The valuation effects of stock splits in NASDAQ

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Abstract

Purpose – To investigate whether a stock split is still considered a policy that creates value for the underlying company and the rationale behind such action for companies listed on the NASDAQ.

Design/methodology/approach – The event study methodology of Strong is employed to examine the announcement effect of stock splits on stock prices.

Findings – The results indicate a positive market reaction at the stock split announcement and that the liquidity hypothesis explains well the rationale for the stock splits.

Research limitations/implications – The sample is quite small (57 observations) and the examination period is limited to 1999 and 2000.

Practical implications – Findings are of particular interest to researchers, practitioners and investors that have an interest in firms listed on NASDAQ.

Originality/value – Limited research on the stock price behaviour of firms listed on NASDAQ around stock split announcement date.

Keywords Stocks and shares, Liquidity, Stock exchanges

Paper type Research paper

Introduction

Over the years the relationship between stock splits and stock prices has been a subject of continuing interest to economists and practitioners. Stock splits have long been a puzzling phenomenon to financial economists. They usually occur after an increase in stock prices and usually elicit a positive stock price reaction upon the announcement. The reaction occurring after the announcement, however, has not been fully understood and explained.

A stock split results in a reduction of the par value and a consequent increase in the number of shares proportionate to the split. Theoretically, shareholders receive no tangible benefit from a stock split, while there are some costs associated with it. "Splits are at one level only cosmetic change, slicing the same pie into smaller pieces but not changing an investor's fractional ownership of the equity interest and votes in the company" (Lamoureux and Poon, 1987). This means that if managers could increase share prices by splitting their firm's stock, both overvalued and undervalued firms will choose to split their shares, eliminating the informational content of the decision. Many financial economists in the stock market feel that splitting the shares of a stock produces, for various reasons, a greater total market value for the shares outstanding. This implies that there must be some benefit, either real or perceived, that results from a firm splitting its stock. If stock splits of common shares are nothing more than a cosmetic change and have no impact on the value of the firm, why does a large number of such splits occur every year?

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Several hypotheses have tried to explain the reaction of the market around the announcement day and can be summarized as follows:

(1) *The signalling hypothesis.* It interpreted the positive stock market reaction to split announcements as an investors' response to managers' signalling favourable inside information. Signalling explanations are consistent with abnormal increases in earnings and/or dividends around the split.

(2) *The liquidity hypothesis.* The most common rationale behind stock splits according to this hypothesis is that there is an optimal price range for securities. This optimal price range is a relatively lower price for the underlying security. It is assumed that the liquidity/marketability of the security will improve after the split, as the lower price of the stock will attract more small investors.

(3) *The retained earnings hypothesis.* In declaring a stock distribution that reduces retained earnings, managers are seen as signalling their confidence in being able to replenish the retained earnings account with future earnings' streams.

(4) *The neglected-firm hypothesis.* It states that if there is little known about a firm its shares trade at a discount. Thus, firms use the split to both draw attention and ensure that information about the company is going to be spread wider than before.

(5) *The optimal tick size hypothesis.* A company may split its stock to move its share price into the range where the institutionally mandated minimum absolute tick size is optimal relative to the share price.

(6) *Self selection hypothesis.* It states that managers use splits to move share prices into a trading range, but condition their decision to split on expectations about the future performance of the firm.

(7) *The dividend hypothesis.* It states that the positive returns around the announcement day are not the result of the split per se, but the result of the increased dividend announcements that followed, or preceded the stock split.

The purpose of this study is two-fold: First, based on the methodology of Strong (1992), we investigate whether there are positive abnormal returns around the announcement of a stock split. We find that the average returns of the firms present an abnormal increase of 5.7 per cent and 4.1 per cent on the days 0 and 1 of the announcement, respectively. These positive returns exist only for the days 0 and 1 since the average returns of the companies for days before and after the announcement present a rather stable range.

Second, the average abnormal returns (AAR) that are presented in the days 0 and 1 indicate a signal from the company managers to the investors. Using three liquidity measures we investigate whether there is an explanatory power of the signalling effect on the change of liquidity at the stock split. In other words, the positive abnormal returns on the announcement day and the day after are connected with liquidity changes at the actual stock split. This implies that the theory that fits for the specific sample of companies is the theory of the optimal trading range which states that managers decide to split their stocks in order to lower the price of the stock and to attract a greater number of small investors in the company.

The remainder of the paper is structured as follows: Section 2 presents a brief review of literature on the subject. Section 3 presents the data and the methodology that is employed for the statistical analysis of the final sample. Section 4 presents the empirical results and section 5 concludes the paper.

Literature review

We have classified the literature review according to the proposed explanatory hypotheses, which are: the signalling, the liquidity, the neglected-firm, the optimal tick size and the self-selection hypotheses.

Signalling hypothesis

Brennan and Copeland (1988b), McNichols and Dravid (1981), and Brennan and Hughes (1991), interpreted the positive stock market reaction to split announcements as a response to managers signalling favourable inside information. Signalling explanations are consistent with abnormal increases in earnings and/or dividends around the split. When a manager believes that the future share price will decrease, he may not be willing to split the stock due to the increased cost of trading a lower priced stock, or due to their reluctance to split the stock and then have the share price fallen below the manager's perceived optimal trading range. While managers may not explicitly intend for the split to be a positive signal about the future prospects of the firm, the split conveys information to the market. Institutional owners may be better able to take advantage of this signal, compared to individual owners, either because they trade much more than individuals, and are not as wealth constrained, or because they are more efficient at interpreting and processing the signal.

Liquidity hypothesis

The most common rationale behind stock splits according to the liquidity hypothesis is that there is an optimal price range for securities. The stocks that trade in this range are presumed to be more liquid since they have lower brokerage fees as a per cent of value traded. This optimal range is considered to be a compromise between the desires of wealthy investors and institutions that will minimize brokerage costs if securities are highly-priced, and the desires of small investors who will minimize odd-lot brokerage costs if securities are low-priced. The optimal trading range hypothesis is in contrast to the decrease in trading activity after a stock split that was observed by Copeland (1979) and Conroy *et al.* (1990). Also, Muscarella and Vetsuypens (1996) showed that liquidity after a stock split improves which is accompanied by wealth gains for the investors. Their findings support the model of Amihud and Mendelson (1986) that predicts a positive relationship between equity value and liquidity. According to this model, rational investors discount illiquid securities heavier than liquid ones due to the higher transaction costs and the greater trading frictions they face.

The retained earnings hypothesis

It is generally accepted that firms declaring stock distributions of 25 per cent or greater consider them as stock splits which, therefore, have no effect on retained earnings. Stock distributions of less than 25 per cent are considered as stock dividends that reduce the retained earnings account. Since stock dividends reduce retained earnings, and thus the firm's ability to pay cash dividends, they have been viewed as conveying information regarding managers' outlook about future earnings. In declaring a stock distribution that reduces retained earnings, managers are seen as signalling their confidence in being able to replenish the retained earnings account with future earnings' streams. In effect, the signal has value because it is costly. This line of reasoning has been called the "retained earnings hypothesis" (Peterson *et al.*, 1996).

The neglected-firm hypothesis

Arbel and Swanson (1993) in the context of stock splits predominantly propose the neglected-firm hypothesis. It states that if there is little information about a firm, its shares trade at a discount. Thus, the firm's managers use the split to draw attention to ensure that information about the company is wider recognized than before.

Optimal tick size hypothesis

Angel (1997) introduced the optimal tick size hypothesis. According to this hypothesis, in equity markets there is an institutionally mandated minimum absolute tick size, which is optimal relative to the share price. A wider tick size reduces transaction costs and offers more incentives for limit orders, enhancing liquidity. On the other hand, a wider tick size increases the cost to investors inherent in a wider percentage spread. Hence, there is a cost trade-off and an optimal point where the companies want to be. A stock split is one mechanism used by the companies to move their share prices into the optimal range of the tick size.

Self selection hypothesis

Ikenberry *et al.* (1996) used the self-selection hypothesis as a synthesis of the signalling and the trading range hypothesis. In particular, it states that managers use stock splits to move share prices into a trading range, but condition their decision to split based on expectations about the future performance of the firm.

The dividend hypothesis

Copeland (1979) supported the view that split announcements may be interpreted as news about dividend increases. In other words, the positive abnormal returns around the announcement day are not the result of the split per se, but the result of the dividend increases or decreases that followed or preceded the stock split. "Higher dividends provide investors with signals of management's increased confidence in their companies' future levels of profitability and cash flows. Thus, it is not stock splits per se that cause higher stock prices, but rather management's emphatic statements of continued confidence in the company's future performance conveyed to the market in the form of larger than expected dividend increases" (Copeland, 1979).

Data

The initial sample of our research consisted of 79 American firms listed on the NASDAQ between 1999 and 2000 that split their stock. The sample was identified through the database of "FINANCE" (http.//yahoo.finance.com). For each stock split, the daily stock returns were obtained for 131 trading days surrounding the announcement date (i.e. $t = -120$ to $t = +10$). These 131 days are divided into two groups, the estimation period, that is, days from $t = -120$ to $t = -11$ and the test period (TP), that is, days from $t = -10$ to $t = +10$, with $t=0$ corresponding to the date of the stock split announcement. To limit problems of infrequent trading, the sample includes only firms that have returns on all the trading days of the estimation period. So, nine firms were excluded from the initial sample, reducing the number of firms to 72. Also, the study controls for the potential contamination of other information releases on the returns. Such contaminations may include merger and acquisition announcements, earnings reports, cash dividend declarations and right issues announcements. In order to avoid the problem of contamination of such returns, another 15 companies were excluded from the sample. The final sample consisted of 57 companies[1].

Methodology

First, we employ the event study methodology of Strong (1992) to examine the announcement effect of a stock split. More specifically, we calculate the abnormal returns using the market model. Most event studies have focused on the behaviour of share prices in order to test how their stochastic behaviour is affected by the disclosure of firm-specific events. For this sort of study, the most general form of the null (H_N) and alternative hypothesis (H_A) as follows:

$$H_N.\quad f(R_j|y_i) - f(R_j) = E(u_j|y_i) = 0 \text{ for all } y_i$$
$$H_A.\quad f(R_j|y_i) - f(R_j) = E(u_i|y_i) \neq 0 \text{ for at least one } y_i \qquad (1)$$

where R_j is the return on security j in an event period of interest; y_i is a signal from information structure announced in the event period that potentially affects security j; $f(R_j|y_i)$ is the distribution of R_j conditional on the information signal y_i from the information structure n; $f(R_j)$ is the marginal distribution of R_j.

It should be noted that the alternative hypothesis, in Equation (1), states that for the information signal, y_i, to possess information content the unexpected or abnormal return on security j conditional on the signal $E(u_j \mid y_i)$ must be non-zero.

Then, we analyze the consequences of the stock splits announcement on the returns of the specific stocks and for the days surrounding the announcement date. This analysis is generally known as residual analysis and includes three steps. First, we identify the event dates of stock splits for a sample of firms and we group the observations into a common event time. Second, within the overall TP of interest, we calculate the following (estimate of the) abnormal return for each firm and for each period around the announcement date:

$$u_{jt} = R_{jt} - E(R_{jt}) \quad t \in \text{TP}. \qquad (2)$$

where u_{jt} is the abnormal return for each firm and for each period around the announcement date; R_{jt} is the return of each company for each day of the period around the announcement day that we examine (this is known from the collection of the data); $E(R_{jt})$ is known as expected return (and not the actual) and includes the returns of the market index that each company belongs to.

The general formula of calculation of $E(R_{jt})$ is:

$$E(R_{jt}) = a_j + \beta_j R_{mt} \qquad (3)$$

As the component of R_{mt} is simply the returns of the market index for each company and for each day around the announcement (event day 0), we should calculate the coefficients of a_j, β_j in order to find the number of $E(R_{jt})$ for each day and for each company. At this point we should make a division of the days in two periods, the TP and the estimation period. As TP we define the period from day −10 to +10 around the announcement date (event day 0). Furthermore, we define as estimation period the period from day −120 to day −11 from the event day 0. The estimation period is generally chosen as a period of time close to the TP but one in which the disclosure events under study are expected to have no effect on security prices. This is intended to allow parameter estimation to be made during a period when there are no persistent abnormal returns. The above division is created to help us calculate the a_j, β_j coefficients. More specifically, we will calculate these coefficients via the following formula:

$$R_j = a_j + \beta_j R_m + u_{jt} \tag{4}$$

Equation (4) refers to the estimation period. We estimate coefficients a_j and β_j and we substitute these estimates in Equation (3) and we get the expected returns $E(R_{jt})$ that refer to the TP. Surely, this variable refers to the TP of -10 to $+10$, but includes coefficients estimates of the estimation period -120 to -11. We also know the market returns for each company (from the initial collection of data) and for the period -10 to $+10$ and we, therefore, calculate the expected returns for the TP.

Finally, we compute the mean abnormal returns across firms in the sample, possibly cumulated over the TP, as an estimate of $E(u_j|y_i)$ and test whether $E(u_j|y_i) = 0$ using a test statistic of the form:

$$t = \frac{\text{Mean abnormal return}}{\text{Standard deviation}} \tag{5}$$

We also calculate the mean abnormal return across the sample for each day of the TP. This mean abnormal return is known as AAR (AAR_t). In order to find the AAR_t, we calculate the abnormal return (AR_t) for each company and for each one of the 20 days of the TP. AR_t (or u_{jt}) is calculated according to Equation (2). We find the AR_t of company and day, as we know both R_{jt} (the return of each company for each day of the TP) and $E(R_{jt})$ (the expected return, whose calculation includes the coefficients of a_j, β_j of the estimation period).

Strong (1992) suggests that the formula that should be followed in order to check the null hypothesis is Equation (5), or

$$t = \frac{AAR_t}{S(AAR_e)} \tag{6}$$

where AAR_t is the AAR of the estimation period and for the entire sample together and is equal to:

$$(AAR_e) = \frac{\sum_{e=-120}^{e=-11} AR_e}{110} \tag{7}$$

and $S(AAR_e)$ represents the standard deviation of the AAR of the estimation period and is equal to:

$$S(AAR_e) = \frac{\sqrt{\sum (AR_e - AAR_e)^2}}{109} \tag{8}$$

The effects of the stock split announcement over the TP of days -10 to $+10$ will be clear after calculating the cumulative average abnormal returns (CAAR) as follows:

$$CAAR = \sum_{-10}^{+10} AAR_t \tag{9}$$

Empirical results

Table I and Figures 1 and 2 present daily AAR and CAAR for the overall sample, for the period from days $t = -10$ to $t = +10$ relative to the announcement day ($t = 0$). Column 1 lists the event time relative to the announcement day in terms of trading days. column 2 represents the number (N) of firms with valid returns for the TP. columns 3 and 4 list the number of positive and negative abnormal returns for each event day, respectively. column 5 presents the daily AAR for each event day. column 6 contains the cumulative daily average abnormal returns (CAAR). column 7 contains the standard deviation of the AAR of the estimation period $S(AAR_e)$. column 8 contains

TP	N	Positive	Negative	AAR (per cent)	CAAR (per cent)	S (AARe)	t-statistic	Significance
	57					0,0068		
−10		25	32	1.075	1.075		1.57	
−9		30	27	0.998	2.073		1.46	
−8		29	28	2.083	4.155		3.04	***
−7		31	26	1.538	5.694		2.25	**
−6		36	21	2.454	8.147		3.58	***
−5		30	27	0.882	9.029		1.29	
−4		33	24	0.754	9.783		1.10	
−3		25	32	−0.410	9.374		−0.60	
−2		28	29	0.045	9.419		0.07	
−1		30	27	0.607	10.026		0.89	
0		37	20	5.735	15.762		8.38	***
1		44	13	4.144	19.906		6.05	***
2		25	32	0.878	20.784		1.28	
3		32	25	0.741	21.526		1.08	
4		28	29	1.130	22.655		1.68	*
5		30	27	1.333	23.988		1.95	*
6		29	28	0.150	24.139		0.22	
7		35	22	1.483	25.622		2.17	**
8		26	31	0.329	25.951		0.48	
9		23	34	−0.340	25.614		−0.49	
10		21	36	0.427	26.041		0.62	

Notes: *significant at 0.1 level, **significant at 0.05 level; ***significant at 0.01 level

Table I. Abnormal returns at the announcement of a stock split

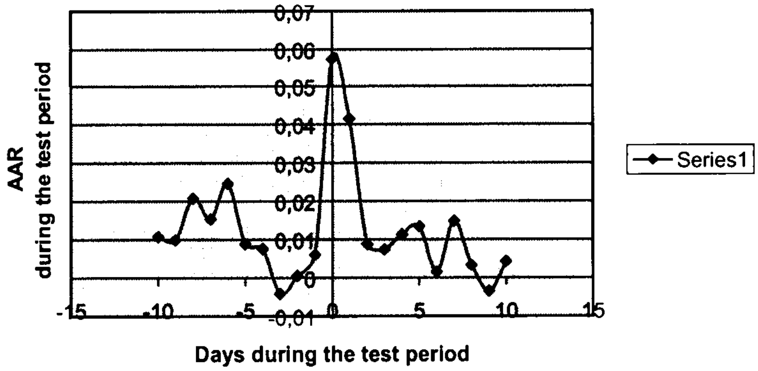

Figure 1. The AAR during the TP

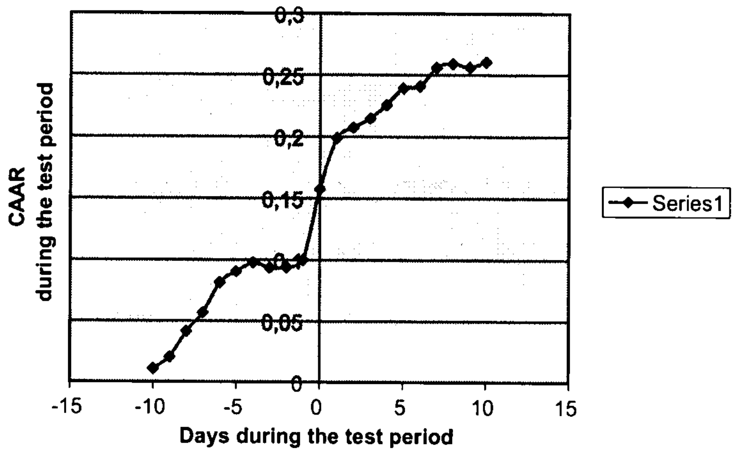

Figure 2.
The CAAR during the TP

the two-tailed t-statistics for the AAR (*t*-Statistic). The AAR on the announcement day ($t = 0$) is 5.735 per cent, which is statistically significant ($t = 8.375$) at the 0.01 level. One day after the announcement of the stock split ($t = 1$), there is also, positive AAR that is equal to 4.144 per cent. The abnormal return is again statistically significant at the 0.01 level. We can generally, observe positive AAR across the days of the TP except for the days −3 and +9 which are not statistically significant. Also, days −8 and −6 are statistically significant at the 0.01 level, with *t*-statistics of 3.04 and 3.583 and AAR of 2.08 per cent and 2.454 per cent, respectively. The days −7 and +7 are significant at the 0.05 level with *t*-statistics of 2.25 and 2.17 and AAR of 1.538 per cent and 1.483 per cent, respectively. Finally, the days +4 and +5 are statistically significant at the 0.10 level with *t*-statistics of 1.68 and 1.95 and AAR of 1.130 per cent and 1.333 per cent, respectively.

Hence, it is clear that positive abnormal returns are observed on the day of the stock split announcement, as well as on the day following the announcement date. The market perceives a stock split announcement as good news according to the signalling hypothesis, for the time period we investigate this event. Figure 1 presents diagrammatically this result where we picture the AAR during the TP. Figure 2 presents diagrammatically the CAAR during the TP.

Results from regression analysis

In order to gain more insights about the abnormal returns associated with stock split announcements, we perform three cross-sectional regression analyses of the abnormal returns for the fifty-seven firms that made stock splits during the period 1999-2000. We investigated the impact of signalling on the liquidity measures.

Brennan and Copeland's (1988a) signalling model implies a positive relationship between stock splits and abnormal returns. Since some of the liquidity measures involve returns on the stocks, it is worthwhile to investigate the impact of signalling on the liquidity measures. There are many measures of liquidity, which can be expressed as follows:

Empirical proxies for liquidity can be categorized as either measures of friction or activity reflecting the two dimensions of liquidity. Friction is identified as the price concession for immediacy, whereby activity measures reflect the extend of trading. An increase in a friction measure indicates reduced liquidity, while an increase in an activity measure indicates increased liquidity.

Friction measures can be categorized into the following categories and subcategories:

(1) Bid-ask spread measures:
- quoted bid-ask spread,
- percentage spread, and
- effective or realized bid-ask spread.

(2) Price measures:
- first price during the day,
- difference between the high and low price during the day, and
- difference between the high and low midpoint of the bid-ask spread during the day, and

(3) Return measures:
- absolute value of intraday trade-to-trade return divided by the number of transactions, and
- absolute value of the return derived from quote midpoints.

Activity measures can be categorized into the following categories and subcategories:

(1) Depth measures:
- ask depth,
- bid depth,
- log depth, and
- depth/spread.

(2) Volume measures:
- daily volume number of shares traded,
- dollar volume of shares traded, and
- number of shares traded per unit of return.

(3) Size measures:
- number of shares traded as fraction of shares outstanding,
- average number of shares per transaction,
- average dollar value of its transaction,
- percentage of transactions that occur within the bid-ask spread,
- number of share sin the opening transaction, and
- number of shares in the final day's transaction.

Tables II, III, and IV report the regression results where the dependent variable is the liquidity measure and the explanatory variable is the CAAR. We use three measures of liquidity. Two of them are categorized as friction measures and are the first price during the day and the difference between the high and low price during the day. The third one is categorized as activity measure and is the daily volume number of shares traded. We run the following cross-sectional regressions to test whether there is explanatory power of the announcement effect on the change in liquidity at the stock split. The signalling effect is approximated using various liquidity measures based on the two-day announcement return (days 1, 0). We use the CAAR for the days 1, 0 which is appropriately adjusted by the stock's beta. We also control for the different size of the stock split by including a dummy variable (dum lar) with a value of 1 if the stock split is large and the value of 0 if the stock split is small. A stock split is assumed to be large if the factor of the split is 3 for 1 or 4 for 1 and the stock split is assumed to be small if the factor of the split is 2 for 1 or 3 for 2. We also report the F-statistic for the overall significance of the regression.

Table II presents the regression results where the dependent variable is the liquidity measure of the return of the first price of the day between the days 0 and 1 [liq first(0, 1)]

Table II. Regression analysis of the CAAR and liquidity as measured by the first price of the day

Variable	Coefficient	Std. error	t-statistic	p-value	Significance
Constant	0.0056	0.01686	0.33	0.743	No significance
Dum large	−0.0028	0.01516	−0.18	0.855	No significance
CAAR (0, 1)	0.575	0.06345	9.06	0.000	***
R-squared	64.10%				
R-squared (adj)	62.70%				
F-statistic	48.16				
Prob (F-statistic)	0.000			***	

Notes: liq first(0, 1) = 0.0056 − 0.0028 dum lar + 0.575 CAAR (0, 1); ***significant at 0.01 level

Table III. Regression analysis of the CAAR and liquidity as measured by the difference between the high and the low price of the day

Variable	Coefficient	Std. error	t-statistic	p-value	Significance
Constant	0.1028	0.2592	0.40	0.693	No significance
Dum large	−0.1889	0.2330	−0.81	0.421	No significance
CAAR (0, 1)	2.5779	0.9753	2.64	0.011	**
R-squared	11.60%				
R-squared (adj)	8.30%				
F-statistic	3.53				
Prob (F-statistic)	0.036				**

Notes: liq high-low(0, 1) = 0.103 − 0.189 dum lar + 2.58 CAAR (0, 1); **significant at 0.05 level

Table IV. Regression analysis of the CAAR and liquidity as measured by the percentage change of the daily volume trade

Variable	Coefficient	Std. error	t-statistic	p-value	Significance
Constant	0.2877	0.3157	0.91	0.366	No significance
Dum Large	0.0330	0.2838	0.12	0.908	No significance
CAAR (0, 1)	1.3340	1.1880	1.12	0.266	No significance
R-squared	3.00%				
R-squared (adj)	0.00%				
F-statistic	0.82				
Prob (F-statistic)	0.445				No significance

Notes: liq vol(0, 1) = 0.288 − 0.033 dum lar + 1.33 CAAR (0, 1) and independent variables are a dummy variable (dum lar), that takes the value of 1 if the split is large and the value of 0 if the split is small, and the CAAR for the days 0 and 1. The regression explains the 64.1 per cent of the variation of the dependent variable according to *R*-squared. The coefficient estimates of the constant and the CAAR are positively related with liquidity, which means that an increase on the CAAR is followed by an increase in liquidity. Specifically, when the CAAR increases by one percentage unit the liquidity will increase by 0.575 percentage units. On the other hand, the coefficient of the dummy variable is negatively related with liquidity. Of the three coefficients, only the CAAR's coefficient is statistically significant. It is significant as its *p*-value (0.000) is lower than the significant level of 0.01. We can conclude that there is explanatory power of the announcement effect on liquidity at the stock split. So, the abnormal returns around the announcement day, which are estimated by CAAR, signal to the investors that the liquidity of the stock will increase at the ex-day of the split. We cannot conclude that the size of the stock gives any additional information, since the dummy's coefficient is insignificant for all statistical levels. The *F*-statistic is one more certification of the overall significance of the regression since its *p*-value coefficient is significant for all levels.

Table III presents the second regression results, where the independent variables remain the same as those in the first regression. However, the dependent variable that measures liquidity is now expressed in the terms of the return of the difference between the high and the low price of the day and for the days 0 and 1 [liq high-low(0, 1)]. The regression explains 11.6 per cent of the variation in the dependent variable according to the *R*-squared. Here, the coefficient estimates of the constant and the CAAR are positive, while the coefficient of the dummy (dum lar) that measures the factor of the split is negative. The coefficient of the CAAR is statistically significant at the level of 0.05 whereby the other two coefficients are insignificant. Again, we conclude that there is explanatory power of the announcement effect on the change of liquidity at the stock split announcement, while the size of the split does not play a significant role. The *F*-statistic shows that the regression is significant at the 0.05 level.

Table IV presents the third regression results, where we use the percentage change of the daily volume of trade, for the days 0 and 1 [liq vol(0, 1)] as the dependent variable measuring liquidity. Here, the regression model does not fit the data well, since its *R*-squared is 3 per cent. The dummy variable (dum lar) is negatively related to the dependent variable but is not statistically significant. The volume of trade seems to be inappropriate measure of liquidity since its coefficient and the *F*-statistic is not significant. This means that there is no explanatory power of the announcement effect on the change in liquidity at the stock split when we use the volume of trade as measure of liquidity.

In conclusion, we use three measures of liquidity in order to prove that there is explanatory power of the signalling effect on the change of liquidity at the stock split, the first price of the day, the difference between the highest and the lowest price of the day and the daily trading volume, where the first two are proxies of the friction aspect of liquidity while the latter is a proxy for the activity aspect of liquidity.

We use the CAAR for the day 0 and 1 as the measure of the signalling effect. The results show that the two first measures are connected with the CAAR(0, 1). This implies that the CAAR signals to the stakeholders that the stock split will increase the liquidity of the stock.

Conclusion

This study investigates the response of the market to the announcement of stock splits for the period 1999-2000 for a sample of 57 firms listed on the NASDAQ. We follow the event study methodology of Strong (1992), specifically, the market model method. Our results indicate that the market reaction to stock splits announcements is positive. This positive reaction implies that managers and investors perceive the stock split as a good news event regarding their company. This result is consistent with the liquidity hypothesis, which states that the split takes place in order to stabilize the price in a more attractive trading range. This optimal trading range is the result of the dispute between small and wealthy investors. In other words, small investors want a lower share price and wealthy investors want more shares in order to minimize the odd-lot brokerage costs. After the split, the number of shares will increase, while the total capital will remain unaffected, but the price of the stock will decrease according to the split factor. At this lower price the number of the small investors will probably increase, since now more can afford to buy the specific stock, the number of wealthy will either remain comparatively stable or increase also, driving the stock's liquidity (marketability) upwards.

The overall conclusion is that the theories around the split depend on the conditions and the strategic objective that each company has. Each stock split does give different signals from the managers to the investors. Hence, the hypotheses of signalling, liquidity, neglected-firm or even optimal tick size have their implementation under different conditions. Irrespective of the firm's conditions and purposes there is a positive market reaction to the announcement of a split. In our sample this positive reaction is explained as a signal for greater liquidity at the date on and after the split. We tested this liquidity hypothesis by applying cross sectional regression analysis on our CAAR (day 0 and 1) and our results supported and confirmed this liquidity hypothesis.

However, since our investigation period was only the years 1999 and 2000 we cannot generalize our inferences. Using the present paper as a pilot study, we can investigate this phenomenon for the same market for a longer time period in a future research project.

Note

1. The companies, the dates, the split factors and other pertinent information about the sample are available upon request by the authors.

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