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    NEED/IMPORTANCE OF THE STUDY

    STATEMENT OF THE PROBLEM

    OBJECTIVES

    HYPOTHESES

    RESEARCH METHODOLOGY

    RESULTS & DISCUSSION

    FINDINGS

    RECOMMENDATIONS/SUGGESTIONS

    CONCLUSIONS

    SCOPE FOR FURTHER RESEARCH

    ACKNOWLEDGMENTS

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    APPENDIX/ANNEXURE

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CONTRIBUTIONS TO BOOKS
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JOURNAL AND OTHER ARTICLES
- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

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PRICE EFFECT IN DHAKA STOCK EXCHANGE OF CROSS-LISTING IN CHITTAGONG STOCK EXCHANGE

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ABSTRACT

While there are a quite a large number of researches on international cross-listing, a few studies have been made on domestic cross-listing. This paper examines the impact of domestic cross-listing on stock prices. The sample consists of 30 companies that are traded in Dhaka Stock Exchange (DSE) and had listed in Chittagong Stock Exchange (CSE) during the period 1995-2000. Using event study methodology, average abnormal returns (AAR_t) and average cumulative abnormal returns ($ACAR_t$) are calculated considering 61 days as event window (-30 days to + 30 days around the event day t = 0), with the different companies listed in CSE in different dates. The hypothesis of the study is whether the cross-listing of DSE stocks in CSE have positive effect on their prices in DSE. This paper provides evidence that the cross-listing of a particular share in CSE has a positive impact on price of that particular share in DSE. As there are many companies those are traded in DSE and yet to be listed in CSE, this study could convey very important information to the management of those companies. Again the policymakers can set the stage for this cross-listing and harness the related benefit of shareholder's wealth maximization.

KEYWORDS

Cross-listing, Pre-event, Post-event, Average Abnormal Return, Average Cumulative Abnormal Return.

INTRODUCTION

After the establishment of Chittagong Stock Exchange (CSE) in 1995, companies listed in Dhaka Stock Exchange (DSE) had the option of simultaneous listing over to the second bourse in the country. With the widened location of trade, firms may have reached wider cross-section of investors thereby increasing the demand of stocks. This phenomenon may have led to the increased firm value in turn. On the other hand though more than a decade has passed, many firms listed in DSE are yet to list in CSE. An empirical evidence of relationship between firm value and multiple listing is of significant importance for these companies. It is also important information for the policy makers in formulating right policy for facilitating and steering multiple listing efforts by firms.

In this back drop we undertake this research with the objective of finding relationship between listing stock in CSE and its pricing in DSE. As on January 01, 2012 DSE has 501 listed securities (DSE official website) while CSE has 241 (CSE official website), so there are 260 securities yet to list in CSE. Leaving 221 Treasury Bonds aside there are at least 39 companies that are listed in DSE, but did not list in CSE. In this study we have attempted to measure the effect of economic event, the simultaneous listing in CSE, on the value of the firms by examining DSE market data. Our study has investigated whether the companies those are listed in DSE but did not list in CSE are depriving their shareholders in maximizing their worth. It would be interesting to know through this study. This requires us to accept the hypothesis that the stock markets are efficient in the sense that the prices reflect all publicly available information relevant to the prospects of the firm.

REVIEW OF LITERATURE

There are two terminologies used in the literature regarding plural listing of securities in the markets. These are dual-listing and cross-listing. Dual-listed companies arise out of mergers of two companies listed separately in two markets. After the merger the companies agree to combine their operations and cash flows, but retain separate identities and shareholders registries. These companies are also known as Siamese-twin companies. Dual-listing could also refer to dual-class shares where one company may list two classes (e.g. common and controlling share) of shares in the same market.

Cross-listing occurs when one company listed in one market decides to list simultaneously in another market generally across the national border. In this case it may even end up to multiple cross-listings if it decides to list in more than two markets. Our case is an unusual one where cross-listing occurs across two markets within a national border.

The growth of international integration among world capital markets since 1970 has been driven by the phenomena of corporations seeking additional listings for their stocks and corporate bonds in countries other than their home market. There has been a proliferation of literature on the international listing phenomena since 1970. Studies show that the effect of cross-listing in a foreign country is mostly positive. Early studies argue that cross-listing enables the companies to reduce their cost of capital, increase the liquidity of their securities, reduce trading frictions, increase visibility and facilitate increased information flow (Errunza and Losq 1985; Merton 1987; Alexander et al. 1988; Foerster and Karolyi 1993; Jayaraman et al. 1993). More recent studies investigate international listings from the perspective of how it impacts on corporate governance (La Porta et al. 1997; Doidge 2004a; Doidge et al. 2004). Many researchers argue that the cross-listing of stocks of developing countries in developed countries subjects the firm to a more stringent disclosure and legal environment than its home country, consequently, leading investors to more legal protection (Doidge 2004b; Doidge et al. 2005).

Most of the previous studies on cross-listing report a positive listing premium on listing dates or announcement dates. For example, Miller (1999) provides a comprehensive study using the announcement date, wherein he examines the cross-listing of firms onto U.S. market between 1985 and 1995. He reports a 1.15% listing premium. Similar results are also reported by Foester and Karolyi (1998), Mittoo (2003), and Sarkissian and Schill (2004). A number of studies report either slightly positive or neutral market reactions to foreign listing; such as Lee (1991), Varela and Lee (1993a), and Lau et al. (1994).

Though lots of works have been made on international listings, a few studies have also been made on domestic cross listings. Ule (1937) was one of the first to examine the effects of domestic listing on stock prices. He uses 29 over-the-counter (OTC) stocks listed on New York Securities Exchange (NYSE) as sample. He compares their price changes relative to the corresponding industry index changes, finding a relative increase in price before listing and decrease after listing. Merjos (1962, 1963, 1967) examines stock transfers to organized exchanges over three non-overlapping periods. She finds that stock prices of new listings rise pre-listing and fall post-listing, but the overall price ends up higher. Merjos interprets this as consistent with exchange listing being valuable and there being profit taking by investors. Van Home (1970) also compares stock returns of cross-listing companies to industry returns for NYSE listings between 1960 and 1967. He finds the same pattern of positive excess pre-listing returns and negative excess post-listing returns, which he interprets as consistent with profit taking. Ignoring transaction costs there seems to be increased value, however, taking transaction costs into account no significant effect remains.

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Ying, et al. (1977) examine 248 companies cross-listing their stock on the American Stock Exchange (AMEX) or NYSE between 1966 and 1968. They use the market model with monthly data of up to 84 months for beta estimates. They find no evidence of changes in betas, but find positive abnormal pre-listing returns and negative abnormal post-listing returns for the NYSE and the AMEX stocks. They also point out that almost all applications to the exchanges are accepted and therefore repeat the analysis around the public announcement of the application for listing. They find positive abnormal pre-application returns and positive abnormal returns right after the application (interpretable as effect of listing), then negative abnormal returns 2-3 months after application (which is usually also post-listing). According to them the negative abnormal post-listing returns may be due to a correction of an overreaction prior to listing.

Baker and Edelman (1992) take a slightly different approach and examine stock transfers from AMEX to NYSE. They use a market model with daily data for the period 1982-89 to examine. Interestingly they find that the pattern of positive abnormal pre-listing and negative abnormal post-listing returns is even present in stock transfers from AMEX to NYSE.

McConnell and Sanger (1987) examine OTC to NYSE transfers between 1966 and 1977. They utilize a market model with weekly data and find little or no change in the parameters. Similar to previous literature they also find the positive abnormal pre-listing returns and negative abnormal post-listing returns. However, they find that the introduction of National Association of Securities Dealers Automatic Quotation (NASDAQ) communications system to the OTC market in 1971 has reduced the post-announcement abnormal returns and made them insignificant.

McConnell and Sanger (1987) scrutinize the negative abnormal post-listing returns for possible explanations. They use market adjusted returns with monthly data for the NYSE between 1926 and 1982 and daily data for the NYSE and AMEX between 1962 and 1982 and are able to conclude that the following possibilities are not causing the anomaly:

1. Insider dumping
2. Correction of overreaction
3. Time period
4. Outliers
5. Original locale of trading
6. AMEX or NYSE peculiarities
7. Issuance of additional stock after listing

They conclude that the negative abnormal post-listing returns are not due to insider dumping/profit taking as stocks with insider selling actually did better. They also eliminate correction of overreaction as they fail to find significant correlation between the magnitudes of pre-listing run-ups and magnitudes of post listing falls of stock prices.

Dharan and Ikenberry (1995) are able to find some empirical support for one possible explanation of the negative abnormal post-listing returns. They use returns adjusted for size and book-to-market equity between 1962 and 1990 and find that smaller firms or firms with fewer institutional investors tend to have more negative abnormal post-listing returns. The managers of these firms are those that had greater autonomy and it was argued that under the opportunism hypothesis they time their applications to the exchanges when they expect bad performance in the future. Once the firm is listed, the bad news cannot do much harm, because the hurdles for remaining listed on the exchanges are much lower than those for initial listing.

METHODOLOGY

In our study event study model is adopted to study the behavior of share pricing in DSE around the event of simultaneous listing in CSE.

SAMPLE SIZE AND DATA

In this study we have selected 30 companies (Appendix A) that are traded in DSE and have listed in CSE on different dates between 1995 and 2000, as most of the shares were listed during this period. The majority of the empirical studies on international listings addressed the share price reactions around a firms listing decision. Some of these event studies employed monthly returns using a two-year event window, while others studied daily returns using a more conventional two-month window. While some focused on listing dates, others considered application dates, application-acceptance or regulatory-approval announcement dates. We know that at any given point in time, security prices might be affected by a large number of randomly generated pieces of new information or events. Given that more than one piece of news may be affecting the security's price at any given point in time; we have studied 30 companies, statistically considered a sample large enough to control the effects caused by other events, to determine how the listing of stocks in CSE had affected the price of those particular stocks in DSE. We have considered the following other points to minimize the effect of factors other than the event:

1. Efforts have been made to select companies from different industries.
2. Companies have been selected with listing dates in different years.
3. Securities those are traded actively in DSE.

Data of this study is the daily prices of the sample 30 companies in DSE and the corresponding All Share Price Index of DSE within the event window of 61 days. From the price data of the shares daily returns are calculated for the sample companies and from the All Share Price Index the corresponding daily market returns are calculated.

THE MODEL

In this paper we have examined the reaction on the pricing of a company's security in DSE relevant to the listing of that particular company in the CSE. So the "event" of our study is the listing of the sample firms in CSE. Methodology introduced initially by Fama, Fisher, Jensen and Roll (1969) is widely used till today. The initial task of conducting an event study is to define the event of interest and identify the period over which the prices of the relevant financial instruments will be examined. This period is called the 'event window'. We use the listing date on which the first trading took place in CSE as opposed to announcement date as the event date. There are a number of reasons in selecting this choice. First, many firms announce their intention of cross-listing yet never actually follow through for a variety of reasons. Second, listing is a complex process that takes from several months to several years to complete. This delay implies that the listing date is less noisy than the announcement date.

The selection of the event window can have profound effects on the results of the study. In a perfectly efficient market one would expect all value effects to be reflected immediately in asset prices. But in practice, the market may acquire information prior to the event; speculate on the content of an announcement before it is made; or take time to assimilate information and react to it. For these reasons, it is common in studies of this type to use an event window of a number of days encompassing the event day. The choice of "event window" is somewhat arbitrary and there does not appear to be any sound empirical basis for choosing a particular time period around an event. In our study, we have used an event window of sixty one days (30 days before and 30 days after the event) to capture both prior and post event effects.

To assess the impact of the event on returns of a company's securities, we first establish what the return would have been in the absence of the event (the 'normal return'). Brown and Warner (1980), in their classic study of event study methodologies, suggest three models to calculate the normal returns:

1. Mean Adjusted Returns: The normal return for a security equals a constant K_i. Typically, the mean return of a security over a period of time outside the testing period serves as the constant K_i. The expected return of a security is assumed to be constant over time, though ex-ante returns will vary among securities. Thus, the abnormal return of the security is found: $AR_{it} = R_{it} - K_i$. Where AR_{it} is the abnormal return and R_{it} is the actual return of a security i, over the period t.
2. Market Adjusted Returns: The normal return for a security at a given point in time equals the market return R_{mt} for that period. The expected returns for all securities are assumed to be the same during a given period, though they vary over time. Abnormal returns are found: $AR_{it} = R_{it} - R_{mt}$.
3. Market and Risk Adjusted Returns: Here, normal returns are assumed to be generated by a single index model: $R_{it} = RF + \beta_i(R_{mt} - RF)$. Typically, security returns are linearly related to market returns through stock betas. These risk-adjusted returns vary across securities and over time. Abnormal returns then is determined: $AR_{it} = R_{it} - [RF + \beta_i(R_{mt} - RF)]$.

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One tests the significance of an event by averaging the abnormal performance of the sample of securities around the event dates. If the average abnormal returns are not significantly different from zero during the relevant testing period, one may conclude that the test did not provide evidence indicating the significance of the event.

Extensive tests examining the power of various methodologies for measuring abnormal returns have been done by Brown and Warner (1980) using simulation techniques. In general, they find that simpler methodologies, such as the Market Adjusted Returns Model, are no less effective than more sophisticated models to detect abnormal performance when it is present. In our study, therefore, we have used Market Adjusted Return Model to capture the expected return of a sample firm within the event window.

The Market Adjusted Returns model is used to measure abnormal performance of firms around event time. The model assumes that security returns change over time, but at a given time expected returns are equal across securities. Since the market portfolio is linear combination of all securities, in equilibrium the $E(R_{it}) = E(R_{mt})$ for any security i. If this relationship does not hold for any security i, forces of supply and demand for the security will lead to price adjustments which will equilibrate its return with that of the market.

The measure for abnormal returns, AR_{it} to any security i in time t is given by the difference between its return and the return on the market portfolio, and is expressed as:

$$AR_{it} = R_{it} - R_{mt} \qquad (1)$$

Where, R_{mt} is represented by the return on the DSE All Share Price Index. The abnormal returns are calculated for each of the sample companies on each of the 61 days, day 31 being the listing day.

The Average Abnormal Returns (AAR) are tested for significance using a t-statistic for each day across the 30 firms. The average abnormal return is calculated for each day in the event window as follows:

$$AAR_t = \frac{1}{N}\sum_{i=1}^{N} AR_{it} \qquad (2)$$

Where, t = -30,......,0,......, +30 days
N = The number of firms in the sample

Averaging is used because we are interested in the effects of listing in general on return behavior, not in the effects on individual firms.

The AAR_t actually reflects whether listing of DSE stocks in CSE affect stock prices in any given day around the event window. We may find no significant effect for any single day returns. In some other instance, we may find that while no effect is found on the abnormal return for any particular day, the effect might be realized over a period of days. This might be expected if market reactions are slow, that is, if the market is somewhat inefficient. To address the problem, we also broaden our test to visualize the effect on return over a period of days. For the purpose, we have computed Cumulative Abnormal Returns (CAR_{it}) for each stock over the period by accumulating the abnormal returns during the event window, as follows

$$CAR_{it} = CAR_{i(t-1)} + AR_{it} \qquad (3)$$

Then the Average Cumulative Abnormal Returns ($ACAR_t$) has been calculated with

$$ACAR_t = \frac{1}{N}\sum_{i=1}^{N} CAR_{it} \qquad (4)$$

Where, t = -30,......,0,......, +30 days
N = The number of firms in the sample

To observe the effect of event on average abnormal returns AAR_t in pre-event as well as in post-event times, we have tested the significance of the average of AAR_t in pre-event period (t=- 30 to t=-1) and also the average of AAR_t in post-event period (t=+1 to t=+30).

HYPOTHESIS

While the process of cross-listing to CSE goes on, the stock in DSE experiences a buying pull on its price in the window prior to the listing date in CSE because of an expected future increase in demand and also the same price pull occurs in the post-event windows as there will be an actual increased demand because of a widening of the market base. So, in the total event window there will be positive daily abnormal returns. For any noise in the market, we may not find all the daily average abnormal returns significantly positive, but those will be significantly positive on the average and cumulative basis.

Therefore:

$H_{1,O} : AAR_t \leq 0$
$H_{1,A} : AAR_t > 0$ [In two panes]
and
$H_{2,O} : ACAR_t \leq 0$
$H_{2,A} : ACAR_t > 0$ [In total window]

TESTING FOR SIGNIFICANCE

Our objectives are to determine:

a) Whether any daily Average Abnormal Return (AAR_t) is significantly positive.
b) Whether the average of AAR_t in pre-event and post-event period are significantly positive.
c) Whether any Average Cumulative Abnormal Return ($ACAR_t$) is significantly positive.

To test the significance of the daily Average Abnormal Return (AAR_t) and Average Cumulative Abnormal Returns ($ACAR_t$) along with the test statistics, the standard deviations have been computed. We have assumed that the AAR_t and $ACAR_t$ follow a t-distribution. As we want to test whether the sample means i.e. AAR_t and $ACAR_t$ are significantly positive or not, we have performed one tailed test. Based on that, t value of the sample means i.e. t_{obs} have been calculated both for AAR_t and $ACAR_t$ with

$$t_{obs} = \frac{\text{Sample mean - Hypothetical mean}}{\dfrac{\text{Sample Standard deviation}}{\sqrt{n}}} \qquad (5)$$

Further, the computed t_{obs} values are compared with critical values of t=2.462 for α=0.01, t=1.699 for α=0.05 and t=1.311 for α=0.10 to find out whether these are significantly positive.

The same test has been performed for average of AAR_t in pre-event and post-event period to test whether these are significantly positive.

ANALYSIS OF RESULTS

The average abnormal returns and average cumulative abnormal returns are represented graphically in Figure 1 and Figure 2 respectively.

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FIGURE 1: AVERAGE ABNORMAL RETURNS (AAR$_T$)
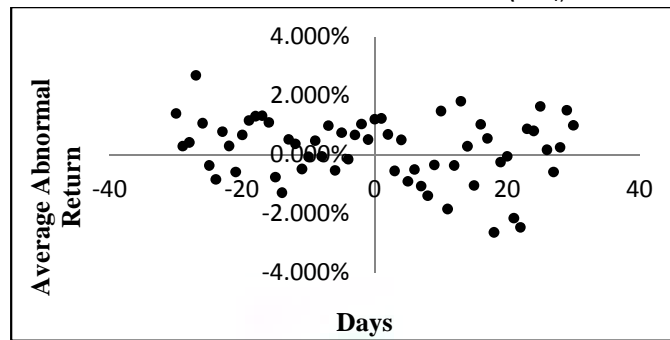
FIGURE 2: AVERAGE CUMULATIVE ABNORMAL RETURNS (ACAR$_T$)
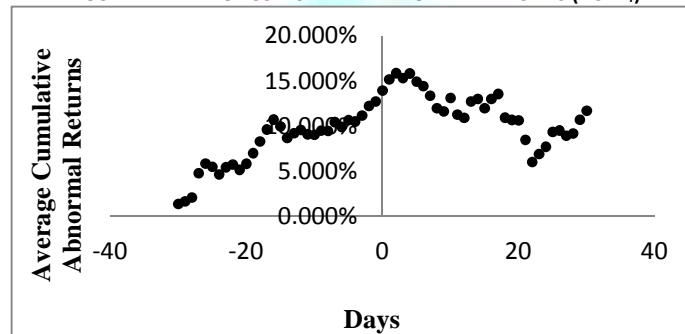
Details of the abnormal returns are shown in Table 1. The results show that average (over 30 sample companies) abnormal returns are positive on 36 days and 13 (5 in pre-event and 7 in post-event days, one in t = 0) of them are significant. Therefore we can reject the first null hypothesis and say that stocks on the average earned positive daily abnormal returns overall in the total event window of 61 days.

If we examine the window further splitting into its two panes (Table 1), we observed that average (over 30 days) of the AAR$_t$ is positive (0.43%) in the pre-event days and is significant at $\alpha=0.01$. But the same is negative (-0.08%) in the post-event days and is not significant even at $\alpha=0.10$. Though there are more positive significant AAR$_t$ in post-event panes (7) than in the pre-event panes (5), this insignificant negative AAR$_t$ may have occurred because of the price adjustment or profit taking tendency of the investors in the post-event days. To investigate this apparent anomaly we may now look into the analysis of average cumulative abnormal returns (ACAR$_t$).

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TABLE 1: SUMMERY STATISTICS OF AVERAGE ABNORMAL RETURNS (AAR$_T$) AND AVERAGE CUMULATIVE ABNORMAL RETURNS (ACAR$_T$)

	Day	AAR$_t$	T$_{obs}$	Average AAR$_t$	T$_{obs}$	ACAR$_t$	T$_{obs}$
Pre-event	-30	1.400%	0.9591	0.43%	2.7868***	1.400%	0.9591
	-29	0.291%	0.6409			1.691%	0.9944
	-28	0.420%	0.8392			2.112%	1.1214
	-27	2.695%	1.7252**			4.807%	1.8503**
	-26	1.071%	0.8281			5.878%	2.2809**
	-25	-0.363%	-0.3479			5.515%	2.2431**
	-24	-0.835%	-1.1897			4.680%	2.0062**
	-23	0.786%	1.3167*			5.466%	2.3791***
	-22	0.301%	0.4725			5.767%	2.5926***
	-21	-0.581%	-0.8511			5.186%	2.4570***
	-20	0.674%	0.7912			5.860%	2.6715***
	-19	1.165%	1.0780			7.025%	3.0524***
	-18	1.309%	1.7275**			8.334%	3.1697***
	-17	1.323%	1.1568			9.657%	3.1009***
	-16	1.099%	1.2874			10.757%	3.1215***
	-15	-0.758%	-0.9107			9.999%	2.9746***
	-14	-1.283%	-1.8626			8.715%	2.6211***
	-13	0.520%	0.4040			9.235%	2.6328***
	-12	0.374%	0.2010			9.609%	2.8678***
	-11	-0.481%	-0.5327			9.128%	2.7884***
	-10	-0.068%	-0.1115			9.060%	2.8338***
	-9	0.477%	0.6175			9.538%	2.9372***
	-8	-0.054%	-0.1003			9.484%	2.9569***
	-7	0.986%	1.1466			10.470%	3.1311***
	-6	-0.527%	-0.6770			9.943%	3.1302***
	-5	0.747%	1.6059*			10.690%	3.2624***
	-4	-0.153%	-0.2877			10.537%	3.0843***
	-3	0.671%	1.2851			11.208%	3.1347***
	-2	1.043%	1.4982*			12.251%	3.1011***
	-1	0.518%	0.8667			12.769%	3.0701***
	0	1.206%	1.8643**			13.975%	3.2269***
Post-event	1	1.232%	2.3595**	-0.08%	-0.3339	15.207%	3.3874***
	2	0.693%	1.0627			15.900%	3.4826***
	3	-0.545%	-0.6883			15.354%	3.2708***
	4	0.506%	0.9358			15.860%	3.3349***
	5	-0.903%	-1.4132			14.957%	3.2506***
	6	-0.501%	-0.7121			14.456%	3.1564***
	7	-1.061%	-1.5757			13.395%	2.9966***
	8	-1.388%	-1.8026			12.006%	2.8638***
	9	-0.343%	-0.5732			11.663%	2.8436***
	10	1.483%	1.3047*			13.146%	3.2943***
	11	-1.839%	-1.6523			11.307%	2.6224***
	12	-0.364%	-0.7669			10.943%	2.5426***
	13	1.817%	1.3730*			12.760%	2.7648***
	14	0.288%	0.4448			13.048%	2.9037***
	15	-1.040%	-1.6809			12.008%	2.6293***
	16	1.030%	1.5479*			13.038%	2.9611***
	17	0.555%	0.7287			13.593%	2.9705***
	18	-2.632%	-1.9690			10.961%	2.4225**
	19	-0.247%	-0.2171			10.714%	2.1180**
	20	-0.052%	-0.0590			10.662%	2.1397**
	21	-2.150%	-1.6915			8.512%	1.6628*
	22	-2.460%	-2.2713			6.052%	1.1402
	23	0.879%	1.5336*			6.931%	1.3236*
	24	0.809%	1.3274*			7.740%	1.4779*
	25	1.642%	1.4906*			9.381%	1.7563**
	26	0.171%	0.1478			9.553%	1.7433**
	27	-0.582%	-0.8076			8.971%	1.5620*
	28	0.251%	0.3604			9.222%	1.5275*
	29	1.511%	0.7169			10.733%	1.5686*
	30	0.998%	0.9469			11.731%	1.7183**

* Significant at α=0.10
** Significant at α=0.05
*** Significant at α=0.01

Average cumulative abnormal returns (Table 1) have positive values throughout the event window. Almost all ACAR$_t$ are significant expecting on three initial days (t=-30, t=-29 and t=-28) and on the day, t=22. Most of the ACAR$_t$ are highly significant at α=0.01. ACAR$_t$ on t=+2, just one day after the event day (t=0) is the highest (15.9%).

Though ACAR$_t$ are decreasing after t=+2 because of the probable price adjustment or profit taking tendency of the investors, these are unlike AAR$_t$ significantly positive. Therefore, we can also reject the second null hypothesis and say that the stock on average earned positive cumulative abnormal returns in the total event window.

Finally considering both hypotheses together we can say that the stocks by simultaneous listing in CSE earn positive abnormal returns in DSE around the listing dates. This finding is consistent with the findings of Merjos (1962, 1963, 1967), Van Home (1970), and Ying, et al. (1997).

CONCLUSION

Though lots of works have been done on international cross-listing, a few studies have been done on domestic cross-listing. In our country there are two stock exchanges but a number of companies listed in DSE are yet to be listed in CSE. Among those there are some large capitalization companies such as Atlas

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Bangladesh, United Leasing, Glaxo SmithKline and Reneta Ltd. It is interesting to see that these companies are depriving their stockholders in maximizing their wealth. In other words the companies are not utilizing the opportunity of maximizing their market value. Our test result confirms that the cross-listing of a particular share in CSE has a positive impact on price of that particular share in DSE.

REFERENCES

1. Alexander, G., Eun, C. and Janakiramanan, S. (1988), "International Listings and Stock Returns: Some Empirical Evidence," Journal of Financial and Quantitative Analysis, Vol. 23, No. 2, pp. 135– 151.
2. Baker, H.K. and Edelman, R.B. (1992), "AMEX-to-NYSE Transfers, Market Microstructure, and Shareholder Wealth," Journal of Financial Management, Vol. 21, No. 4, pp. 60–72.
3. Brown, S. and Warner, J. (1980), "Measuring Security Price Performance," Journal of Financial Economics, Vol. 8, No. 3, pp. 205-258.
4. Dharan, B. G. and Ikenberry (1995), "The Long Run Negative Drift of Post-listing Stock Returns," Journal of Finance, Vol. 50, No. 5, pp. 1547–1574.
5. Doidge, C. (2004a), "Do Changes in Laws Matter for Ownership and Control? Evidence from Emerging Markets Firms that List in the U.S.," University of Toronto working paper.
6. Doidge, C. (2004b), "U.S. Cross-listings and the Private Benefits of Control: Evidence from Dual Class Firms," Journal of Financial Economics, Vol. 72, No. 3, pp. 519–553.
7. Doidge, C., Karolyi, G. A and Stulz, R. (2004), "Why are Foreign Companies that are Listed in the U.S. Worth More?" Journal of Financial Economics, Vol. 71, No. 2, pp. 205–238.
8. Doidge, C., Karolyi, G. A., Lins, K., Miller, D. and Stulz, R., (2005), "Private Benefits of Control, Ownership and the Cross-listing Decision," Ohio State University working paper.
9. Errunza, V. and Losq, E. (1985), "International Asset Pricing Under Mild Segmentation: Theory and Test," Journal of Finance, Vol. 40, No. 1, pp. 105–124.
10. Fama, E. F., Fisher, L., Jensen, M. C. and Roll, R. (1969), "The adjustment of stock prices to new information," International Economic Review, Vol. 10, No.1, pp. 1–21.
11. Foerster, S. R. and Karolyi, G.A. (1993), "International Listings of Stocks: The Case of Canada and the U.S.," Journal of International Business Studies, Vol. 24, No.4, pp. 763–784.
12. Foerster, S. R., and Karolyi, G. A. (1998), "Multimarket Trading and Liquidity: A Transaction Data Analysis of Canada-US Inter-Listings," Journal of International Financial Markets, Institutions and Money, Vol. 8, No.3-4, pp. 393–412.
13. Jayaraman, N., Shastri, K. and Tandon, K. (1993), "The Impact of International Cross-Listings on Risk and Return: Evidence from American Depositary Receipts," Journal of Banking and Finance, Vol. 17, No. 1, pp. 91–103.
14. La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R.W. (1977), "Law and finance," Journal of Political Economy, Vol. 106, No. 6, pp. 1113–1155.
15. Lau, S., Diltz, D. and Apilado, V. (1994), "Valuation effects of international stock Exchange Listings," Journal of Banking and Finance, Vol. 18, No. 4, pp. 743–755.
16. Lee, I. (1991), "The Impact of Overseas Listings on Shareholder Wealth: The Case of the London and Toronto Stock Exchanges," Journal of Business Finance and Accounting, Vol. 18, No. 4, pp. 583 – 592.
17. McConnell, J. and Sanger, G. (1987), "The Puzzle in Post-listing Common Stock Returns," Journal of Finance, Vol. 42, No.1, pp. 119–140.
18. Merjos, A. (1962), "Going on the Big Board," Barron's, January 29, pp. 14–15.
19. Merjos, A. (1963), "Going on the Big Board: Stocks Act Better before Listing than Right Afterward," Barron's 43, 9ff.
20. Merjos, A. (1967), "Up on the Curb," Barron's 47, 9ff.
21. Merton, R.C. (1987), "Presidential Address: A Simple Model of Capital Market Equilibrium with Incomplete Information," Journal of Finance, Vol. 42, No. 3, pp. 483–510.
22. Miller, D. P. (1999), "The Market Reaction to International Cross-Listings: Evidence from Depository Receipts," Journal of Financial Economics, Vol. 51, No. 1, pp. 103-123.
23. Mittoo, U. (2003), "Globalization and The Value of U.S. Listing: Revisiting Canadian Evidence," Journal of Banking and Finance, Vol. 27, No. 9, pp. 1629-1661.
24. Sarkissian, S. and Schill, M. (2004), "The overseas Listing Decision: New Evidence of Proximity Preference," Review of Financial Studies, Vol. 17, No. 3, pp. 769-809.
25. Ule, Maxwell, G. (1937), "Price Movements of Newly Listed Common Stock," Journal of Business, Vol. 10, No. 4, pp. 346-369.
26. Van Home, J. C. (1970), "New Listings and Their Price Behavior," Journal of Finance, Vol. 25, No. 4, pp. 783–794.
27. Varela, O. and Lee, S. (1993a), "International listings, the secuirity market line and capital market integration: The case of U.S. listings on the London stock exchange," Journal of Business Finance & Accounting, Vol. 20, No. 6, pp. 843-863.
28. Ying, L.K.W., Lewellen, W.G., Schlabram, G.G. and Lease, R.C. (1977), "Stock Exchange Listings and Secuirities Returns," Journal of Financial and Quantitative analysis, Vol. 12, No. 3, pp. 415-432.

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APPENDIX

APPENDIX A: LISTING DATES OF SAMPLE COMPANIES IN CSE

Sl	Name of the Company	Listing Date
1	Rupali Life Insurance Company Ltd.	21/10/1995
2	Janata Insurrance Company	21/10/1995
3	Phoenix Insurance Company	22/09/1996
4	Apex Spinning & Knitting Mills	21/10/1995
5	Beximco Textiles Limited	6/11/1995
6	Ashraf Textile Mills Limited	10/11/1996
7	Square Pharmaceuticals	21/10/1995
8	Beximco Pharmaceuticals Ltd.	6/11/1995
9	Reckitt Benckiser (bd) Limited	6/11/1995
10	Orion Infusion Limited	28/10/1996
11	Bangladesh Chemical Industries Ltd.	29/09/1996
12	Apex Foods Limited	21/11/1995
13	Bengal Biscuits Limited	21/10/1995
14	Confidence Cement Limited	21/10/1995
15	Heidelberg Cement	21/10/1995
16	Meghna Cement Mills Limited	26/10/1996
17	Aftab Automobiles Limited	17/09/1996
18	Olympic Industries Limited	18/09/1996
19	BD. Thai Aluminum Limited	3/11/1996
20	Bangladesh Lamps Limited	24/11/1996
21	Eastern Cables Limited	29/06/1997
22	Singer Bangladesh Limited	25/11/2000
23	Apex Tannery Limited	4/10/1995
24	Eastern Housing Limited	23/09/1996
25	BOC Bangladesh Limited	22/06/1996
26	National Bank Limited	6/11/1995
27	Islami Bank Bangladesh	7/3/1996
28	Usmania Glass Sheet fac Ltd.	21/11/1995
29	GQ Ball pen Industries Limited	10/10/1996
30	British American Tobacco Bd. (BATBC)	15/05/1996

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