1.10	0.2786	-0.0003	-0.50	1.0000	62.50	0.3528	52.63		
-6	0.0090	0.0148	0.60	0.5499	0.0003	0.50	1.0000	-5.50	0.9352	50.00		
-5	-0.0148	0.0080	-1.84	0.0740	-0.0059	-6.50	0.0470	-151.50	0.0201	68.42		
-4	0.0001	0.0089	0.01	0.9904	0.0004	1.50	0.7428	20.50	0.7618	47.37		
-3	0.0033	0.0070	0.47	0.6419	0.0014	2.50	0.5114	30.50	0.6517	44.74		
-2	0.0040	0.0080	0.50	0.6195	-0.0002	-1.50	0.7428	27.50	0.6841	55.26		
-1	0.0085	0.0080	1.07	0.2930	0.0004	1.50	0.7428	39.50	0.5585	47.37		
0	-0.0099	0.0172	-0.57	0.5700	0.0013	2.50	0.5114	19.50	0.7731	44.74		
1	-0.0124	0.0080	-1.55	0.1301	-0.0056	-3.50	0.3240	-119.50	0.0708	60.53		
2	-0.0082	0.0095	-0.86	0.3964	-0.0047	-2.50	0.5114	-65.50	0.3298	57.89		
3	-0.0002	0.0088	-0.02	0.9814	-0.0032	-8.50	0.0076	-124.50	0.0593	73.68		
4	-0.0072	0.0072	-1.01	0.3214	-0.0057	-3.50	0.3240	-65.50	0.3298	60.53		
5	-0.0036	0.0083	-0.44	0.6650	-0.0081	-3.50	0.3240	-61.50	0.3606	60.53		
6	-0.0012	0.0084	-0.15	0.8844	0.0003	0.00	1.0000	-4.50	0.9490	50.00		
7	0.0045	0.0082	0.55	0.5883	-0.00203	-2.00	0.6271	-17.50	0.8035	55.26		
8	0.0019	0.0049	0.38	0.7057	0.0013	1.00	0.8714	29.50	0.6746	47.37		
9	-0.0055	0.0047	-1.17	0.2483	-0.0010	-3.00	0.4177	-79.50	0.2542	57.89		
10	-0.0138	0.0063	-2.21	0.0331	-0.0088	-2.00	0.6271	-121.50	0.0777	55.26		
[-10,+10]	-0.0009	0.0014	-0.68	0.5015	-0.0019	-3.00	0.4177	-80.50	0.2482	57.89		
[-1, +1]	-0.0046	0.0069	-0.66	0.5134	0.0001	0.50	1.0000	-8.50	0.7844	50.00		
[0, +1]	-0.0112	0.0096	-1.16	0.2533	-0.0014	-4.50	0.1877	-57.50	0.3930	63.16		

Panel A: Natural Resources Industry, N= 38

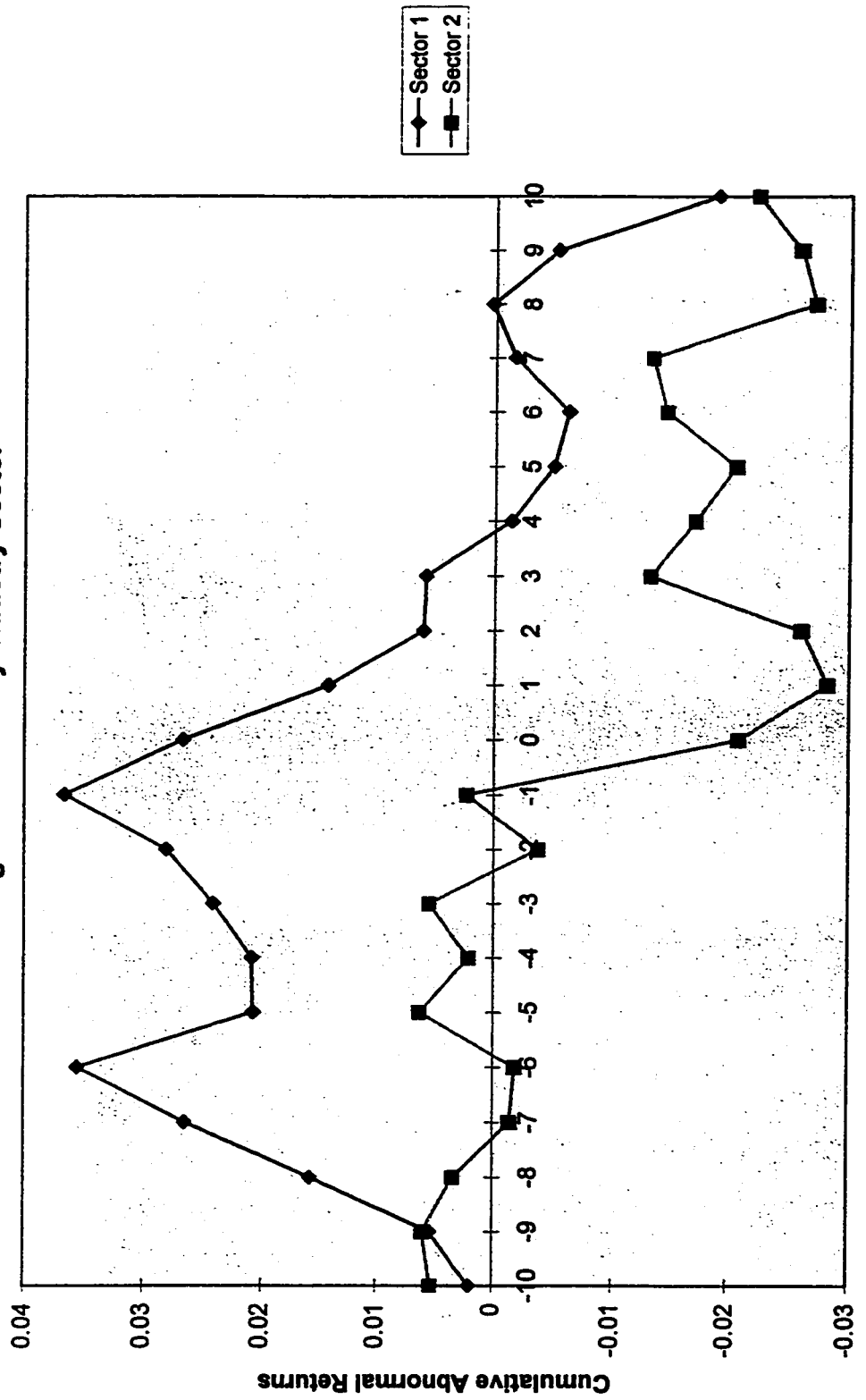
TABLE 4 (continued)

Event Day/Period	Daily Average		t-test	p-value	Median	Sign test	p-value	Wilcoxon test	p-value	Negative Stock Returns (%)
	Abnormal Return	Standard Error								
-10	0.0053	0.0090	0.60	0.5541	-0.0055	-10.50	0.0075	-175.50	0.1652	68.42
-9	0.0007	0.0057	0.13	0.8997	0.0001	0.50	1.0000	5.50	0.9656	49.12
-8	-0.0026	0.0043	-0.60	0.5511	-0.0008	0.50	1.0000	-92.50	0.4673	50.88
-7	-0.0048	0.0058	-0.82	0.4163	-0.0010	-2.50	0.5966	-51.50	0.6862	54.39
-6	-0.0004	0.0052	-0.08	0.9375	-0.0004	-2.50	0.5966	-44.50	0.7270	54.39
-5	0.0081	0.0118	0.69	0.4927	-0.0001	-1.50	0.7914	-94.50	0.4576	52.63
-4	-0.0042	0.0086	-0.48	0.6321	-0.0023	-5.50	0.1849	-137.50	0.2785	58.65
-3	0.0034	0.0050	0.68	0.4982	0.0014	1.50	0.7914	70.50	0.5799	47.37
-2	-0.0092	0.0059	-1.57	0.1219	-0.0062	-10.50	0.0075	-265.50	0.0337	68.42
-1	0.0060	0.0079	0.76	0.4494	-0.0007	-2.50	0.5966	22.50	0.8600	54.39
0	-0.0232	0.0077	-3.01	0.0039	-0.0117	-14.50	0.0002	-404.50	0.0009	75.44
1	-0.0073	0.0086	-0.85	0.3998	-0.0080	-6.50	0.1112	-172.50	0.1726	61.40
2	0.0021	0.0078	0.27	0.7892	-0.0021	-2.50	0.5966	-65.50	0.6072	54.39
3	0.0129	0.0060	2.15	0.0362	0.0027	1.00	0.8939	183.00	0.1368	49.12
4	-0.0039	0.0042	-0.94	0.3535	-0.0013	-2.50	0.5966	-101.50	0.4248	54.39
5	-0.0035	0.0061	-0.57	0.5698	-0.0021	-6.50	0.1112	-33.50	0.7928	61.40
6	0.0060	0.0073	0.83	0.4109	-0.0016	-1.50	0.7914	-23.50	0.8538	52.63
7	0.0013	0.0058	0.23	0.8176	-0.0014	-1.50	0.7914	-11.50	0.9282	52.63
8	-0.0138	0.0111	-1.25	0.2181	-0.0012	-4.50	0.2892	-116.50	0.3592	57.89
9	0.0012	0.0115	0.10	0.9198	-0.0020	-6.50	0.1112	-161.50	0.2021	61.40
10	0.0035	0.0043	0.81	0.4232	-0.0020	-2.50	0.5966	3.50	0.9781	54.39
[-10,+10]	-0.0011	0.0012	-0.91	0.3673	-0.0005	-3.50	0.4270	-183.50	0.1464	56.14
[-1,+1]	-0.0082	0.0040	-2.06	0.0440	-0.0070	-9.50	0.0163	-38.50	0.0046	66.67
[0,+1]	-0.0152	0.0061	-2.52	0.0147	-0.0125	-11.50	0.0032	-388.50	0.0014	70.18

Panel B: Other Industries, N=57



**Figure 2**  
**Plot of the Cumulative Abnormal Returns for the Announcements of Rights Offerings Classified by Industry Sector**



**TABLE 5: The mean abnormal returns for the sample of 95 pre-emptive rights offerings by TSE-listed firms during 1987-1994, classified by purpose of offering, for the event window [-10, +10], and tests of their significance for model (1) are listed below.**

Event Day	Daily				Sign test	Wilcoxon test	p-value	Negative Stock Returns (%)		
	Average Abnormal Return	Standard Error	t-test	p-value					Median	test
-10	-0.0086	0.0069	-1.25	0.2295	-0.0018	-1.50	0.6291	-21.50	0.3289	61.11
-9	0.0115	0.0120	0.96	0.3491	0.0005	0.50	1.0000	18.50	0.4038	50.00
-8	0.0047	0.0119	0.40	0.6955	-0.0005	-0.50	1.0000	-5.50	0.8176	55.56
-7	0.0017	0.0094	0.18	0.8610	-0.0018	-2.50	0.3323	-5.50	0.8176	66.67
-6	-0.0238	0.0108	-2.20	0.0419	-0.0182	-1.50	0.6291	-38.50	0.0714	61.11
-5	-0.0085	0.0072	-1.17	0.2583	-0.0091	-4.50	0.0490	-32.50	0.1324	77.78
-4	0.0071	0.0083	0.86	0.4004	-0.0005	-0.50	1.0000	6.50	0.7819	55.56
-3	0.0017	0.0116	0.15	0.8846	-0.0012	-1.50	0.6291	-10.50	0.6441	61.11
-2	0.0161	0.0100	1.61	0.1248	-0.0002	-1.50	0.6291	16.50	0.4586	61.11
-1	0.0144	0.0197	0.73	0.4747	-0.0012	-0.50	1.0000	-6.50	0.7819	55.56
0	0.0004	0.0188	0.02	0.9819	0.0008	0.50	1.0000	-4.50	0.8536	50.00
1	0.0117	0.0154	0.76	0.4583	-0.0019	-0.50	1.0000	3.50	0.8900	55.56
2	0.0027	0.0232	0.12	0.9083	-0.0011	-0.50	1.0000	-3.50	0.8900	55.56
3	0.0207	0.0159	1.30	0.2105	-0.0007	-0.50	1.0000	17.50	0.4307	55.56
4	-0.0177	0.0111	-1.59	0.1299	-0.0067	-4.50	0.0490	-33.50	0.1202	77.78
5	-0.0081	0.0118	-0.69	0.5025	-0.0130	-4.50	0.0490	-23.50	0.2842	77.78
6	0.0005	0.0161	0.03	0.9737	-0.0012	-1.00	0.8145	-6.50	0.7987	55.56
7	0.0038	0.0161	0.24	0.8154	-0.0130	-2.00	0.4807	-8.50	0.7337	61.11
8	-0.0001	0.0122	-0.01	0.9934	-0.0014	-1.00	0.8145	-5.50	0.8317	55.56
9	0.0020	0.0083	0.24	0.8107	0.0005	1.00	0.8145	12.50	0.6095	44.44
10	-0.0098	0.0108	-0.90	0.3806	0.0025	1.00	0.8145	-8.50	0.7337	44.44
[-10, +10]	0.0010	0.0020	0.48	0.6384	-0.0006	0.00	1.0000	-2.50	0.9323	50.00
[-1, +1]	0.0088	0.0080	1.10	0.2880	0.0018	1.50	0.6291	13.50	0.5477	44.44
[0, +1]	0.0061	0.0116	0.53	0.6050	-0.0123	0.50	1.0000	10.50	0.6441	50.00

Panel A: Capital Investment, N=18

TABLE 5 (continued)

Event Day/Period	Daily		t-test	p-value	Median	Sign test	p-value	Wilcoxon test	p-value	Negative Stock Returns (%)
	Average Abnormal Return	Standard Error								
-10	0.0127	0.0102	1.24	0.2260	-0.0042	-1.00	0.8388	13.00	0.7187	54.17
-9	0.0006	0.0075	0.07	0.9413	0.0017	1.00	0.8388	3.00	0.9338	45.83
-8	-0.0058	0.0062	-0.95	0.3537	0.0017	1.00	0.8388	-14.00	0.6980	45.83
-7	0.0089	0.0092	0.97	0.3445	0.0049	1.00	0.8388	24.00	0.5046	45.83
-6	0.0150	0.0086	1.74	0.0950	0.0161	4.00	0.1516	63.00	0.0708	33.33
-5	-0.0113	0.0057	-1.97	0.0607	-0.0111	-7.00	0.0066	-80.00	0.1870	79.17
-4	-0.0125	0.0090	-1.38	0.1810	-0.0041	-3.00	0.3075	-41.00	0.2497	62.50
-3	0.0067	0.0078	0.86	0.4008	0.0028	3.00	0.3075	43.00	0.2266	37.50
-2	-0.0105	0.0073	-1.43	0.1662	-0.0044	-6.00	0.0227	-63.00	0.0708	75.00
-1	0.0189	0.0110	1.71	0.0999	0.0001	0.00	1.0000	46.00	0.1948	50.00
0	-0.0303	0.0219	-1.38	0.1805	-0.0064	-5.00	0.0639	-65.00	0.0616	70.83
1	-0.0211	0.0081	-2.60	0.0160	-0.0171	-5.00	0.0639	-89.00	0.0078	70.83
2	0.0093	0.0078	1.20	0.2412	0.0034	1.00	0.8388	36.00	0.3138	45.83
3	-0.0081	0.0079	-1.03	0.3144	-0.0026	-6.00	0.0227	-73.00	0.0338	75.00
4	-0.0055	0.0083	-0.67	0.5122	-0.0023	-3.00	0.3075	-24.00	0.5046	62.50
5	0.0055	0.0079	0.70	0.4924	-0.0025	-2.00	0.5413	2.00	0.9559	58.33
6	-0.0050	0.0057	-0.89	0.3851	-0.0025	-1.00	0.8388	-20.00	0.5787	54.17
7	0.0029	0.0074	0.40	0.6953	0.0006	0.00	1.0000	11.00	0.7606	50.00
8	0.0037	0.0037	0.99	0.3330	0.0013	1.00	0.8388	30.00	0.4029	45.83
9	-0.0104	0.0058	-1.80	0.0856	-0.0021	-4.00	0.1516	-61.00	0.0809	66.67
10	-0.0145	0.0045	-3.20	0.0040	-0.0133	-6.00	0.0227	-96.00	0.0036	75.00
[-10,+10]	-0.0024	0.0009	-2.57	0.0172	-0.0017	-4.00	0.1516	-77.00	0.0243	66.67
[-1, +1]	-0.0176	0.0085	-1.27	0.2159	-0.0066	-5.00	0.0639	-79.00	0.0205	70.83
[0, +1]	-0.0257	0.0111	-2.32	0.0296	-0.0123	-7.00	0.0066	-113.00	0.0003	79.17

Panel B: Debt Reduction , N=24

TABLE 5 (continued)

Event Day/Period	Daily				Sign		Wilcoxon		Negative Stock Returns (%)	
	Average Abnormal Return	Standard Error	t-test	p-value	Median	Sign test	p-value	test		
-10	0.0007	0.0105	0.06	0.9498	-0.0032	-3.00	0.3616	-25.50	0.6083	60.00
-9	-0.0008	0.0086	-0.09	0.9308	-0.0045	-2.00	0.5847	-37.50	0.4499	56.67
-8	0.0061	0.0061	1.00	0.3268	0.0012	1.00	0.8556	15.50	0.7558	46.67
-7	-0.0043	0.0095	-0.46	0.6512	-0.0009	-1.00	0.8555	3.50	0.9441	53.33
-6	-0.0002	0.0082	-0.02	0.9809	-0.0045	-4.00	0.2005	-23.50	0.6369	63.33
-5	0.0209	0.0221	0.95	0.3509	0.0018	2.00	0.5847	16.50	0.7405	43.33
-4	0.0030	0.0161	0.18	0.8556	-0.0030	-1.00	0.8555	-13.50	0.7865	53.33
-3	0.0018	0.0080	0.22	0.8268	0.0017	3.00	0.3616	31.50	0.5262	40.00
-2	-0.0078	0.0103	-0.76	0.4538	-0.0065	-4.00	0.2005	-59.50	0.2269	63.33
-1	0.0048	0.0079	0.60	0.5505	0.0038	3.00	0.3616	45.50	0.3581	40.00
0	-0.0266	0.0144	-1.84	0.0754	-0.0144	-5.00	0.0987	-75.50	0.1222	66.67
1	-0.0161	0.0140	-1.15	0.2610	-0.0040	-2.00	0.5847	-38.50	0.4378	56.67
2	-0.0150	0.0104	-1.45	0.1586	-0.0122	-5.00	0.0987	-112.50	0.0179	66.67
3	0.0228	0.0098	2.33	0.0268	0.0103	2.00	0.5847	92.50	0.0555	43.33
4	-0.0067	0.0054	-1.24	0.2237	-0.0048	-1.00	0.8555	-54.50	0.2694	53.33
5	-0.0091	0.0107	-0.85	0.4033	-0.0020	-2.00	0.5847	-3.50	0.9441	56.67
6	0.0164	0.0127	1.28	0.2091	0.0016	1.00	0.8555	26.50	0.5943	46.67
7	0.0017	0.0062	0.27	0.7891	-0.0004	0.00	1.0000	17.50	0.7254	50.00
8	-0.0235	0.0201	-1.17	0.2513	-0.0005	-3.00	0.3616	-38.50	0.4378	60.00
9	0.0127	0.0206	0.62	0.5429	-0.0017	-4.00	0.2005	-50.50	0.3069	63.33
10	0.0020	0.0045	0.45	0.6553	0.0015	1.00	0.8555	6.50	0.8963	46.67
[-10,+10]	-0.0009	0.0021	-0.44	0.6635	-0.0007	-2.00	0.5847	-36.50	0.4622	56.67
[-1,+1]	-0.0127	0.0071	-1.78	0.0863	-0.0018	-2.00	0.5847	-69.50	0.1562	56.67
[0,+1]	-0.0213	0.0110	-1.93	0.0629	-0.0065	-5.00	0.0987	-85.50	0.0782	66.67

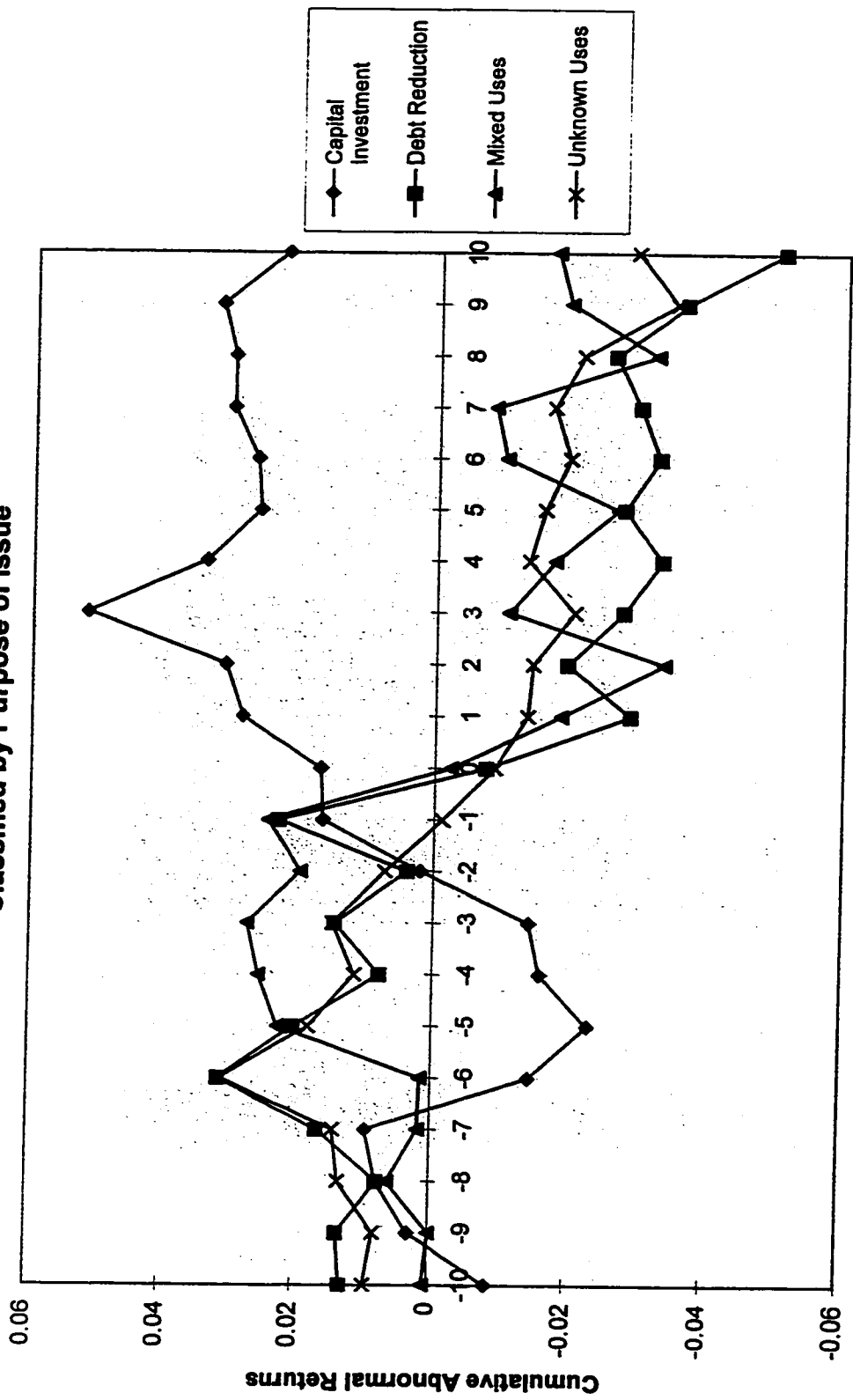
Panel C: Mixed Uses, N=30

TABLE 5 (continued)

Event Day/Period	Daily				Sign				Wilcoxon				Negative Stock Returns (%)
	Average Abnormal Return	Standard error	t-test	p-value	Median	test	p-value	test	p-value	test	p-value		
-10	0.0092	0.0161	0.57	0.5744	-0.0074	-4.50	0.0931	-37.00	0.2697	69.57			
-9	-0.0013	0.0097	-0.13	0.8980	-0.0014	-2.50	0.4049	-16.00	0.6371	60.87			
-8	0.0053	0.0099	0.53	0.6000	-0.0005	-1.50	0.6776	-1.00	0.9765	56.52			
-7	0.0009	0.0136	0.07	0.9471	-0.0003	-0.50	1.0000	3.00	0.9297	52.17			
-6	0.0170	0.0218	0.78	0.4444	-0.0004	-0.50	1.0000	-9.00	0.7911	52.17			
-5	-0.0132	0.0114	-1.16	0.2598	0.0004	1.50	0.6776	-21.00	0.5350	43.48			
-4	-0.0066	0.0103	-0.64	0.5297	0.0006	0.50	1.0000	0.00	1.0000	47.83			
-3	0.0033	0.0061	0.54	0.5930	-0.0005	-0.50	1.0000	2.00	0.9531	52.17			
-2	-0.0076	0.0091	-0.84	0.4113	-0.0009	-0.50	1.0000	-10.00	0.7685	69.57			
-1	-0.0082	0.0088	-0.93	0.3636	-0.0016	-3.50	0.2100	-36.00	0.2833	65.22			
0	-0.0077	0.0089	-0.87	0.3939	-0.0023	-2.50	0.4049	-22.00	0.5155	60.87			
1	-0.0047	0.0083	-0.57	0.5735	-0.0085	-2.50	0.4049	-44.00	0.1867	60.87			
2	-0.0007	0.0069	-0.10	0.9227	-0.0005	-0.50	1.0000	-11.00	0.7460	52.17			
3	-0.0060	0.0050	-1.19	0.2456	-0.0025	-3.00	0.2863	-37.50	0.2317	65.22			
4	0.0067	0.0065	1.03	0.3132	0.0050	2.50	0.4049	28.00	0.4065	39.13			
5	-0.0022	0.0084	-0.26	0.7976	-0.0007	-1.50	0.6776	-14.00	0.6799	56.52			
6	-0.0036	0.0068	-0.53	0.6021	-0.0016	-0.50	1.0000	-12.00	0.7238	52.17			
7	0.0024	0.0107	0.23	0.8218	-0.0038	-1.50	0.6776	-12.00	0.7238	69.57			
8	-0.0042	0.0053	-0.79	0.4351	-0.0017	-0.50	1.0000	-11.00	0.7460	52.17			
9	-0.0135	0.0082	-1.66	0.1115	-0.0041	-2.50	0.4049	-42.00	0.2083	60.87			
10	0.0058	0.0099	0.59	0.5621	-0.0020	-0.50	1.0000	4.00	0.9063	52.17			
[-10,+10]	-0.0012	0.0062	-0.75	0.4602	-0.0001	-0.50	1.0000	-31.00	0.3572	52.17			
[-1, +1]	-0.0070	0.0042	-1.68	0.1081	-0.0073	-3.50	0.2100	-56.00	0.0886	65.22			
[0, +1]	-0.0063	0.0061	-1.04	0.3107	-0.0093	-4.50	0.9310	-54.00	0.1014	69.57			

Panel D: Unknown Uses, N=23

**Figure 3**  
**Plot of the Cumulative Abnormal Returns for Announcements of Rights Offerings**  
**Classified by Purpose of Issue**

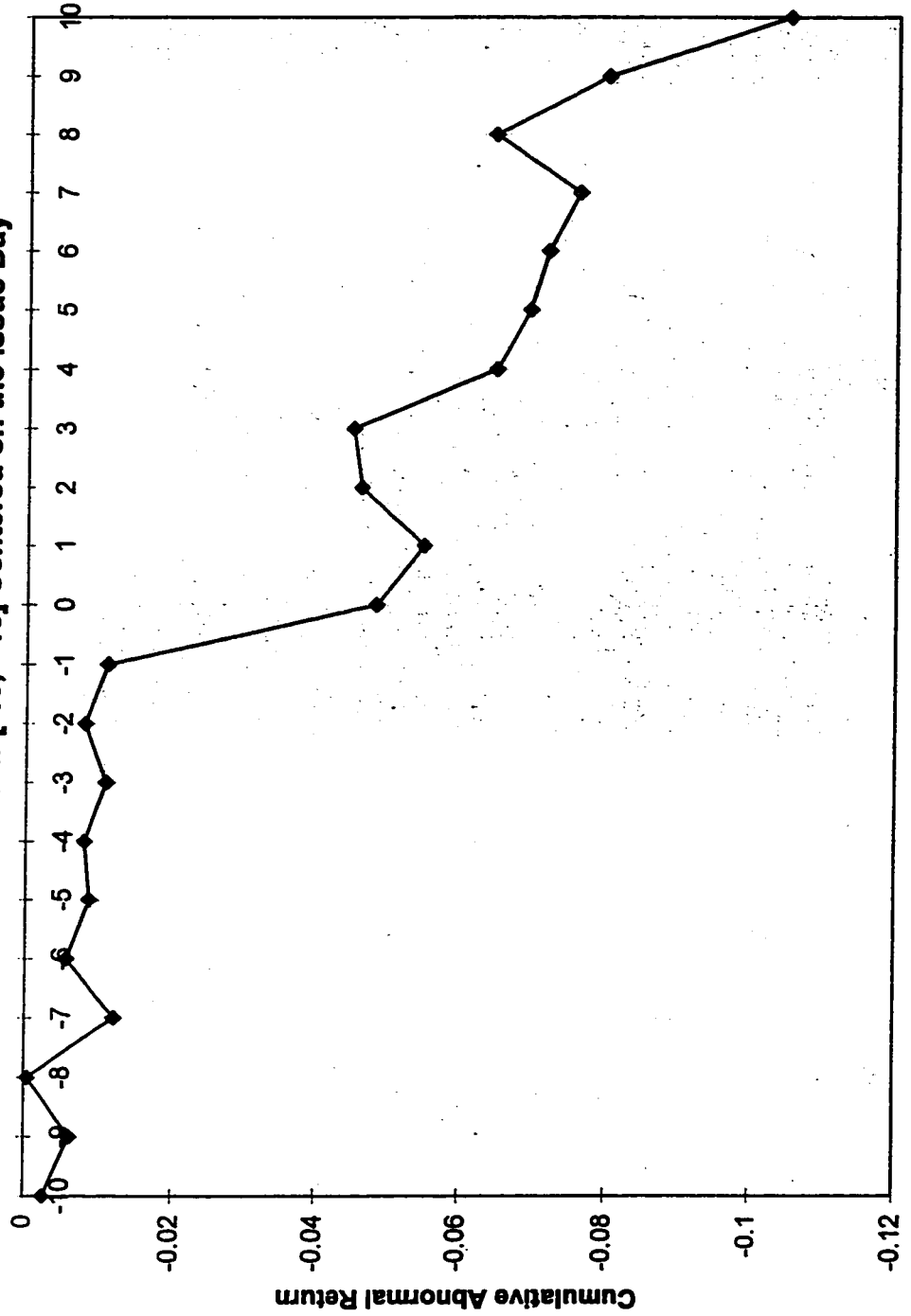


Days relative to announcement date

**TABLE 6:** The mean abnormal returns for the total sample of 95 pre-emptive rights offerings by TSE-listed firms during 1987-1994 for the event window [-10, +10] centered on the issue day, and tests of their significance for model(1) are presented below.

Event Day/Period	Daily Average Abnormal Return				t-test		Sign test		Wilcoxon test		Negative Stock Returns (%)
	Average Return	Standard Error	t-test	p-value	Median	test	p-value	test	p-value		
-10	-0.0027	0.0049	-0.56	0.5769	-0.0015	-4.00	0.4752	-263.00	0.3391	54.17	
-9	-0.0036	0.0053	-0.68	0.4969	-0.0023	-9.00	0.0822	-433.00	0.1140	59.38	
-8	0.0058	0.0063	0.92	0.3597	-0.0006	-3.00	0.6101	-74.00	0.7884	53.13	
-7	-0.0116	0.0057	-2.02	0.0462	-0.0048	-11.00	0.0315	-594.00	0.0292	61.46	
-6	0.0063	0.0052	1.20	0.2338	-0.0023	-4.00	0.4752	-27.00	0.9220	54.17	
-5	-0.0030	0.0037	-0.82	0.4156	-0.0023	-9.00	0.0822	-313.00	0.2548	59.38	
-4	0.0007	0.0048	0.15	0.8776	-0.0005	-5.00	0.3584	12.00	-0.9653	55.21	
-3	-0.0028	0.0061	-0.46	0.6485	-0.0012	-3.00	0.6101	-186.00	0.4996	53.13	
-2	0.0028	0.0062	0.45	0.6549	-0.0014	-3.00	0.6101	-120.00	0.6633	53.13	
-1	-0.0029	0.0049	-0.60	0.5513	-0.0008	-2.00	0.7596	-175.00	0.5253	52.08	
0	-0.0373	0.0108	-3.44	0.0009	-0.0162	-27.50	0.0001	-1398.00	0.0001	79.17	
1	-0.0065	0.0080	-0.81	0.4174	-0.0126	-17.00	0.0007	-1001.00	0.0002	67.71	
2	0.0087	0.0130	0.67	0.5053	-0.0025	-6.00	0.2615	-233.00	0.3973	56.25	
3	0.0011	0.0078	0.14	0.8873	-0.0034	-11.50	0.0235	-579.00	0.0309	62.50	
4	-0.0196	0.0186	-1.05	0.2962	-0.0004	-2.50	0.6817	-48.00	0.5897	53.13	
5	-0.0046	0.0115	-0.40	0.6916	-0.0097	-18.50	0.0002	-984.00	0.0002	69.79	
6	-0.0024	0.0095	-0.25	0.8038	-0.0011	-2.50	0.6817	-387.00	0.1519	53.13	
7	-0.0042	0.0094	-0.45	0.6563	-0.0046	-12.50	0.0134	-613.00	0.0221	63.54	
8	0.0115	0.0105	1.10	0.2756	-0.0009	-3.50	0.5384	-69.00	0.7994	54.17	
9	-0.0155	0.0094	-1.65	0.1026	-0.0039	-12.50	0.0134	-689.00	0.0098	63.54	
10	-0.0253	0.0197	-1.28	0.2032	-0.0020	-4.50	0.4119	-305.00	0.2598	55.21	
[-10,+10]	-0.0048	0.0011	-4.58	0.0001	-0.0039	-27.00	0.0001	-1397.00	0.0001	78.13	
[-1, +1]	-0.0156	0.0024	-3.67	0.0004	-0.0091	-23.00	0.0001	-1373.00	0.0001	73.96	
[0, +1]	-0.0217	0.0059	-3.66	0.0004	-0.0159	-28.00	0.0001	-1562.00	0.0001	79.17	

**Figure 4**  
**Plot of the Cumulative Abnormal Returns for the Sample of Rights Offerings for the**  
**Event Window [-10, +10] Centered on the Issue Day**



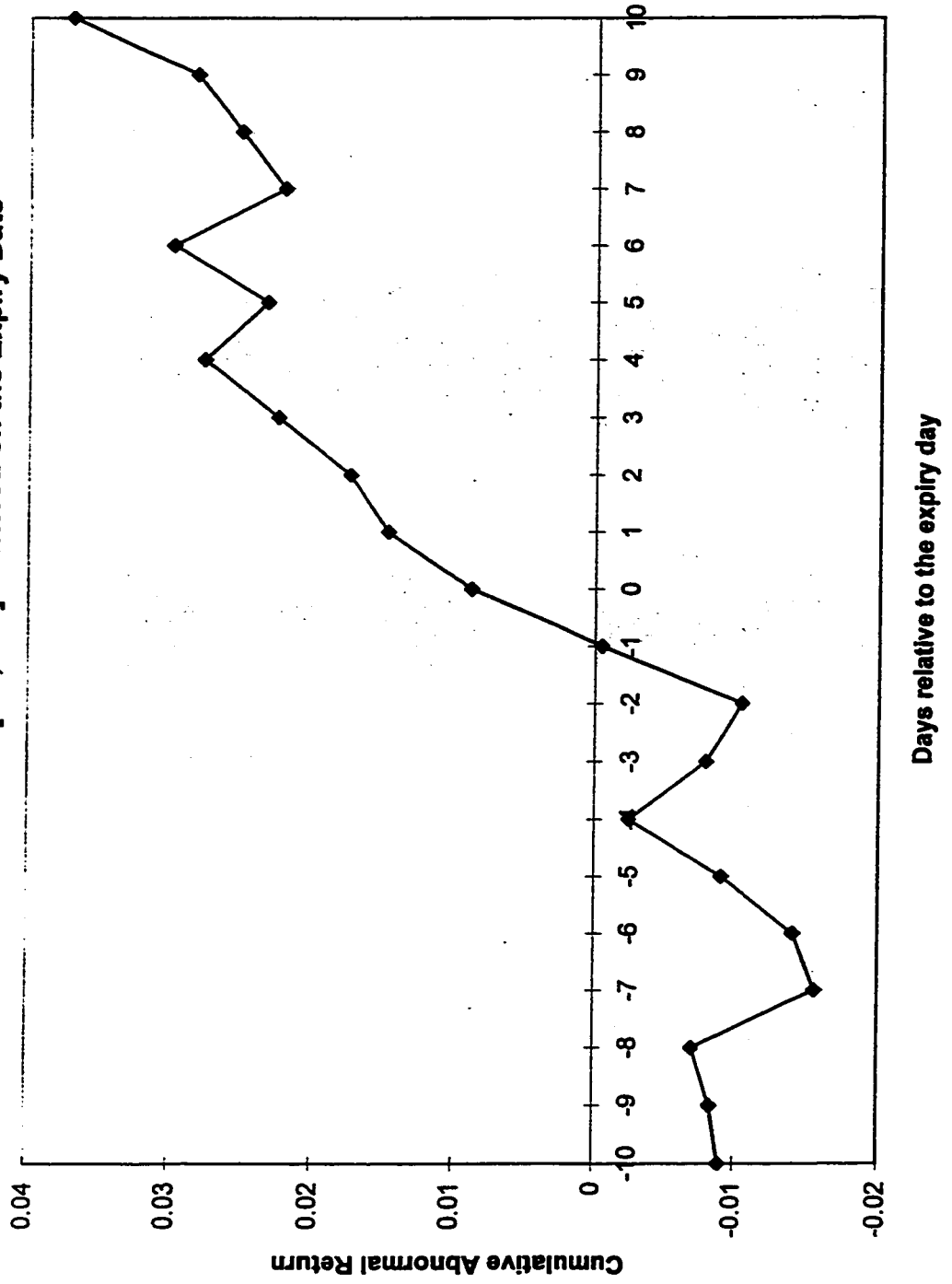
Days relative to issue date



TABLE 7: The mean abnormal returns for the total sample of 95 pre-emptive rights offerings by TSE-listed firms during 1987-1994 for the event window [-10, +10] centered on the expiry day, and tests of their significance for model (1) are presented below.

Event Day/Period	Daily				Sign test	Wilcoxon test	p-value	Negative Stock Returns (%)
	Average Abnormal Return	Standard Error	t-test	p-value				
-10	-0.0090	0.0049	-1.83	0.0707	-0.0020	-6.50	0.2181	0.0958
-9	0.0006	0.0054	0.12	0.9069	-0.0004	-1.00	0.9188	0.8790
-8	0.0013	0.0050	0.25	0.8017	-0.0007	-4.00	0.4752	0.4677
-7	-0.0086	0.0046	-1.89	0.0622	-0.0017	-8.00	0.1253	0.0674
-6	0.0015	0.0050	0.30	0.7615	0.0005	2.00	0.7596	0.8990
-5	0.0051	0.0078	0.65	0.5179	-0.0004	0.00	1.0000	0.6633
-4	0.0066	0.0047	1.41	0.1613	0.0011	4.00	0.4752	0.3484
-3	-0.0055	0.0042	-1.30	0.1959	-0.0007	-4.00	0.4752	0.4812
-2	-0.0025	0.0038	-0.67	0.5075	-0.0019	-3.00	0.6101	0.5493
-1	0.0100	0.0054	1.85	0.0672	0.0011	1.00	0.9188	0.1730
0	0.0093	0.0072	1.29	0.1991	0.0001	0.50	1.0000	0.3466
1	0.0059	0.0048	1.22	0.2272	0.0022	6.50	0.2181	0.1756
2	0.0027	0.0052	0.52	0.6060	0.0022	2.50	0.6817	0.5022
3	0.0051	0.0063	0.82	0.4162	-0.0025	-3.50	0.5384	0.5804
4	0.0052	0.0067	0.79	0.4334	0.0000	0.50	1.0000	0.9354
5	-0.0044	0.0056	-0.79	0.4338	-0.0001	-0.50	1.0000	0.7071
6	0.0066	0.0066	1.00	0.3187	0.0007	5.00	0.3533	0.4458
7	-0.0078	0.0049	-1.59	0.1162	-0.0029	-9.00	0.0790	0.0785
8	0.0031	0.0043	0.72	0.4761	0.0013	3.00	0.6063	0.3230
9	0.0031	0.0032	0.97	0.3366	0.0018	2.50	0.6785	0.2763
10	0.0087	0.0046	1.89	0.0619	0.0009	6.50	0.2132	0.2501
[-10,+10]	0.0018	0.0008	2.41	0.0177	0.0014	14.00	0.0056	0.0140
[-1,+1]	0.0088	0.0026	3.38	0.0011	0.0059	17.00	0.0007	0.0002
[0,+1]	0.0076	0.0033	2.31	0.0229	0.0037	7.50	0.1505	0.0448
								42.71

**Figure 5**  
**Plot of the Cumulative Abnormal Returns for the Sample of Rights Offerings for the**  
**Event Window [-10, +10] Centered on the Expiry Date**



**TABLE 8:** The mean abnormal returns and the beta estimates relative to the announcement day (AD), the issue day (ID) and the expiry day (ED) for 95 rights offerings by firms listed on the TSE for 1987-1994, and tests of their significance for model (3) are presented below. The cumulative average abnormal returns are also presented.

Interval	Average AR/ Beta	Standard Error	t-test	p-value	Median	Sign test	Wilcoxon test	p-value	Negative Stock Returns (%)
Panel A: Mean abnormal returns and beta estimates									
B1 \$	0.5893	0.0758	7.727	0.0001	0.5251	29.00	1719.50	0.0001	20.00
B2 \$\$	-0.6473	1.0797	-0.60	0.5503	0.1952	4.50	415.00	0.1241	45.26
B3 \$\$\$	1.0676	0.3625	2.95	0.0041	0.5141	19.50	1057.00	0.0001	29.47
B4 \$\$\$	1.0227	0.3280	3.12	0.0024	0.5651	32.50	1655.00	0.0001	15.79
[AD-1,AD+1]	-0.0067	0.0038	-1.75	0.0835	-0.0054	-11.00	-603.50	0.022	62.11
[ED-1, ED+1]	-0.0167	0.0038	-4.37	0.0001	-0.0100	-23.50	-1348.00	0.0001	74.74
[LD-1, LD+1]	0.0085	0.0027	3.14	0.0023	0.0054	13.50	880.00	0.0008	35.79
Panel B: Cumulative abnormal returns									
CUM1*	-0.0149	0.0018	-2.07	0.0411	-0.0132	-13.50	-753.00	0.0073	64.21
CUM2**	-0.0234	0.0063	-3.70	0.0004	-0.0154	-25.50	-1204.00	0.0001	76.84
CUM3***	0.0018	0.0051	0.36	0.7216	-0.0031	-7.50	-51.00	0.8510	57.89
CUM4****	-0.0081	0.0047	-1.72	0.0889	-0.0103	-10.50	-570.00	0.0336	61.05
Panel C: Difference between beta estimates									
B2 - B1	-1.2365	1.0882	-1.1363	0.2587	-0.2734	-4.50	-248.00	0.3600	54.74
B3 - B1	0.4783	0.3703	1.2918	0.1996	0.0629	2.50	201.00	0.4585	47.37
B4 - B1	0.4334	0.3472	1.2483	0.2150	0.1255	5.50	172.00	0.5260	44.21
B3 - B2	1.7148	1.1555	1.4841	0.1411	0.4714	7.50	476.00	0.0771	42.11
B4 - B2	1.6700	1.1129	1.5006	0.1368	0.2805	8.50	373.00	0.1674	41.05
B4 - B3	-0.0449	0.4863	-0.0923	0.9267	0.1655	3.50	77.00	0.7767	46.32

\$ B1= beta estimate for the sample before the announcement date, \$\$ B2= beta estimate for the sample from the announcement date to the day before the issue date, \$\$\$ B3= beta estimate for the sample from the issue date to the day before the expiry date, \*\*\*\* B4= beta estimate for the sample from the expiry date to 191 days after the announcement date  
 \* CUM1= cumulative return for the three periods: [AD-1, AD+1], [ID-1, ID+1] and [ED-1, ED+1], \*\* CUM2= cumulative return for the periods [AD-1, AD+1] and [ID-1, ID+1], ID+1), ID+1), ID+1), ID+1)  
 \*\*\* CUM3= cumulative return for the periods [AD-1, AD+1] and [ED-1, ED+1], \*\*\*\* CUM4= cumulative return for the periods [ID-1, ID+1] and [ED-1, ED+1]

**TABLE 9:** The descriptive statistics for the cross-sectional regression variables for the sample of rights offerings, and for the classification based on issue purpose, are listed below.

Variable	Mean	Standard Deviation	Median	Minimum	Maximum
<b>Panel A: Total Sample</b>					
Total Assets(\$000)	1,500,050	4,424,570	124,554	1,087	33,927,000
Change in Cashflow Growth ·	0.7620	2.9284	0.7799	-13.8000	13.0326
Leverage Change ··	0.0663	0.9431	-0.0085	-1.9349	5.9238
Issue Size ···	0.8823	1.4980	0.2528	0.0251	10.0055
Price Discount ····	-0.1394	0.2244	-0.1327	-0.7520	0.7778
Runup ·····	0.0003	0.0053	0.0004	-0.0192	0.0175
<b>Panel B: Capital Expenditure</b>					
Total Assets(\$000)	671,000	1,890	85,677	1,087	7,660,000
Change in Cashflow Growth ·	1.7430	3.1657	0.8011	-0.7133	13.0326
Leverage Change ··	-0.0723	0.2543	-0.0245	-0.7125	0.2743
Issue Size ···	0.3784	0.3445	0.2480	0.1001	1.2183
Price Discount ····	-0.1181	0.1834	-0.1082	-0.3939	0.3710
Runup ·····	0.0000	0.0058	0.0000	-0.0095	0.0131
<b>Panel C: Debt Reduction</b>					
Total Assets(\$000)	903,000	1,840,000	95,930	2,513	6,120,000
Change in Cashflow Growth ·	0.6333	0.9042	0.8150	-2.3251	2.3455
Leverage Change ··	-0.1490	0.4689	-0.0194	-1.9349	0.2279
Issue Size ···	0.5067	0.5405	0.3046	0.0251	2.3081
Price Discount ····	-0.1976	0.1901	-0.1786	-0.7520	0.0968
Runup ·····	0.0003	0.0040	0.0012	-0.0069	0.0072
<b>Panel D: Mixed Uses</b>					
Total Assets(\$000)	1,760,000	3,860,000	264,000	4,911	18,900,000
Change in Cashflow Growth ·	0.0438	4.0925	0.6199	-13.8000	6.2577
Leverage Change ··	0.2060	1.2259	-0.0089	-0.6472	5.9238
Issue Size ···	1.7178	2.3626	0.5971	0.1001	10.0055
Price Discount ····	-0.1070	0.2174	-0.0826	-0.5238	0.2069
Runup ·····	0.0015	0.0060	0.0004	-0.0126	0.0175

TABLE 9 (continued)

Variable	Mean	Standard Deviation	Median	Minimum	Maximum
Panel E: Unknown Uses					
Total Assets(\$000)	2,310,000	7,270,000	87,173	2,373	33,900,000
Change in Cashflow Growth -	1.0920	1.4961	0.6784	-0.7553	6.3360
Leverage Change --	0.1813	1.1406	0.0359	-1.3630	4.5654
Issue Size ---	0.5616	0.6158	0.2502	0.0855	2.0917
Price Discount ----	-0.1301	0.2911	-0.1406	-0.6104	0.7778
Runup -----	-0.0010	0.0050	0.0001	-0.0192	0.0037

\* The change in cash flow growth rate is calculated as the arithmetic growth rate in cash flows from the announcement year to the following year divided by the arithmetic growth rate in cash flows from the preceding year to the announcement year, where cash flow is income before extraordinary items plus discontinued operations plus depreciation and amortization.

\*\* The change in leverage is measured by the difference between the net debt ratio after the offering and the average net debt ratio for the 5 years before the announcement of the offering. The net debt ratio is calculated as net debt divided by the sum of net debt and net worth. Net debt is total debt minus cash and cash equivalents.

\*\*\* Issue size is the planned number of shares issued divided by the total number of shares outstanding before the announcement.

\*\*\*\* Price discount is calculated as  $(p - p-1)/p-1$ , where  $p$  is the subscription price  $p-1$ , is the closing price of the stock on the trading day before the announcement day.

\*\*\*\*\* Runup is the average cumulative excess return over the period -60 days before the announcement through day -2.

**TABLE 10:** The spearman correlations between the cross-sectional regression variables, and the corresponding p-values (in parentheses) for their significance are presented below.

	LNA	CASHFLOW	LEV	SIZE	ANNDIS	RUNUP	D1	D2	D3	D4
LNA	1.0000 (0.0000)	0.0306 (0.7822)	0.1048 (0.3710)	0.0516 (0.6716)	0.1903 (0.0997)	-0.2336 (0.0267)	-0.1297 (0.2258)	-0.0637 (0.5509)	0.2402 (0.0226)	-0.0946 (0.3750)
CASHFLOW	0.0306 (0.7822)	1.0000 (0.0000)	-0.0369 (0.7566)	0.1039 (0.3957)	-0.1845 (0.1181)	0.0924 (0.4004)	0.0300 (0.7864)	-0.0265 (0.8100)	-0.0314 (0.7758)	-0.0170 (0.8776)
LEV	0.1048 (0.3710)	-0.0369 (0.7566)	1.0000 (0.0000)	-0.0970 (0.4610)	0.1590 (0.2134)	0.0716 (0.5417)	-0.0687 (0.5611)	-0.1139 (0.3304)	0.0078 (0.9468)	0.2138 (0.0655)
SIZE	0.0516 (0.6716)	0.1039 (0.3957)	-0.0970 (0.4610)	1.0000 (0.0000)	-0.2615 (0.0418)	-0.0618 (0.6062)	-0.1564 (0.1927)	-0.0228 (0.8491)	0.2494 (0.0346)	-0.1644 (0.1676)
ANNDIS	0.1903 (0.0997)	-0.1845 (0.1181)	0.1590 (0.2134)	-0.2615 (0.0418)	1.0000 (0.0000)	0.0033 (0.9776)	0.0725 (0.5338)	-0.1437 (0.2125)	0.1679 (0.1444)	-0.0386 (0.7387)
RUNUP	-0.2336 (0.0267)	0.0924 (0.4004)	0.0716 (0.5417)	-0.0618 (0.6062)	0.0033 (0.9776)	1.0000 (0.0000)	-0.0528 (0.6195)	0.0165 (0.8756)	0.1097 (0.2980)	-0.0770 (0.4655)
D1	-0.1297 (0.2258)	0.0300 (0.7864)	-0.0687 (0.5611)	-0.1564 (0.1927)	0.0725 (0.5338)	-0.0528 (0.6195)	1.0000 (0.0000)	-0.2686 (0.0100)	-0.3159 (0.0023)	-0.2608 (0.0125)
D2	-0.0637 (0.5509)	-0.0265 (0.8100)	-0.1139 (0.3304)	-0.0228 (0.8491)	-0.1437 (0.2125)	0.0165 (0.8756)	-0.2686 (0.0100)	1.0000 (0.0000)	-0.3917 (0.0001)	-0.3333 (0.0012)
D3	0.2402 (0.0226)	-0.0314 (0.7758)	0.0078 (0.9468)	0.2494 (0.0346)	0.1679 (0.1444)	0.1097 (0.2980)	-0.3159 (0.0023)	-0.3917 (0.0001)	1.0000 (0.0000)	-0.3917 (0.0001)
D4	-0.0946 (0.3750)	-0.0170 (0.8776)	0.2138 (0.0655)	-0.1644 (0.1676)	-0.0386 (0.7387)	-0.0770 (0.4655)	-0.2608 (0.0125)	-0.3333 (0.0012)	-0.3917 (0.0001)	1.0000 (0.0000)

**TABLE 10 (continued)**

- \* LNA is the log of total assets for the firms.
- \*\* Cash flow is the change in cash flow growth rate, calculated as the arithmetic growth in cash flow from the announcement year to the following year divided by the arithmetic growth rate in cash flows from the preceding year to the announcement year, where cash flow is income before extraordinary items plus discontinued operations plus depreciation and amortization.
- \*\*\* Lev is the change in leverage, measured by the difference between the net debt ratio after the offering and the average net debt ratio for the 5 years before the announcement of the offering. The net debt ratio is calculated as net debt divided by the sum of net debt and net worth. Net debt is total debt minus cash and cash equivalents.
- \*\*\*\* Issue size is the planned number of shares issued divided by the total number of shares outstanding before the announcement
- \*\*\*\*\* ANNDIS is the price discount calculated as  $(p - p-1)/p-1$ , where p is the subscription price and p-1 is the closing price of the stock on the trading day before the announcement day.
- \*\*\*\*\* Runup is the average cumulative excess return over the period -60 days through day -2 before the announcement.
- \$ D1=1 if the purpose of the offering is capital investment and zero otherwise, D2=1 if the purpose of the offering is debt reduction and zero otherwise, D3=1 if more than one purpose is stated for the offering and zero otherwise and D4=1 if no purpose is stated for the offering.

**TABLE 11:** The estimated coefficients and t-statistics (in parentheses) from the cross-sectional regressions of the 2-day cumulative excess returns for announcements of rights offerings on the log of total assets, change in cash flow growth  $\Delta$ , issue size  $\Delta$ , change in leverage  $\Delta$ , price discount  $\Delta$ , 3-month average cumulative excess return  $\Delta$  and indicators for the purpose of the offering  $\Delta$ , are reported below.

Model:  $RET = a_0 + a_1 LNA + a_2 CASHFLOW + a_3 SIZE + a_4 LEV + a_5 ANNDIS + a_6 RUNUP + a_7 D1 + a_8 D2 + a_9 D3 +$

a0	a1	a2	a3	a4	a5	a6	a7	a8	a9	N	R2 adj	F	p-value
0.0488 (0.40)	-0.0034 (-0.57)	0.017946 (2.81)***	-0.0273 (-1.70)*	0.0313 (1.72)*	0.1168 (1.49)	2.3257 (0.89)	0.0356 (0.88)	-0.0115 (-0.32)	-0.022 (-0.59)	49	0.2387	2.672	0.0161
0.0865 (0.74)	-0.0054 (-0.95)	0.019026 (3.09)***	-0.0333 (-2.33)**	0.033 (1.89)*	0.1142 (1.54)	1.8929 (0.75)				49	0.2559	3.751	0.0044
0.0386 (0.36)	-0.0038 (-0.71)	0.020458 (3.29)***	-0.0378 (-2.62)**	0.0429 (2.56)**						49	0.2314	4.612	0.0034
0.0696 (0.55)	-0.0035 (-0.58)	0.014717 (2.36)**	-0.0235 (-1.45)		0.1575 (2.06)**	2.5919 (0.97)	0.0266 (0.65)	-0.0247 (-0.70)	-0.034 (-0.903)	49	0.2016	2.515	0.0257
-0.0311 (-1.70)*		0.017051 (2.75)***	-0.0348 (-2.30)**							49	0.1508	5.261	0.0088
0.0873 (0.74)	-0.0062 (-1.07)	0.015851 (2.52)**		0.0288 (1.57)	0.1422 (1.86)*					49	0.1766	3.574	0.0131
-0.1986 (1.67)	-0.0098 (-1.66)		-0.0248 (-1.64)	0.0181 (0.99)	0.1473 (1.86)*					49	0.1118	2.511	0.0552

$\Delta$  The change in cash flow growth rate is calculated as the arithmetic growth in cash flow from the announcement year to the following year divided by the arithmetic growth rate in cash flows from the preceding year to the announcement year, where cash flow is income before extraordinary items plus discontinued operations plus depreciation and amortization.

$\Delta\Delta$  The change in leverage is measured by the difference between the net debt ratio after the offering and the average net debt ratio for the 5 years before the announcement of the offering. The net debt ratio is calculated as net debt divided by the sum of net debt and net worth. Net debt is total debt minus cash and cash equivalents.



**TABLE 11 (continued)**

\$\$\$ Issue size is the planned number of shares issued divided by the total number of shares outstanding before the announcement.  
\$\$\$\$ ANDIS is the price discount calculated as  $(p - p_{-1})/p_{-1}$ , where  $p$  is the subscription price  $p_{-1}$ , is the closing price of the stock on the trading day before the announcement day.  
\$\$\$\$\$ RUNUP is the average cumulative excess return over the period -60 days through day -2 before the announcement.  
\$\$\$\$\$\$ D1=1 if the purpose of the offering is capital investment and zero otherwise, D2=1 if the purpose of the offering is debt reduction and zero otherwise, D3=1 if more than one purpose is stated for the offering and zero otherwise and D4=1 if no purpose is stated for the offering.  
\* significant at 10% , \*\* significant at 5% and \*\*\* significant at 1%

**TABLE 12:** The estimated coefficients and t-statistics (in parentheses) from the cross-sectional regressions of the issue day abnormal returns for announcements of rights offerings on the log of total assets, issue size \$, price discount \$\$, and indicators for the purpose of the offering \$\$\$, are reported below.

Model:  $RET = a_0 + a_1 LNA + a_2 SIZE + a_3 OFFDIS + a_4 D1 + a_5 D2 + a_6 D3 + E_i$

a0	a1	a2	a3	a4	a5	a6	N	R2 adj	F	p-value
-0.1114 (-0.90)	0.0034 (0.55)	-0.0210 (-1.88)*	0.0274 (0.77)	0.0376 (0.85)	0.0112 (0.27)	0.0214 (0.55)	65	0.0374	1.4140	0.2248
-0.0296 (-1.82)*		-0.0209 (-2.01)**	0.0237 (0.69)				65	0.0834	3.9110	0.0250
-0.0438 (-2.93)***			0.0582 (1.9)*				65	0.0392	3.6090	0.0620

\$ Issue size is the planned number of shares issued divided by the total number of shares outstanding before the announcement.  
 \$\$ OFFDIS is the price discount calculated as  $(p - p_1)/p - 1$ , where p is the subscription price, and p-1 is the closing price of the stock on the trading day before the issue day.  
 \$\$\$ D1=1 if the purpose of the offering is capital investment and zero otherwise, D2=1 if the purpose of the offering is debt reduction and zero otherwise, D3=1 if more than one purpose is stated for the offering and zero otherwise and D4=1 if no purpose is stated for the offering.

\* significant at 10%, \*\* significant at 5% and \*\*\* significant at 1%

**TABLE 13:** The mean abnormal returns for the sample of 64 common shares for the event window consisting of the half-hour intervals [-19, +19] around the event date, and tests of their significance for model (2), are listed below.

Interval	Average Abnormal Return	Standard Error	t-test	p-value	Median	Sign test	p-value	Wilcoxon test	p-value	Negative Stock Returns %
-19	-0.0016	0.0032	-0.51	0.6125	0.0000	4.00	0.3817	-96.00	0.5251	43.75
-18	-0.0001	0.0011	-0.07	0.9418	0.0002	9.00	0.0328	208.00	0.1660	35.94
-17	-0.0019	0.0023	-0.84	0.4023	0.0001	8.00	0.0599	133.00	0.3779	37.50
-16	0.0000	0.0009	0.04	0.9668	0.0001	9.00	0.0328	215.00	0.1520	35.94
-15	0.0019	0.0008	2.25	0.0281	0.0002	14.00	0.0006	451.00	0.0020	28.13
-14	0.0005	0.0007	0.69	0.4919	0.0001	12.00	0.0037	346.00	0.0194	31.25
-13	0.0004	0.0007	0.55	0.5820	0.0001	11.00	0.0081	239.00	0.1106	32.81
-12	0.0003	0.0008	0.35	0.7245	0.0001	10.00	0.0169	242.00	0.1061	34.38
-11	-0.0018	0.0019	-0.98	0.3306	0.0002	12.00	0.0037	372.00	0.0117	31.25
-10	-0.0007	0.0007	-1.03	0.3075	0.0001	11.00	0.0081	222.00	0.1389	32.81
-9	0.0010	0.0006	1.65	0.1032	0.0001	11.00	0.0081	300.00	0.0439	32.81
-8	-0.0004	0.0005	-0.67	0.5049	0.0001	11.00	0.0081	295.00	0.0477	32.81
-7	-0.0001	0.0008	-0.17	0.8677	0.0001	8.00	0.0599	117.00	0.4383	37.50
-6	0.0005	0.0026	0.18	0.8577	0.0001	6.00	0.1686	37.00	0.8068	40.63
-5	-0.0014	0.0015	-0.90	0.3694	0.0001	9.00	0.0328	192.00	0.2015	35.94
-4	0.0023	0.0012	1.96	0.0543	0.0002	11.00	0.0081	310.00	0.0371	32.81
-3	-0.0006	0.0012	-0.46	0.6496	0.0001	7.00	0.1034	18.00	0.9053	39.06
-2	-0.0021	0.0013	-1.63	0.1080	0.0001	7.00	0.1034	-3.00	0.9842	39.06
-1	0.0009	0.0013	0.66	0.5115	0.0002	14.00	0.0006	394.00	0.0074	28.13
0	0.0003	0.0005	0.62	0.5399	0.0002	10.00	0.0169	247.00	0.0989	34.38
1	-0.0002	0.0005	-0.39	0.6971	0.0001	8.00	0.0599	135.00	0.3708	37.50
2	-0.0014	0.0009	-1.55	0.1260	0.0002	11.00	0.0081	230.00	0.1249	32.81
3	0.0004	0.0004	1.18	0.2413	0.0001	12.00	0.0037	331.00	0.0257	31.25
4	-0.0028	0.0017	-1.67	0.1003	0.0001	8.00	0.0599	113.00	0.4542	37.50
5	-0.0001	0.0009	-0.14	0.8855	0.0001	10.00	0.0169	247.00	0.0989	34.38
6	0.0017	0.0008	2.09	0.0403	0.0002	12.00	0.0037	390.00	0.0080	31.25
7	-0.0001	0.0025	-0.03	0.9768	0.0001	4.00	0.3817	-14.00	0.9263	43.75
8	0.0007	0.0008	0.80	0.4252	0.0001	12.00	0.0037	346.00	0.0194	31.25
9	-0.0017	0.0011	-1.61	0.1122	0.0001	9.00	0.0328	101.00	0.5037	35.94

TABLE 13 (continued)

Interval	Average		t-test	p-value	Median	Sign test	p-value	Wilcoxon test	p-value	Negative Stock Returns %
	Abnormal Return	Standard Error								
10	0.0000	0.0010	-0.03	0.9788	0.0001	9.00	0.0328	159.00	0.2912	35.94
11	0.0002	0.0007	0.29	0.7714	0.0001	11.00	0.0081	236.00	0.1152	32.81
12	-0.0009	0.0012	-0.76	0.4528	0.0001	11.00	0.0081	239.00	0.1106	32.81
13	0.0002	0.0005	0.47	0.6380	0.0001	11.00	0.0081	278.00	0.0625	32.81
14	0.0006	0.0007	0.83	0.4117	0.0001	12.00	0.0037	306.00	0.0397	31.25
15	0.0009	0.0009	0.95	0.3466	0.0001	13.00	0.0016	369.00	0.0124	29.69
16	0.0013	0.0011	1.21	0.2308	0.0001	12.00	0.0037	360.00	0.0149	31.25
17	-0.0013	0.0019	-0.67	0.5078	0.0002	15.00	0.0002	426.00	0.0036	26.56
18	0.0013	0.0006	2.06	0.0437	0.0002	13.00	0.0016	370.00	0.0122	29.69
19	-0.0020	0.0016	-1.28	0.2057	0.0001	12.00	0.0037	225.00	0.1335	31.25
[-19, +19]	-0.0001	0.0002	-0.64	0.5270	0.0001	2.00	0.7080	-52.00	0.7310	48.44
[-19, -7]	-0.0002	0.0003	-0.56	0.5803	0.0001	1.00	0.9007	-17.00	0.9105	46.88
[-6, +6]	-0.0002	0.0003	-0.69	0.4930	-0.0001	-2.00	0.7080	-110.00	0.4663	53.13
[+7, +19]	0.0000	0.0003	-0.12	0.9075	0.0002	3.00	0.5323	69.00	0.6481	45.31

**TABLE 14:** Descriptive statistics for the changes in the frequency of half-hour trades for the total sample of 64 common stocks in the pre, post and event periods and tests of their significance are reported below. The pre, event and post periods are [-136, -7], [-6, +6] and [+7, +136], respectively.

Period	Mean			Median			Minimum			Maximum			Standard Error			t-test			Sign test			Wilcoxon test		
	Mean	Median	Minimum	Maximum	Standard Error	t-test	p-value	Sign test	p-value	Wilcoxon test	p-value													
event-pre	0.1589	-0.0770	-3.7231	22.7769	0.3705	0.43	0.6695	-9.00	0.0300	-306.00	0.0307													
post-event	-0.2163	0.0347	-20.1461	7.0615	0.3953	-0.55	0.5861	7.00	0.1034	255.50	0.0876													
post-pre	-0.0575	0.0039	-23.8692	10.8000	0.4280	-0.13	0.8937	1.50	0.7882	87.00	0.5365													
event day - previous day	0.5421	0.0000	-1.2308	18.7693	0.3675	1.47	0.1452	4.00	0.3222	141.50	0.1742													
subsequent day - event day	-0.6695	0.0000	-22.9231	1.3077	0.4858	-1.38	0.1731	-1.50	0.7914	-56.00	0.6602													
subsequent day - previous day	-0.1274	0.0000	-7.0000	1.6154	0.1454	-0.88	0.3842	2.00	0.6889	57.50	0.6429													

**TABLE 15:** Descriptive statistics for the changes in trading volume for the total sample of 64 common stocks, in the pre, post and event periods and tests of their significance are reported below. The pre, event and post periods are [-136, -7], [-6, +6] and [+7, +136], respectively.

Period	Mean	Median	Minimum	Maximum	Standard Error	t-test	p-value	Sign test	p-value	Wilcoxon test	p-value
event-pre	-361.8584	-152.4300	-24144.5000	32548.4800	758.6698	-0.48	0.6350	-13.50	0.0009	-354.00	0.0141
post-event	890.1403	90.9500	-16064.0000	23223.9800	593.0292	1.50	0.1383	15.00	0.0002	417.00	0.0044
post-pre	528.2819	30.1150	-40208.4000	55772.8200	1161.1100	0.45	0.6507	5.00	0.2604	128.00	0.3962
event day - previous day	-1601.0700	0.0000	-82887.2000	8031.4600	1385.2000	0.78	0.2521	-2.50	0.5901	-47.00	0.6975
subsequent day - event day	603.4266	-3.8450	-6904.6100	38929.8400	776.8044	-0.63	0.4402	-3.00	0.5118	-121.00	0.3533
subsequent day - previous day	-997.6445	0.0000	-80144.0000	46460.9200	1589.8900	-1.16	0.5326	0.00	1.0000	-53.50	0.6824

**TABLE 16:** Descriptive statistics for the changes in the trading value during the half-hour intervals for the total sample of 64 common stocks in the pre, post and event periods and tests of their significance are reported below. The pre, event and post periods are [-136, -7], [-6, +6] and [+7, +136], respectively.

Period	Mean	Median	Minimum	Maximum	Standard Error		t-test		Sign		Wilcoxon test	
					Error	p-value	t-test	p-value	test	p-value	test	p-value
event-pre	1806.1400	281.3150	-166312.0000	280718.6000	5446.6300	0.33	0.7413	-12.50	0.0022	-370.00	0.0102	
post-event	2354.5100	254.3400	-115027.0000	181958.6000	3855.0400	0.61	0.5436	16.00	0.0001	438.00	0.0027	
post-pre	4160.6500	125.1350	-281339.0000	462677.2000	8613.9400	0.48	0.6308	5.00	0.2604	147.00	0.3295	
event day - previous day	-12592.2500	0.0000	-852656.0000	71448.0800	13556.3700	-0.93	0.3565	-2.50	0.5901	-35.00	0.7723	
subsequent day - event day	2098.7900	-13.2700	-68663.6000	158955.1000	3206.8600	0.65	0.5152	-3.00	0.5118	-72.50	0.5790	
subsequent day - previous day	-10493.4600	0.0000	-838427.0000	188863.8000	13602.0800	-0.77	0.4433	0.00	1.0000	2.50	0.9848	

**TABLE 17:** Descriptive statistics for the changes in the conditional variance of the half-hour returns for total sample of 64 common stocks in the pre, post and event periods and tests of their significance are reported below. The pre, event and post periods are [-136, -7], [-6, +6] and [+7, +136], respectively.

Period	Mean			Median			Minimum			Maximum			Standard Error			t-test			Sign test			Wilcoxon test		
	Mean	Median	Minimum	Maximum	Mean	Median	Minimum	Maximum	Standard Error	t-test	p-value	Sign test	p-value	Wilcoxon test	p-value									
event-pre	-0.0003	0.0000	-0.0136	0.0010	0.0002	-1.54	0.2850	-17.00	0.0001	0.0001	0.0001	-564.50	0.0001											
post-event	0.0005	0.0001	-0.0012	0.0256	0.0004	1.24	0.2186	11.00	0.0081	0.0081	429.50	0.0033												
post-pre	0.0002	0.0000	-0.0013	0.0120	0.0002	0.87	0.3888	-2.00	0.7035	0.7035	-64.00	0.6573												
event day - previous day	-0.0001	0.0000	-0.0030	0.0014	0.0001	-0.81	0.4185	2.50	0.6029	0.6029	55.00	0.6817												
subsequent day - event day	0.0004	0.0000	-0.0014	0.0239	0.0004	1.16	0.2506	-1.50	0.7982	0.7982	121.00	0.3892												
subsequent day - previous day	0.0004	-0.0030	0.0241	0.0000	0.0004	1.00	0.3218	5.50	0.2000	0.2000	195.50	0.1620												



**TABLE 18: Descriptive statistics for the changes in the relative liquidity premium for the sample of common stocks in the pre, post and event periods and tests of their significance are reported below. The pre, event and post periods are [-136, -7], [-6, +6] and [+7, +136], respectively.**

Period	N	Mean	Median	Minimum	Maximum	Standard Error		t-test		Sign test		Wilcoxon test	
						Maximum	Minimum	t-test	p-value	test	p-value	test	p-value
event-pre	51	-0.0010	-0.0018	-0.0343	0.0251	0.0014	0.0014	-0.75	0.4539	-8.50	0.0241	-163.00	0.1278
post-event	51	9.3333	0.0005	-0.0291	0.0190	0.0011	0.0011	0.01	0.9935	4.00	0.3222	84.50	0.4202
post-pre	63	0.0039	-0.0005	-0.0343	0.1801	0.0040	0.0040	0.96	0.3428	-3.50	0.4500	-160.00	0.2768
event day - previous day	46	0.0015	0.0001	-0.0294	0.0435	0.0018	0.0018	0.84	0.4060	1.50	0.7660	61.50	0.4937
subsequent day - event day	46	-0.0002	0.0000	-0.0404	0.0430	0.0018	0.0018	-0.11	0.9094	0.00	1.0000	10.50	0.8974
subsequent day - previous day	46	0.0012	0.0000	-0.0259	0.0382	0.0018	0.0018	0.66	0.5100	0.00	1.0000	45.00	0.6052

The number of common stocks (N) is not equal to 64 because of missing data.

**TABLE 19:** Descriptive statistics for the changes in relative bid/task spreads at the end of half-hour intervals for the total sample of 64 common stocks in the pre, post and event periods and tests of their significance are reported below. The pre, event and post periods are [-136, -7], [-6, +6] and [+7, +136], respectively.

Period	Mean			Median			Minimum			Maximum			Standard Error			t-test		p-value		Sign test		Wilcoxon test		p-value			
event-pre	-0.0026	-0.0031	-0.0790	0.2618	0.0053	-0.49	0.6247	-11.00	0.0081	-380.00	0.0089																
post-event	0.0008	0.0000	-0.1404	0.0587	0.0032	0.25	0.8033	1.00	0.8991	108.50	0.4513																
post-pre	-0.0018	-0.0021	-0.0919	0.1214	0.0037	-0.49	0.6263	-6.00	0.1686	-275.00	0.0655																
event day - previous day	-0.0045	-0.0007	-0.1170	0.0709	0.0030	-1.48	0.1436	-7.50	0.0534	-153.50	0.1765																
subsequent day - event day	0.0025	-0.0517	0.0660	0.0430	0.0023	1.06	0.2924	-1.00	0.8899	33.00	0.7670																
subsequent day - previous day	-0.0020	-0.0009	-0.1170	0.1062	0.0037	-0.55	0.5658	-5.00	0.2288	-49.50	0.6902																

**TABLE 20:** Descriptive statistics for the changes in trade depth (in board lots) for the half-hour intervals for the sample of common stocks in the pre, post and event periods and tests of their significance are reported below. The pre, event and post periods are [-136, -7], [-6, +6] and [+7, +136], respectively.

Period	N	Mean	Median	Minimum	Maximum	Standard Error		t-test		Sign test		Wilcoxon test	
						Error	t-test	p-value	test	p-value	test	p-value	
event-pre	63	-18.6437	2.4770	-555.0110	15361.8000	13.7308	-1.36	0.1795	2.50	0.6147	56.00	0.7047	
post-event	63	21.3497	-2.0820	-236.8670	76341.5000	16.7896	1.27	0.2083	-6.50	0.1299	-73.00	0.6211	
post-pre	64	2.8933	-0.5490	-107.8980	22601.9000	5.5155	0.52	0.6017	-1.00	0.9007	-19.00	0.9001	
event day - previous day	63	-18.2466	0.0000	-890.2310	118.4440	15.7161	-1.16	0.2501	-2.00	0.6889	-11.50	0.9263	
subsequent day - event day	63	22.7215	-0.5750	-242.9090	644.7690	15.2124	1.49	0.1403	-5.50	0.1925	-55.00	0.6817	
subsequent day - previous day	64	4.1446	0.9500	-301.3090	282.0770	10.2214	0.41	0.6865	1.50	0.7982	82.00	0.5602	

**TABLE 21: Descriptive statistics for the changes in trade direction for the half-hour intervals for the total sample of 64 common stocks in the pre, post and event periods and tests of their significance are reported below. The pre, event and post periods are [-136, -7], [-6, +6] and [+7, +136], respectively.**

Period	Standard Error				Sign		Wilcoxon				
	Mean	Median	Minimum	Maximum	t-test	p-value	test	p-value			
Panel A: Trades at the bid											
event-pre	-0.0160	-0.9154	-0.0308	1.8077	0.0488	-0.33	0.7445	-10.50	0.0099	-240.50	0.0840
post-event	-0.1641	0.0077	-13.7692	1.7308	0.2215	-0.74	0.4616	3.50	0.4350	39.50	0.7684
post-pre	-0.1801	0.0000	-14.6846	1.3692	0.2341	-0.77	0.4447	1.50	0.7948	18.50	0.8903
event day - previous day	0.1599	0.0000	-2.5385	9.0000	0.1542	1.04	0.3039	2.50	0.5601	73.50	0.4424
subsequent day - event day	-0.3113	0.0000	-18.5385	2.4616	0.2934	-1.06	0.2927	-6.50	0.0725	-185.50	0.0346
subsequent day - previous day	-0.1514	0.0000	-9.5385	1.9231	0.1568	-0.97	0.3377	-1.50	0.7660	-56.00	0.5331
Panel B: Trades at a price greater than the bid but less than the mid-spread											
event-pre	0.0237	0.0000	-0.2846	0.7077	0.0171	1.39	0.1701	-2.50	0.5424	66.00	0.4316
post-event	-0.0195	0.0000	-0.7846	0.4615	0.1807	-1.08	0.2853	4.50	0.2430	-32.00	0.7387
post-pre	0.0042	0.0000	-0.2308	0.4000	0.0112	0.38	0.7086	0.50	1.0000	-0.50	0.9956
event day - previous day	0.0216	0.0000	-0.6154	0.6154	0.0192	1.13	0.2639	2.50	0.4049	44.50	0.1789
subsequent day - event day	-0.0361	0.0000	-0.8462	0.2308	0.0166	-2.17	0.0337	-6.50	0.0106	-74.50	0.0185
subsequent day - previous day	-0.0144	0.0000	-0.6154	0.5385	0.0177	-0.81	0.4185	-3.50	0.2100	-30.00	0.3681
Panel C: Trades at the mid-spread											
event-pre	0.0173	0.0000	-0.3462	1.0077	0.0234	0.74	0.4621	-11.00	0.0013	-116.50	0.1758
post-event	-0.0191	0.0000	-1.5308	0.3539	0.0290	-0.66	0.5124	8.50	0.0137	92.00	0.2714
post-pre	-0.0018	0.0000	-0.5231	0.2231	0.0122	-0.15	0.8827	2.00	0.6587	77.50	0.4029
event day - previous day	0.0457	0.0000	-0.2308	1.2308	0.0270	1.69	0.0959	0.50	1.0000	35.50	0.1570
subsequent day - event day	-0.0421	0.0000	-1.5385	0.4615	0.0331	-1.27	0.2082	0.50	1.0000	-23.50	0.4851
subsequent day - previous day	0.0036	0.0000	-0.3846	0.3846	0.0164	0.22	0.8265	-1.00	0.8388	-6.00	0.8673

TABLE 21 (continued)

Period	Mean	Median	Minimum	Maximum	Standard Error	t-test	p-value	Sign test	Wilcoxon test	p-value	
Panel D: Trades at a price greater than the mid-spread but less than the ask											
event-pre	0.0052	-0.0038	-0.1308	0.3539	0.0101	0.51	0.6115	-11.00	0.0009	-114.50	0.1539
post-event	-0.0046	0.0038	-0.3846	0.3539	0.0127	-0.36	0.7200	10.00	0.0037	95.00	0.2718
post-pre	0.0006	0.0000	-0.2769	0.2462	0.0085	0.07	0.9440	-0.50	1.0000	-5.50	0.9570
event day - previous day	0.0228	0.0000	-0.1539	0.3846	0.0164	0.22	0.0407	3.00	0.1796	35.50	0.0228
subsequent day - event day	-0.0084	0.0000	-0.3846	0.7692	0.0109	2.09	0.6270	-2.00	0.4807	-24.50	0.2957
subsequent day - previous day	0.0144	0.0000	-0.2308	0.9231	0.0172	-0.49	0.3882	0.00	1.0000	8.50	0.6294
Panel E: Trades at the ask											
event-pre	0.1287	-0.0462	-3.0846	20.2000	0.3255	0.40	0.6938	-13.00	0.0011	-436.50	0.0009
post-event	-0.0092	0.0347	-9.3231	5.2769	0.2016	-0.05	0.9636	16.00	0.0001	430.00	0.0005
post-pre	0.1195	-9.0539	0.0000	10.8789	0.2319	0.52	0.6082	0.00	1.0000	84.50	0.5384
event day - previous day	0.2921	0.0000	-4.6154	20.0770	0.3315	0.88	0.3817	-0.50	1.0000	-16.00	0.8587
subsequent day - event day	-0.2716	0.0000	-23.8462	1.6923	0.3788	-0.72	0.4760	4.00	0.2559	103.50	0.1350
subsequent day - previous day	0.0204	0.0000	-3.7692	2.6154	0.0887	0.21	0.8367	1.50	0.7608	64.00	0.4448

**TABLE 22:** Descriptive statistics for the intraday indicators for the total sample of 64 common stocks for different half-hour intervals are reported below.

Indicator	Period	N	Mean	St. Deviation	Minimum	Median	Maximum
Frequency of trades	pre-event	64	2.6416	10.6774	0.0000	0.4923	76.8769
	event day	64	2.8005	11.8792	0.0000	0.4231	73.1538
	post-event	64	2.5841	9.0656	0.0077	0.4267	53.0077
	[-136, +136]	64	2.6218	9.8519	0.0110	0.5000	65.3333
	[-6, +6]	64	2.8005	11.8792	0.0000	0.4231	73.1538
	[-19, +7]	64	2.2584	9.0998	0.0000	0.3077	59.1539
	[+7, +19]	64	2.1310	8.0883	0.0000	0.3077	52.1538
Volume of trades	pre-event	64	2.3966	9.6777	0.0000	0.4103	61.4872
	event day	64	4514.7500	14093.0000	0.0000	681.1350	94657.3000
	post-event	64	4152.8900	14569.0700	0.0000	405.7700	94152.1500
	[-136, +136]	64	5043.0300	16113.6100	0.7700	614.9600	117376.1300
	[-6, +6]	64	4749.0800	14401.9500	4.0293	972.1500	89711.7400
	[-19, +7]	64	4152.8900	14569.0700	0.0000	405.7690	94152.1500
	[+7, +19]	64	5753.9700	23561.7000	0.0000	357.6920	177039.4000
Trade Value (\$)	pre-event	64	4756.3200	15996.8300	0.0000	267.0000	96895.3800
	event day	64	4887.7300	17469.7700	0.0000	407.0640	122695.6000
	post-event	64	26971.2800	118321.4100	0.0000	2287.9400	736974.6000
	[-136, +136]	64	28777.4200	131460.4100	0.0000	880.7650	894305.4000
	[-6, +6]	64	31131.9300	144824.3300	0.2900	1724.0900	1076264.0000
	[-19, +7]	64	29033.3700	127812.4000	15.1648	2177.2300	847276.7000
	[+7, +19]	64	28777.4200	131460.4000	0.0000	880.7700	894305.3900
	pre-event	64	41369.6700	226795.9000	0.0000	885.3800	1746961.0000
	event day	64	30876.2100	132883.4700	0.0000	597.8600	908534.5100
	post-event	64	33674.4300	161543.9000	0.0000	961.8600	1183267.0000
	[-136, +136]	64	33674.4300	161543.9000	0.0000	961.8600	1183267.0000

TABLE 22 (continued)

Indicator	Period	N	Mean	St. Deviation	Minimum	Median	Maximum
Conditional variance	pre-event	64	0.0005	0.0017	0.0000	0.0002	0.0138
	event day	64	0.0002	0.0003	0.0000	0.0001	0.0014
	post-event	64	0.0007	0.0032	0.0000	0.0001	0.0257
	[-136, +136]	64	0.0006	0.0023	0.0000	0.0002	0.0188
	[-6, +6]	64	0.0002	0.0003	0.0000	0.0001	0.0014
	[-19, +7]	64	0.0002	0.0005	0.0000	0.0000	0.0030
	[+7, +19]	64	0.0006	0.0030	0.0000	0.0001	0.0241
	[-19, +19]	64	0.0003	0.0010	0.0000	0.0001	0.0081
Relative liquidity premium	pre-event	63	0.0257	0.0318	0.0026	0.0148	0.2193
	event day	51	0.0163	0.0135	0.0012	0.0117	0.0667
	post-event	64	0.0300	0.0571	0.0027	0.0146	0.3994
	[-136, +136]	64	0.0267	0.0385	0.0026	0.0146	0.2828
	[-6, +6]	51	0.0163	0.0135	0.0012	0.0117	0.0667
	[-19, +7]	50	0.0172	0.0225	0.0000	0.0111	0.1304
	[+7, +19]	53	0.0255	0.0630	0.0000	0.0108	0.4615
	[-19, +19]	61	0.0289	0.0605	0.0025	0.0153	0.4615
Relative Spread	pre-event	64	0.0671	0.0912	0.0062	0.0390	0.6612
	event day	64	0.0644	0.1198	0.0066	0.0323	0.9230
	post-event	64	0.0652	0.1039	0.0066	0.0369	0.7826
	[-136, +136]	64	0.0661	0.0976	0.0064	0.0356	0.7315
	[-6, +6]	64	0.0644	0.1198	0.0066	0.0323	0.9230
	[-19, +7]	64	0.0689	0.1339	0.0089	0.0319	1.0400
	[+7, +19]	64	0.0669	0.1201	0.0060	0.0386	0.9230
	[-19, +19]	64	0.0667	0.1239	0.0074	0.0348	0.9620
Trade Depth (in borad lots)	pre-event	64	-9.1292	36.3546	-200.0660	-2.9670	57.3820
	event day	63	-28.1131	128.8869	-7.5508	0.8890	211.0000
	post-event	64	-62.3588	45.4957	-172.9110	-3.9595	238.8000
	[-136, +136]	64	-8.7339	36.2167	-215.0850	-3.8822	95.4244
	[-6, +6]	63	-28.1131	128.8870	-755.0769	0.8889	211.0000
	[-19, +7]	64	-8.9780	0.6325	-303.0000	-2.6667	156.1000
	[+7, +19]	64	-4.8333	0.6715	-331.9091	-1.3333	287.0000
	[-19, +19]	64	-14.7443	0.6476	-303.2820	-0.3214	160.2222

TABLE 22 (continued)

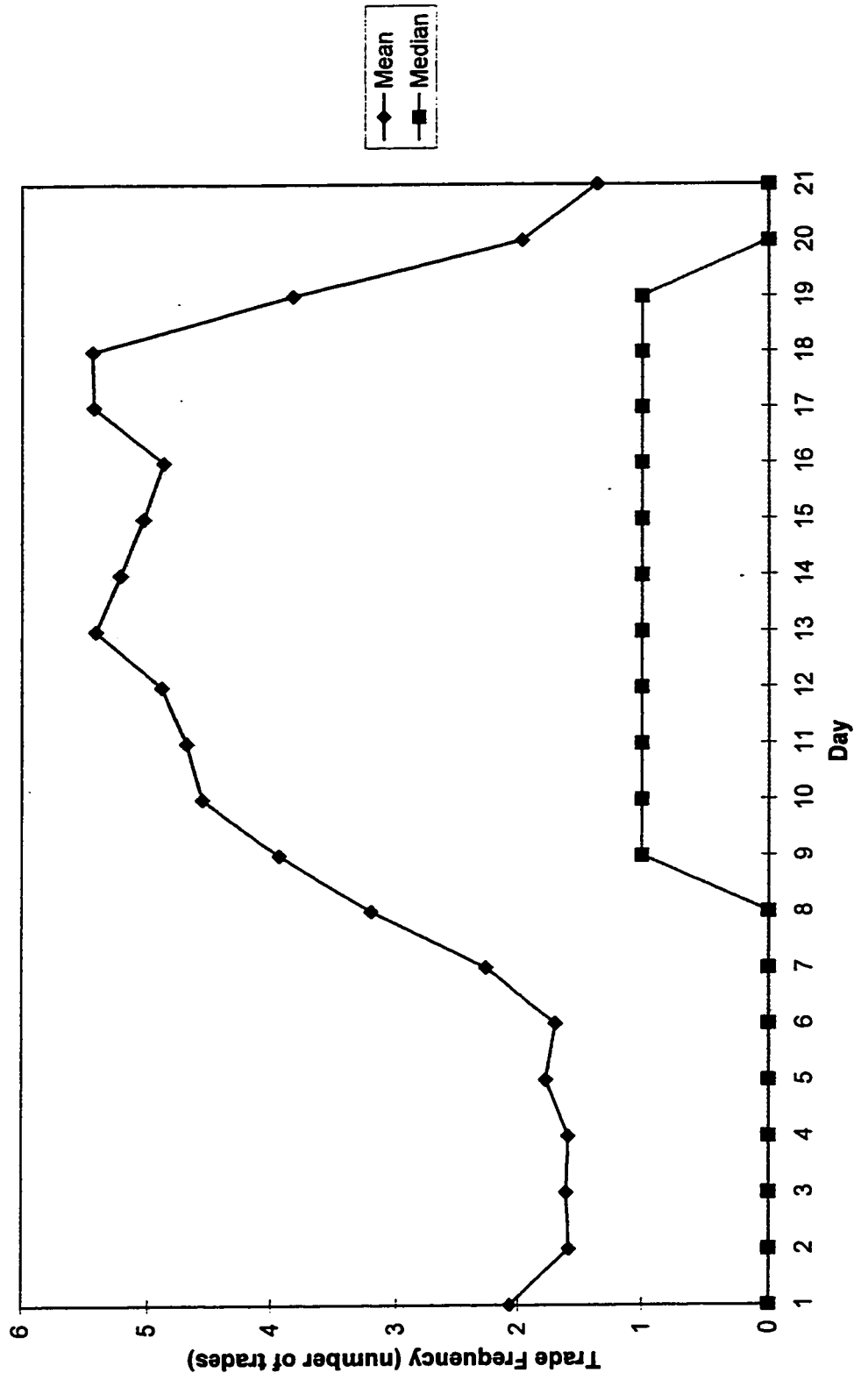
Indicator	Period	N	Mean	St. Deviation	Minimum	Median	Maximum
Number of trades at bid	pre-event	64	0.9499	3.4466	0.0000	0.2154	24.5308
	event day	64	0.9339	3.4659	0.0000	0.2308	23.6154
	post-event	64	0.7698	2.1261	0.0000	0.1923	14.0308
	[-136, +136]	64	0.8634	2.7407	0.0000	0.1886	17.4945
	[-6, +6]	64	0.9339	3.4659	0.0000	0.2308	23.6154
	[-19, +7]	64	0.7740	2.8261	0.0000	0.0769	17.6923
	[+7, +19]	64	0.6226	2.2914	0.0000	0.1539	17.6154
	[-19, +19]	64	0.7768	2.7314	0.0000	0.2051	16.8205
Number of trades at prices greater than bid and less mid-spread	pre-event	64	0.0424	0.0656	0.0000	0.0154	0.2846
	event day	64	0.0661	0.1417	0.0000	0.0000	0.8462
	post-event	64	0.0466	0.0942	0.0000	0.0231	0.5365
	[-136, +136]	64	0.0456	0.0671	0.0000	0.0220	0.3370
	[-6, +6]	64	0.0661	0.1417	0.0000	0.0000	0.8462
	[-19, +7]	64	0.0445	0.1051	0.0000	0.0000	0.6154
	[+7, +19]	64	0.0300	0.0965	0.0000	0.0000	0.6154
	[-19, +19]	64	0.0469	0.0817	0.0000	0.0000	0.3846
Number of trades at mid-spread	pre-event	64	0.0812	0.1542	0.0000	0.0115	0.9154
	event day	64	0.0986	0.2922	0.0000	0.0000	1.9231
	post-event	64	0.0794	0.1191	0.0000	0.0231	0.6231
	[-136, +136]	64	0.0812	0.1341	0.0000	0.0165	0.7143
	[-6, +6]	64	0.0986	0.2922	0.0000	0.0000	1.9231
	[-19, +7]	64	0.0529	0.1154	0.0000	0.0000	0.6923
	[+7, +19]	64	0.0565	0.1212	0.0000	0.0000	0.5385
	[-19, +19]	64	0.0693	0.1514	0.0000	0.0000	1.0000



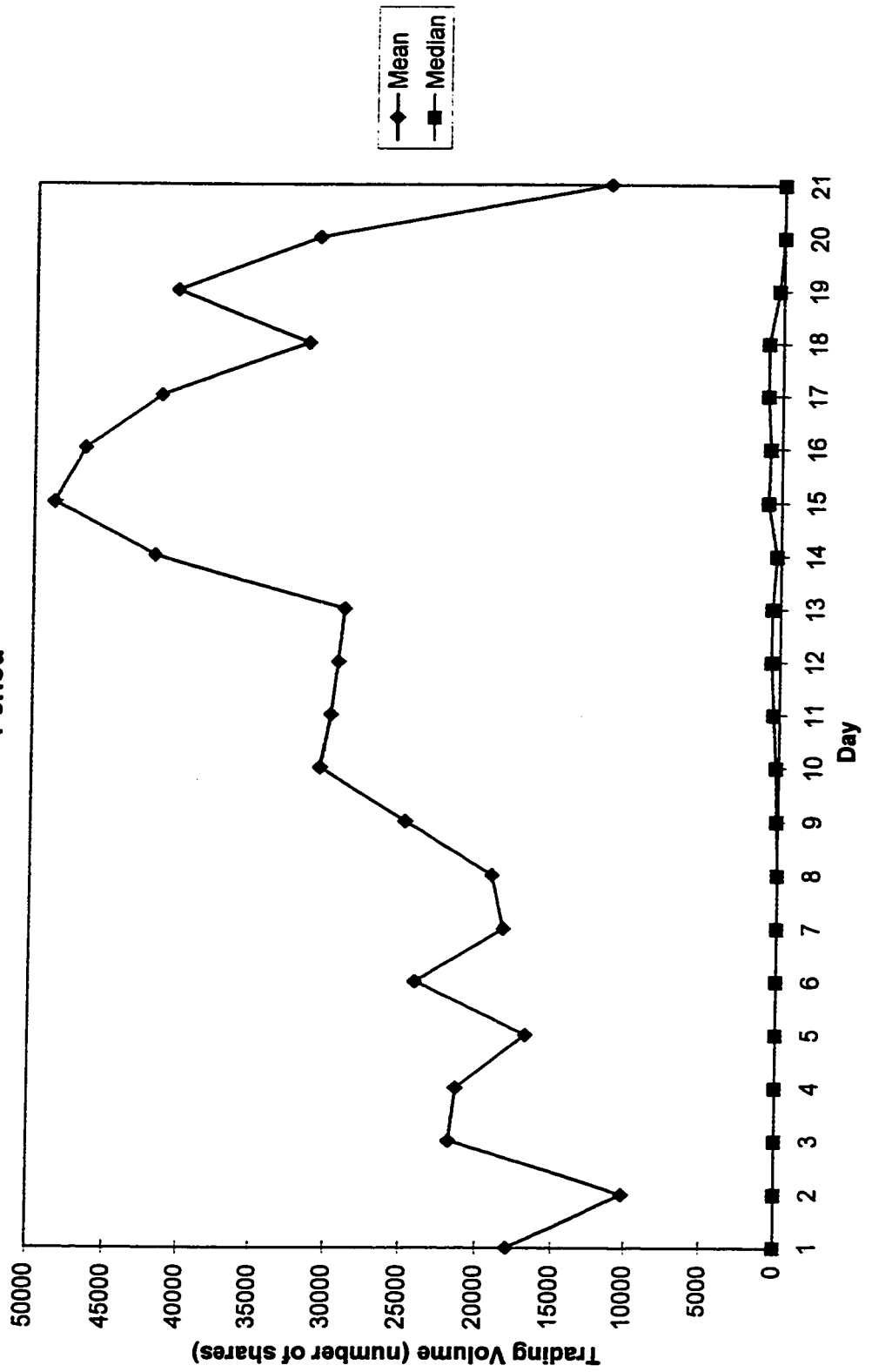
TABLE 22 (continued)

Indicator	Period	N	Mean	St. Deviation	Minimum	Median	Maximum
Number of trades at prices greater than mid-spread and less than ask	pre-event	64	0.0345	0.0547	0.0000	0.0154	0.3154
	event day	64	0.0397	0.0929	0.0000	0.0000	0.3846
	post-event	64	0.0351	0.0704	0.0000	0.0154	0.3923
	[-136, +136]	64	0.0350	0.0526	0.0000	0.0165	0.2711
	[-6, +6]	64	0.0397	0.0929	0.0000	0.0000	0.3846
	[-19, +7]	64	0.0168	0.0503	0.0000	0.0000	0.3077
	[+7, +19]	64	0.0313	0.1239	0.0000	0.0000	0.9231
	[-19, +19]	64	0.0292	0.0626	0.0000	0.0000	0.3590
Number of trades at ask	pre-event	64	1.5335	7.1629	0.0000	0.1615	52.0077
	event day	64	1.6623	8.2860	0.0000	0.1615	48.9231
	post-event	64	1.6530	6.9679	0.0000	0.0769	42.9538
	[-136, +136]	64	1.5966	7.0589	0.0000	0.1813	47.5495
	[-6, +6]	64	1.6623	8.2860	0.0000	0.0769	48.9231
	[-19, +7]	64	1.3702	6.3606	0.0000	0.0769	44.3846
	[+7, +19]	64	1.3906	6.4148	0.0000	0.1154	47.5769
	[-19, +19]	64	1.4744	6.9439	0.0000	0.1154	46.7692

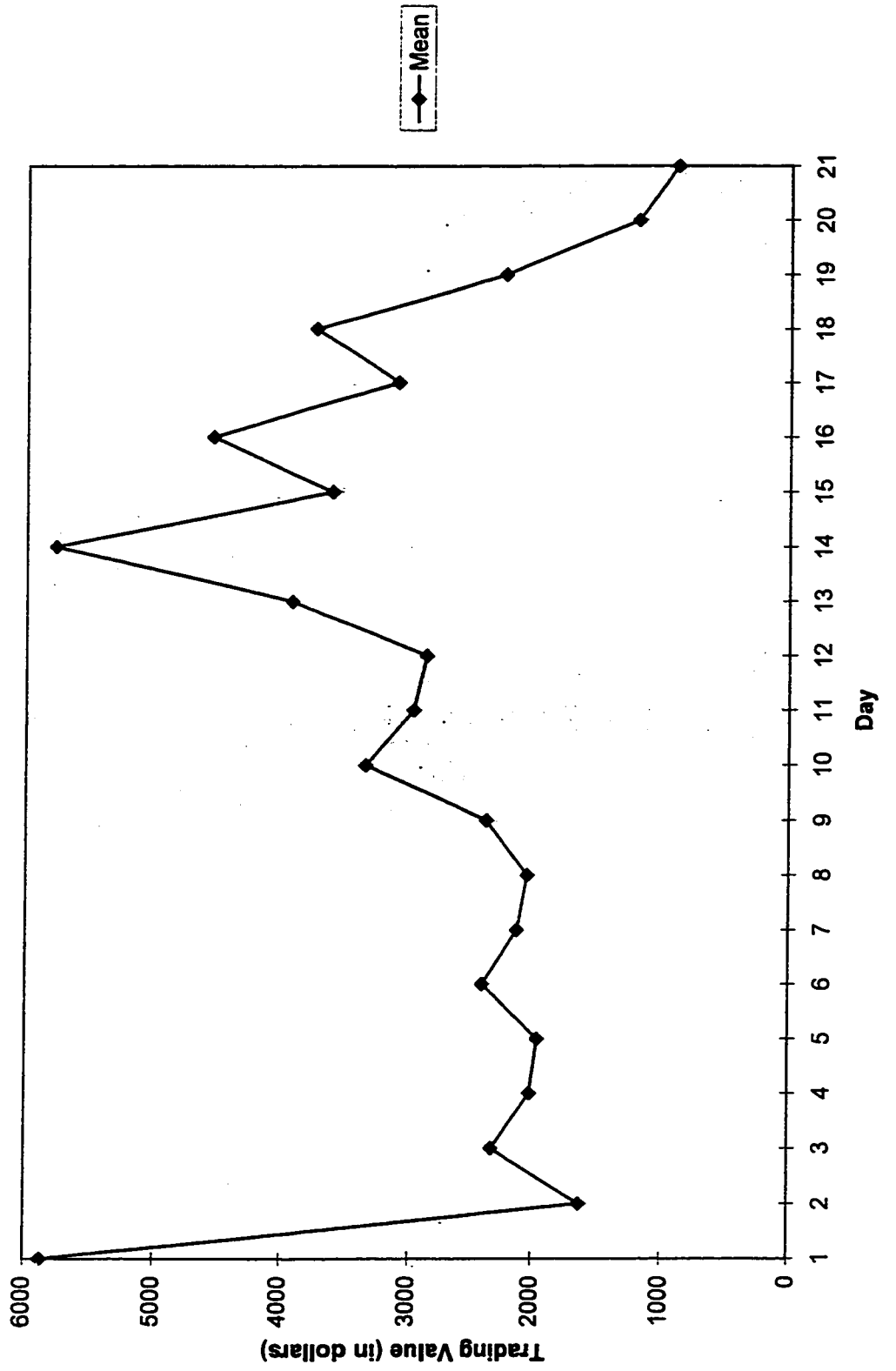
**Figure 6**  
**Plot of the Mean and Median Trade Frequencies for the 64 Rights Over 21-Day**  
**Period**



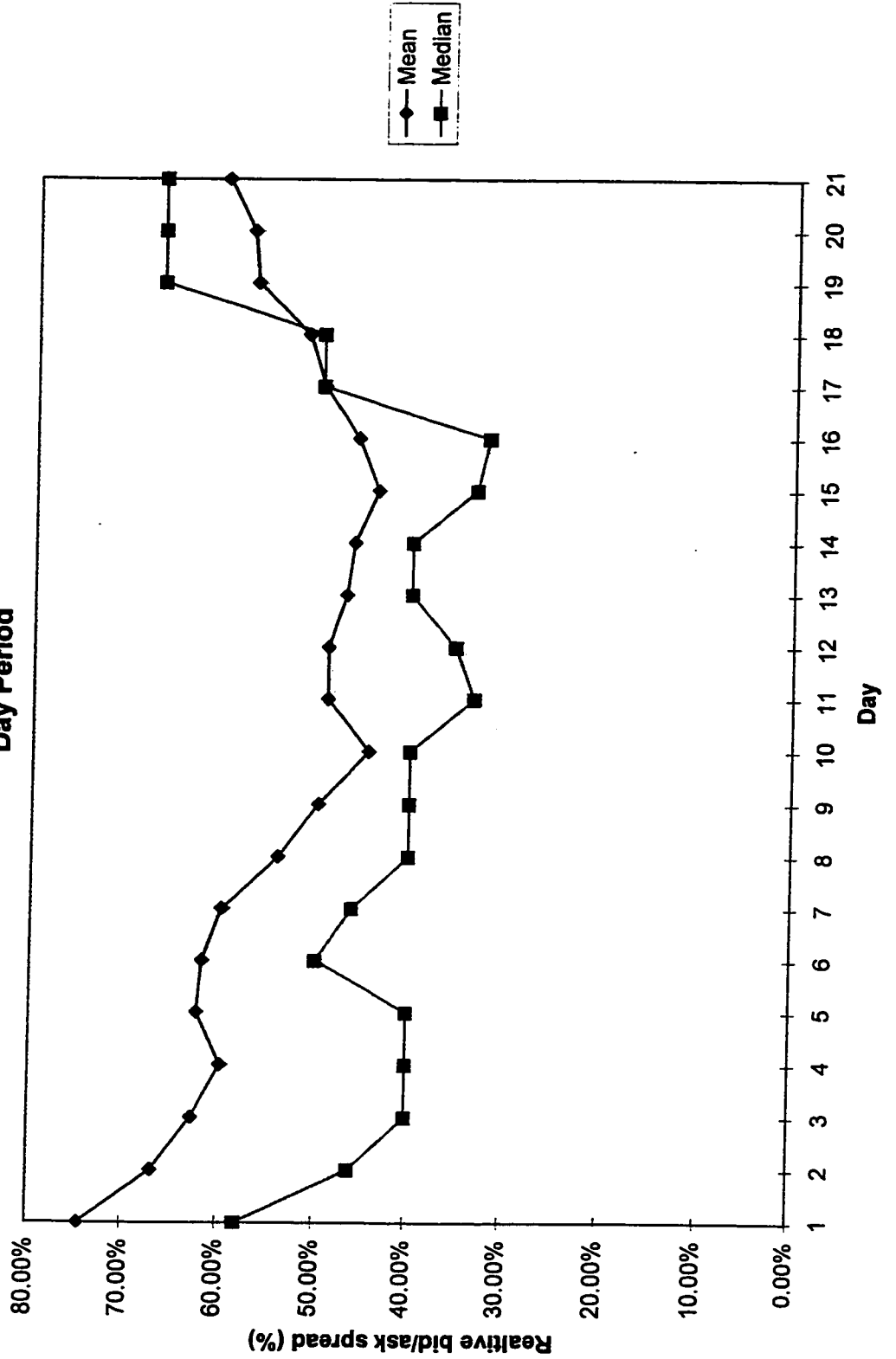
**Figure 7**  
**Plot of the Mean and Median Trading Volume for the 64 Rights Over the 21-Day Period**



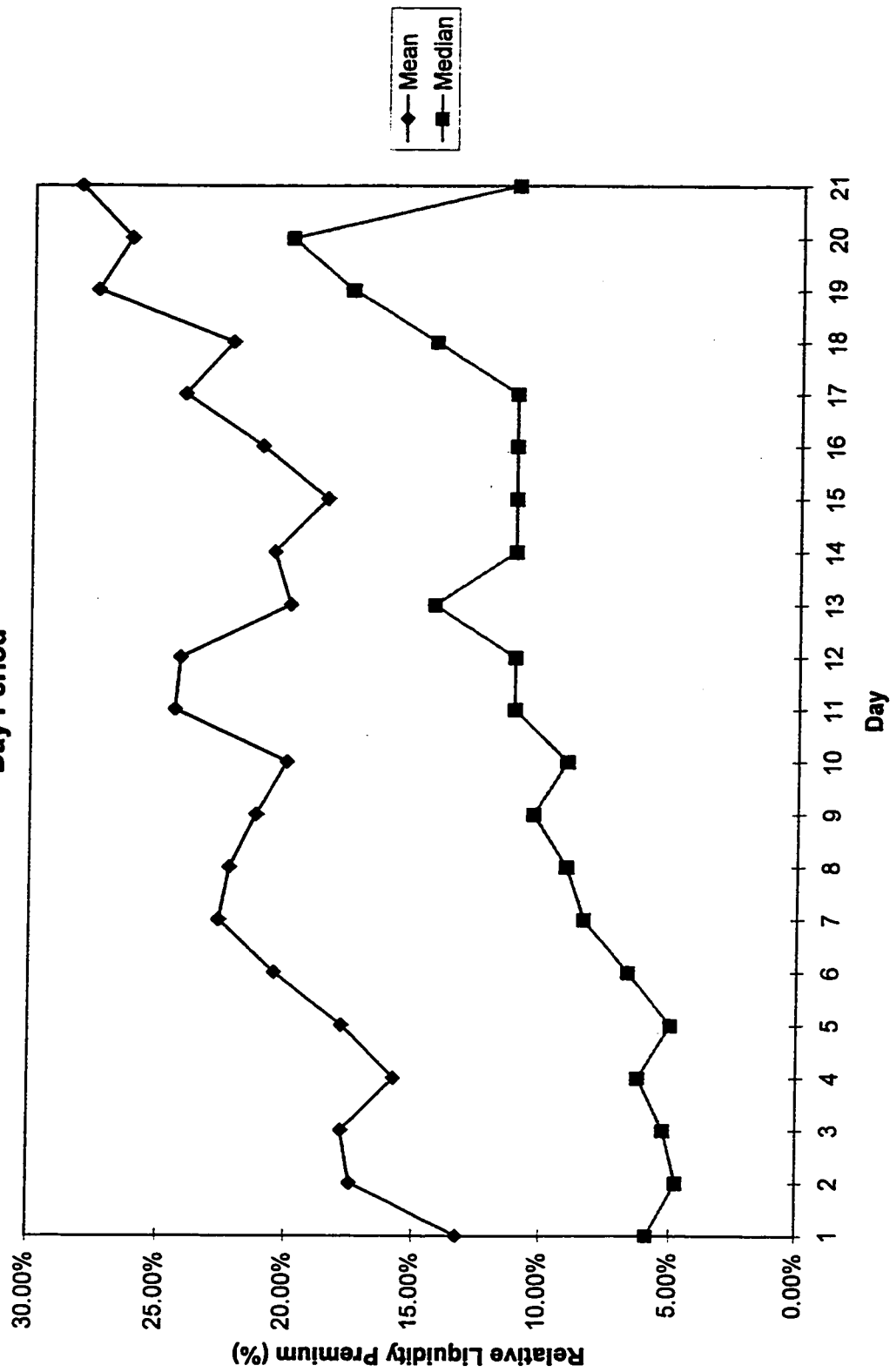
**Figure 8**  
**Plot of the Mean Trading Value for the 64 Rights Over the 21-Day Period**



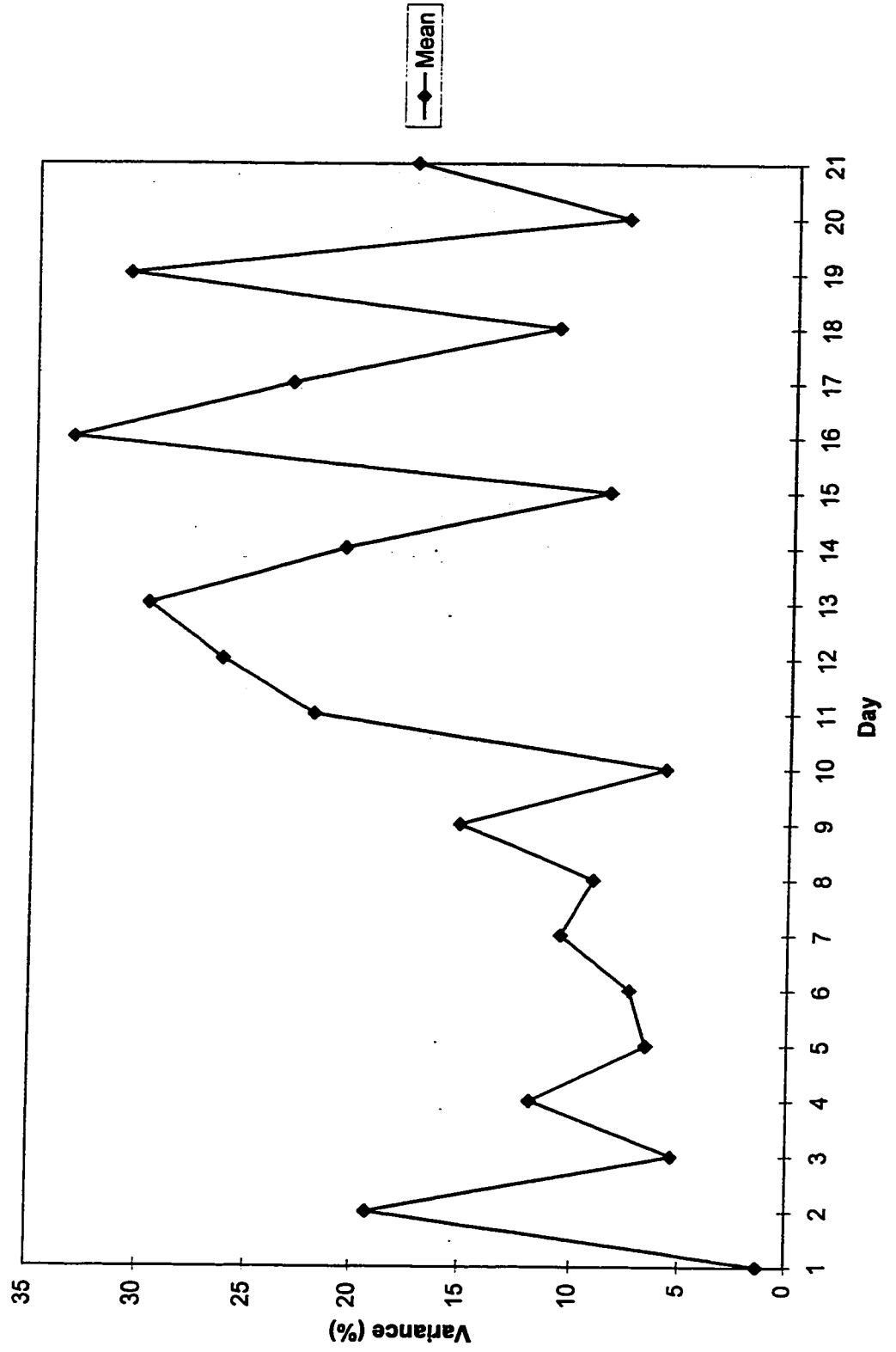
**Figure 9**  
**Plot of the Mean and Median Relative Bid/Ask Spreads for the 64 Rights Over the 21 Day Period**



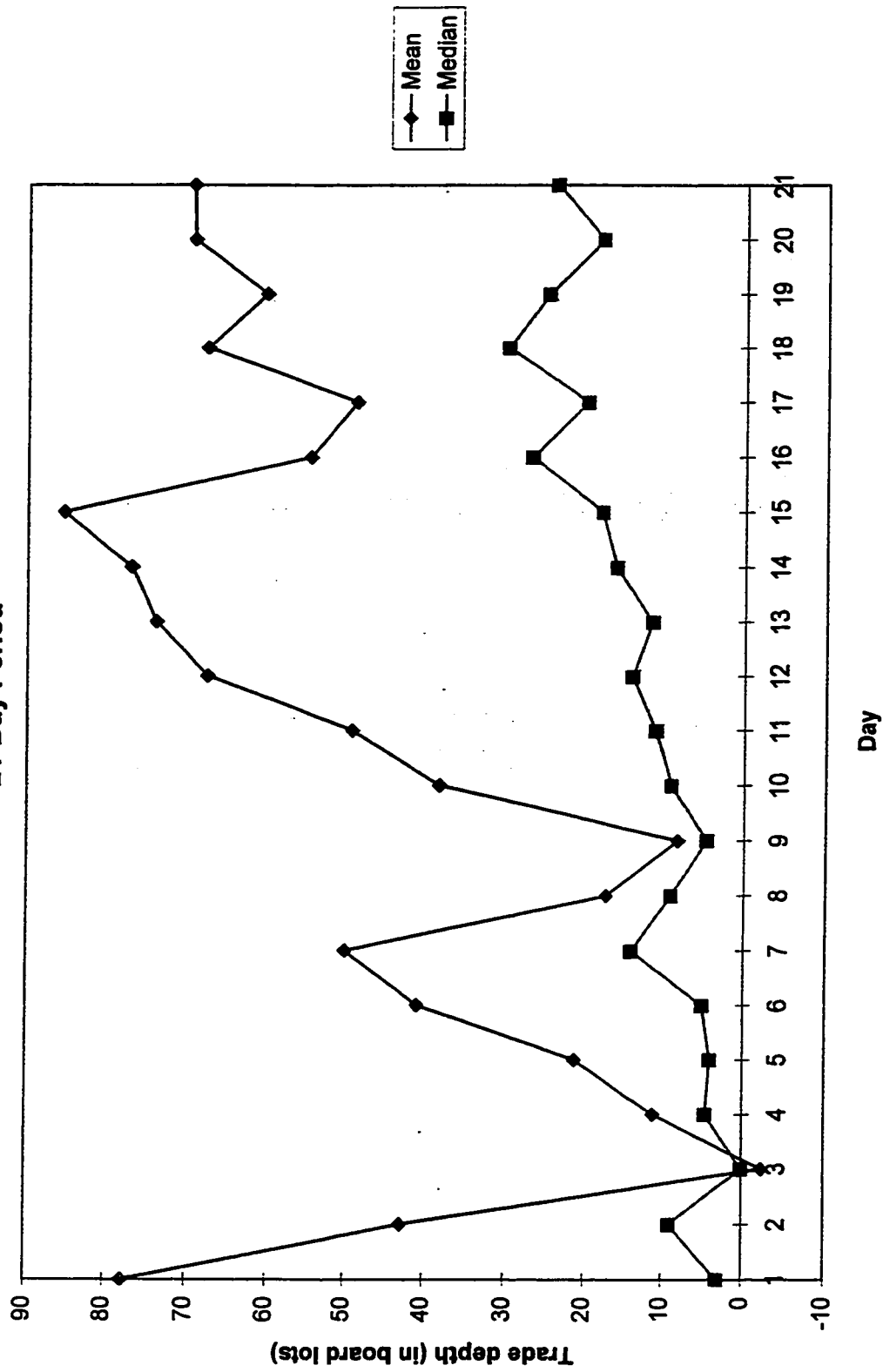
**Figure 10**  
**Plot of the Mean and Median Relative Liquidity Premia for the 64 Rights Over the 21.**  
**Day Period**



**Figure 11**  
**Plot of the Mean Variance for the 64 Rights Over the 21-Day Period**

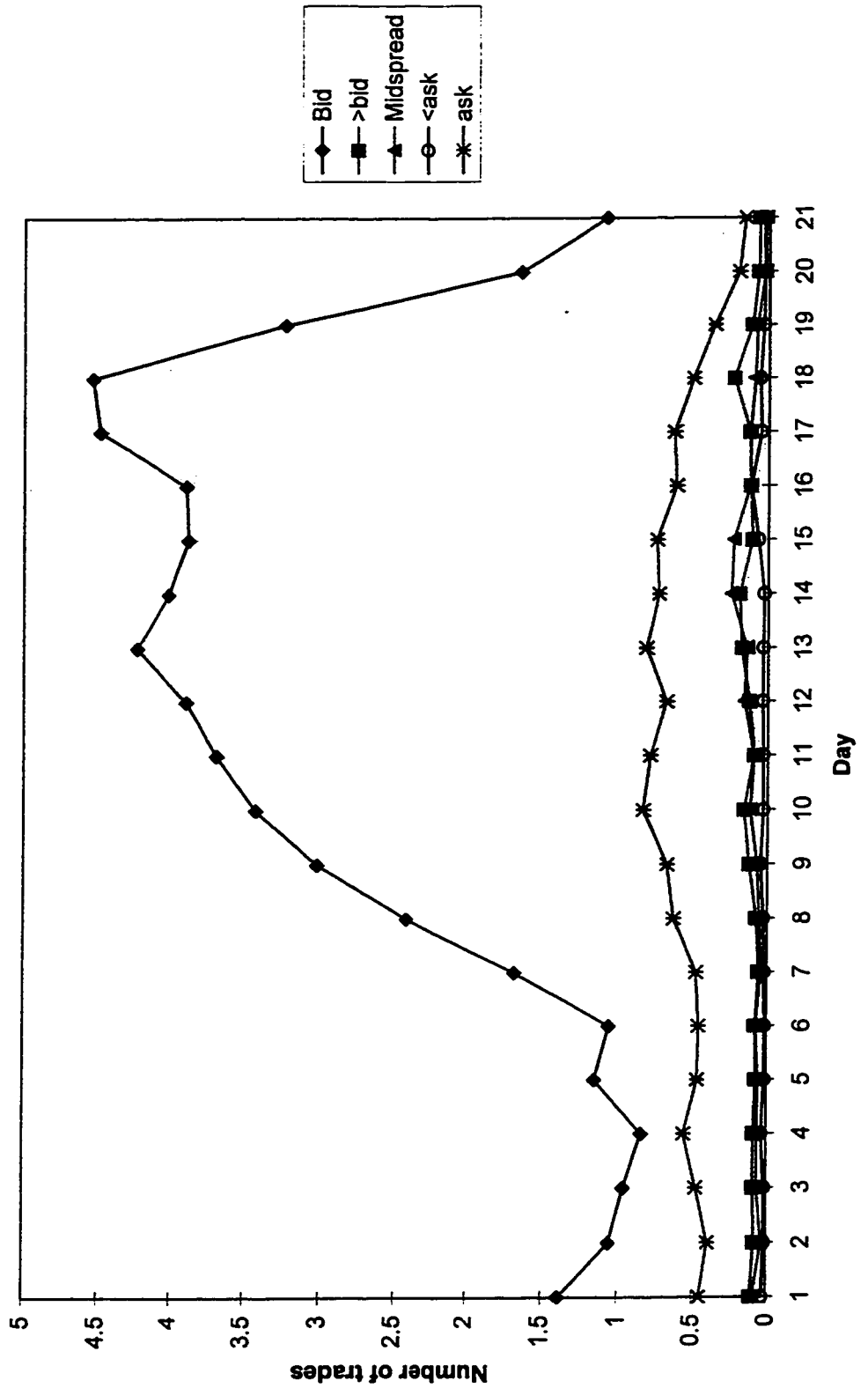


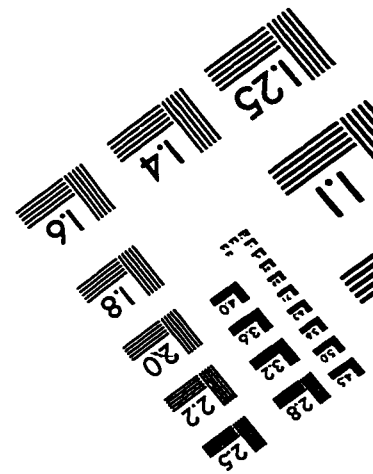
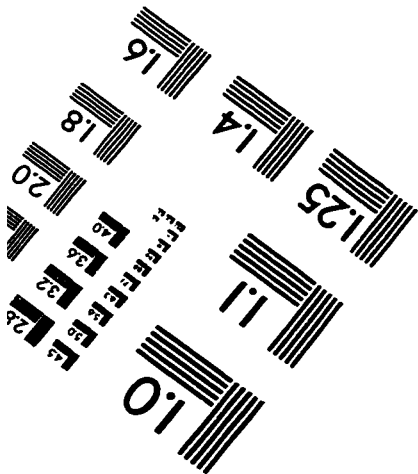
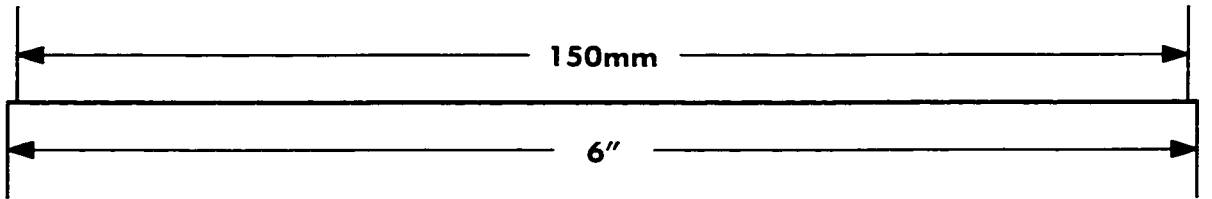
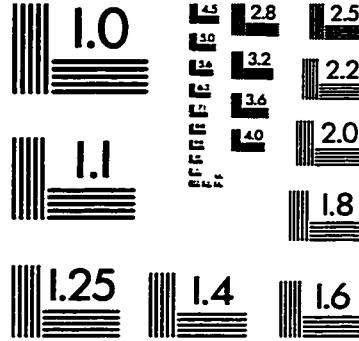
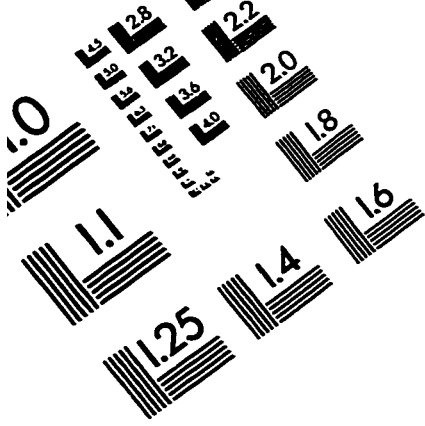
**Figure 12**  
**Plot of the Mean and Median Trade Depth (in board lots) for the 64 Rights Over the 21-Day Period**





**Figure 13**  
**Plot of the Mean Indicators of Trade Direction for the 64 Rights Over the 21-Day**  
**Period**





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