Exchange Listings in Japan – New Evidence Against Managers' Opportunism Hypothesis -

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Abstract

Papers investigating the stock performance of firms that have changed their trading domicile in the United States report a lingering post-listing negative drift in returns. Various empirical studies support the Managers' Opportunism Hypothesis behind this phenomenon, which argues that managers tend to apply for listing before a decline in performance. To test this hypothesis, we have measured the long-run post-listing performance of 938 stocks that moved exchanges between 1976 and 2002 in Japan. Contrary to the findings in the US, we have observed no such negative drift in our Japanese counterparts. We measure the abnormal return of our samples using the statistical methodology deemed to have minimum risk of misspecification. Japanese firms show significantly positive post-listing abnormal returns, casting doubt on the hypothesis in the international market. The result from the analysis of the impact of deregulation, however, may suggest alternative interpretations.

I. Introduction

For more than sixty years, researchers have examined common stock returns, mostly in the U.S., around the time at which stocks get listed on a major stock exchange. Although they use samples from various time periods and employ several analytical techniques, preponderance of earlier studies reported a similar pattern in price behavior; stocks tend to rise in price prior to listing but decline immediately thereafter. This pattern of stock price behavior is a common finding in the short-term event window and nothing unique to the exchange listings[2]. Several researchers including McConnell and Sanger (1987) focused on long-run post-listing returns and found puzzling evidence. The stocks that moved exchanges show significant negative abnormal returns after being listed for a prolonged period of time. This phenomenon is generally referred to as "post-listing negative drift" and viewed as a puzzle in the literature. Dharan and Ikenberry (1995) conducted a comprehensive study of the exchange listings and found the drift persists for as long as three years after listing. Among their 2889 sample firms,

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[2] Similar stock price movements are reported in index composite change events both in the U.S. and Japan.

small firms and firms with low institutional holdings perform particularly poorly which led them to adopt the managers' opportunism hypothesis to explain the puzzle. The post-listing negative drift occurs, they say, because of deliberate scheduling of the listing by the managers; i.e., managers intentionally apply for admission into a new exchange when their companies' performances are at their peak. The purpose of this paper is to test whether this hypothesis is supported in the Japanese market.

The exchange listings we deal with in this paper are in three categories: The shift from the Over the Counter market (JASDAQ)[3] to the Tokyo Stock Exchange 2nd section (TSE 2nd); the JASDAQ to Tokyo Stock Exchange 1st section (TSE 1st); and the TSE 2nd to the TSE 1st. The exchange listing procedure in Japan is similar to that of the United States. The TSE 1st has the severest listing criteria followed by the TSE 2nd, and the JASDAQ has the least demanding listing guidelines. Normally, a new venture firm applies for listing on the JASDAQ to start with, and in due course moves up to the TSE 2nd as it gains recognition and status in the market before it is finally allowed onto the TSE 1st if it continues to grow.[4] In contrast to American stock markets where segmentation is so arbitrary that one even finds multinational giants such as Microsoft and Intel in the NASDAQ, there are distinct differences between the Japanese markets. Most successful large corporations are listed on the TSE 1st and hitherto unlisted companies generally aspire to become a "TSE 1st –corporation." The prestige that accompanies TSE 1st membership is probably more than that of the NYSE. While the social connotation of listing may differ in the two countries, the listing standards are very much alike except for size requirement at the time of listing. In general, the TSE 1st's listing criteria may be slightly severer than that of NYSE. The managers' opportunism hypothesis predicts that our sample stocks should demonstrate severer post-listing negative drift, since the combination of higher reward for listing and the stricter criteria associated with it would induce more of the Japanese managers to list to the higher locale at opportune times.

In accordance with Dharan and Ikenberry's (1995) empirical studies, we measure the one-year, two-year and three-year performances after listing to a new trading domicile. We compute the samples' abnormal return through both cumulative abnormal return (CAR) and buy and hold abnormal return (BHAR). Although the BHAR is considered to be a viable choice in the long-run analysis, we compute CAR as well for the purpose of directly testing the Dharan and Ikenberry's (1995) hypothesis. Choosing

[3] The electronic system "JASDAQ" was introduced in 1991.
[4] The Tokyo Stock Exchange created a new market for venture firms,"Mothers" in 1999. The listing requirements for this market are even less demanding than that of JASDAQ. It does not require a listing firm to be profitable at the time of listing.

an appropriate benchmark is equally important. Fama and French (1992, 93) and Lakonishok, Shleifer, and Vishny (1994) all show that the stock returns tend to reflect its size and the book-to-market ratios. Barber and Lyon (1997) and Kothari and Warner (1997) indicate that the t-test is unsuitable for measuring abnormal returns over the long horizon. Lyon, Barber and Tsai (1999) suggest that researchers should prepare a carefully constructed reference portfolio and statistical inference should be based on the bootstrapping methodology. Therefore, we chose to create reference portfolios as the benchmark. We first divide the whole market universe inclusive of the TSE 1st, 2nd and the JASDAQ into seven by five reference portfolios based on their size and subsequently their book-to-market ratios. Since each one of these thirty-five reference portfolios reflects the size and the book-to-market factors, the sample stocks' excess returns over their respective reference portfolios are deemed to be adjusted for these risk factors. The statistical inference of the excess return is drawn from the empirically generated distribution created from 1000 randomly chosen portfolios.

Our findings about the behavior of the sample firms in Japanese markets provide interesting comparisons with those of the U.S. We observed no post-listing negative drift in either of the two measurements. Rather, our results show the exact opposite stock price behavior in the post-listing period. While the CAR calculation of the post-listing returns demonstrates a zig-zag pattern, the BHAR shows significantly positive figures in all observation periods. We conducted the same analysis on our classified samples based on industries. There was no evidence that the post-listing negative drift is occurring in any of our industry sub-samples. If managers' opportunism is indeed the cause of the negative drift in returns, it is clear that Japanese managers are not engaged in opportunistic listing behavior.

In August 1999, the Tokyo Stock Exchange implemented a major deregulation in listing to the TSE 1st and 2nd. This included relaxed standards on the required number of shares outstanding, net profit, net assets, dividends, etc. As a result, admittance into the TSE has been substantially easier since August 1999. The deregulation effect is manifested in two ways. Firstly, the number of firms listing on the TSE has dramatically increased. Secondly, sample stocks returns are polarized between the pre- and post-deregulation periods. The samples before the deregulation show strongly positive abnormal returns while the post-deregulation samples display negative abnormal returns, though not statistically significant. This suggests that the post-listing return is associated with the listing criteria. In other words, at least some of the factors that led to the selection of successful firms were incorporated in the previous listing criteria.

This paper is composed of five parts. Section II summarizes the prior studies on

the post-listing stock behavior and the broadly supported managers' opportunism hypothesis. Section III describes the data used and the methodology of this study. In Section IV the results are shown and interpreted, and in Section V we present our conclusions.

II. Hypotheses

McConnell and Sanger (1987) analyzed 2483 stocks that listed on the NYSE over the period 1926-1982. They found the stocks that moved exchanges showed a post-listing negative drift and it persisted for a year. They failed to discover a satisfactory explanation for the results and the negative drift was treated as a puzzle.

Dharan and Ikenberry (1995) re-examined the 2889 stocks that had moved exchanges over the period 1962-1990. They found a severer negative post-listing drift among those stocks and proposed that the negative drift is caused by opportunistic listing behavior by the corporate managers. If corporate managers predict future negative idiosyncratic events, they may choose to apply for the new exchange while their firms still satisfy listing guidelines. Dharan and Ikenberry (1995) substantiate this managers' opportunism hypothesis in two ways. One is to demonstrate that firms with small capitalization tend to perform more poorly. The small firms tend to have greater earnings volatility, and thus carry a risk of not being able to list to the new exchange unless they apply for it at opportune times. The other is to classify their sample firms based on institutional ownership and show that the higher the ownership the less severe the post-listing negative drift. They note that in the U.S, the degree to which firms are held by institutions is considered to be a proxy for the degree of "national interest," and these firms are therefore less prone to opportunistic scheduling of listings. While McConnell and Sanger (1987) used the market index as a benchmark, Dharan and Ikenberry (1995) used a benchmark controlling for size and book-to-market.

Papaioannou et al. (2003) investigated whether post-listing operating performance is consistent with the drift. They used 391 samples from 1978 to 1996 and found the operating performances of sample stocks tend to be in line with their stock price movements. Their earnings improved in the years before listing, and in most cases peaked in the year right before listing. Their findings were also consistent with the managers' timing hypothesis. The fact that the effect was more profound in small NASDAQ firms than in large firms was consistent with what Dharan and Ikenberry (1995) had reported. More recently, Webb (1999) applied a unique methodology in an attempt to clarify the relationship between the pre-listing performance and the post-listing drift. They concluded that the pre-listing period performance had a negative

relationship with the post-listing equivalent and thus supported the managers' opportunism hypothesis. However, the scope of their study was restricted to 250 days after the listing and the phenomenon they witnessed may be a result of short-term speculative rise and reverse reaction. Hwang and Jayaraman (1993) also investigated the Japanese stock exchange listings, but only in a short-term event window, so their results were not conclusive. In order to substantiate the managers' opportunism hypothesis, a long-run analysis is necessary.

The purpose of this study is to test the managers' opportunism hypothesis from two angles. One is through an examination of the long-run post-listing returns of stocks that moved exchanges between 1976 and 2002. The other is through a comparison of returns before and after the 1999 deregulation.

III. Data and Methodologies

a. Japanese Exchanges and Listing Procedure

In Japan, there are six organized exchanges. Five of them are organized exchanges located in major metropolitan cities: Tokyo, Osaka, Nagoya, Fukuoka, and Sapporo. JASDAQ[5] is the over the counter market whose member firms are registered with the Japan Securities Association. Historically, Japanese companies were dependent on indirect finance rather than on the capital markets. Most companies borrowed from banks, so access to the capital markets remained a restricted privilege for established corporations among the listed firms. In 1983, in response to the growing need for direct finance on the part of small companies, access to the capital markets was liberalized, making it possible to procure capital through secondary equity offerings on JASDAQ. Since then, a growing number of start-up firms have listed on JASDAQ and a total of 1627 companies had been listed on JASDAQ cumulatively by the time it obtained a license to be an organized exchange in 2004. Among the six exchanges, the largest is the Tokyo Stock Exchange (TSE), which has more than 95% of the total market value, followed by the Osaka Stock Exchange (OSE). Since all of the large corporations in the OSE are also listed in the TSE, for an examination of the Japanese listings it is only necessary to analyze the TSE and JASDAQ. Recently, in order to cope with the growing demand for venture firms to go public, Mothers[6] and NASDAQ Japan (which later changed its name to Hercules) were created in the TSE and the OSE, respectively.

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[5] JASDAQ was not an organized exchange until 2004.

[6] As of August 2004, there are 100 firms listed on Mothers. JASDAQ has 929 firms and TSE 2nd has 570 firms. TSE1st has 1561 firms. Total market capitalization of the four markets is 366 trillion yen, 93.4% of which belongs to TSE 1st, 2.4% to TSE 2nd, 0.9% to Mothers and 3.3% to JASDAQ.

However, there is no single firm that has changed listing locale from Mothers or Hercules as of 2004 March. Therefore, our target of analysis is the following three patterns: the move from JASDAQ to the TSE 2nd; the TSE 2nd to the TSE 1st ; and the JASDAQ to the TSE 1st.

Table I summarizes the guidelines for different exchanges that a firm has to meet. These pertain to the size of the shareholders' equity, the level of the earnings, distribution and the market value at IPO. There are other intricate criteria that applying firms can alternatively satisfy to be allowed to list. However, we only show representative guidelines for the two countries, with figures converted in US dollars for ease of comparison. A glance at the listing requirements reveals a conspicuous difference in the market value required at IPO. In the TSE 1st, a listing firm must be larger than $500 mil, which is roughly nine times the size required for NYSE listings. Other criteria are, by and large, equivalent, if not slightly stricter in Japan.

Japanese stock exchanges are hierarchical. The entry-level market for start up companies is the new market, 'Mothers', created by the TSE in 1999 as an exchange to facilitate the incubation of venture companies. Naturally, listing criteria are lenient because it focuses more on a firm's future potential rather than on historical performance. Even without any track record of making profit, a venture firm can be allowed to list on Mothers if it is deemed to have growth potential. The traditional over the counter market, JASDAQ, also provides opportunities for firms to list without severe screening, though a certain level of profitability is required. TSE 2nd sets rigid requirements for the listing firms, from the number of shareholders to the firm's continuity. TSE 1st has the severest listing criteria and firms that aim to be listed there are required to have a good past performance. Consequently, well known established enterprises are mostly in the TSE 1st , and thus it bestows social recognition on its members.

Comparing the managers' incentives to list to the higher locale in the two countries, one could argue that Japanese managers have an equivalent if not stronger motivation to do so. The Japanese managers face severer listing criteria. At the same time, the hierarchical nature of the market segmentation makes the reward for listing to the upper locale considerable. Therefore, the percentage of managers choosing an opportune time for successful listing should be larger in the Japanese sample firms. If so, the post-listing negative drift should appear with a stronger magnitude. In the same line of thinking, we can assume that the post-listing negative drift should appear to be severer before deregulation[7] than after. As manifested in the number of new listings

[7] The Tokyo Stock Exchange had an earnings-per-share criterion before 1999. The EPS criterion made the

after 1999, the abolishment of several criteria allowed many firms to list that would have been rejected otherwise. The relative ease of exchange listing since deregulation should mitigate managers' opportunism.

Table Ⅰ

Listing Requirements as of 2003

The table shows a rough comparison of listing guidelines in the U.S and Japan. There are other detailed criteria for listings. All yen values are converted in U.S. dollar at the exchange rate 100 yen per dollar.

	JASDAQ	TSE 2nd	TSE 1st
Shareholders' Equity	$2mil	$10mil	$10mil
Earnings	Over $5mil for the previous year	a. Over $4mil for the most recent year and over $1mil in the year before b. Over $6mil for the past 3 years (1st year should exceed minimum $1mil and the most recent year should exceed $4mil)	The same as TSE 2nd
Distribution	300 public shareholders	1000 public shareholders	2200 public shareholders
Market Value at IPO	$10mil	$20mil	$500mil

	NASDAQ	ASE	NYSE
Shareholders' Equity	$15mil	$4mil	-
Earnings	$1mil in 2 of the last 3 years	$750k in 2 of the last 3 years	$10 mil in the last 3 years
Distribution	400 public shareholders and 1.1m publicly held shares	800 public shareholders and 500k publicly held shares	2200 public shareholders and average monthly volume of 100k shares
Market Value at IPO	-	$3mil	$60mil

Source:TSE Fact Book , ASE web page, NYSE web page

b. Samples

profitability requirement severer than that of the NYSE.

Our sample firms include stocks traded on the JASDAQ and moved to either the TSE 2nd or the TSE 1st, or which traded on the TSE 2nd and moved to the TSE 1st. We deal with stocks in these three markets since the newly created Mothers and Hercules have not nurtured firms that are eligible in other trading locations as of 2002. Our examination begins in January 1976. We collected data from the Tokyo Stock Exchange Fact Book. In our period of analysis, there was a total of 938 exchange listings excluding IPOs. Out of 938 samples, 299 firms moved from JASDAQ to TSE 2nd and 605 moved from TSE 2nd to TSE 1st. There were 34 stocks that directly moved from JASDAQ to TSE 1st. The number of firms directly listed to the TSE 1st from JASDAQ is small because all firms were required to move up to TSE 1st via TSE 2nd before 1998. The total of 938 sample firms includes companies that have insufficient return data for the period of analysis. If a sample has less than 12 months, 24 months or 36 months of data, the sample is counted only for the period for which it has sufficient data. For instance, if a sample has only 11 months post-listing return data, it will be completely excluded from the analysis. If a sample has 13 months data, it will be included in the 12-month calculation but in neither the 24-month nor the 36-month calculation. Likewise, if a sample has less than 36 months post-listing return, it will be excluded from the 36-month BHAR calculation. The 299 samples for JASDAQ to the TSE 2nd include firms that further list on to other exchanges in a rather short period of time. Those firms that move out to other exchanges (mostly to the TSE 1st) in the analysis period will also be excluded from the sample in order to eliminate the exchange listing influence over the post-listing return of JASDAQ to TSE 2nd. Thus the total number of firms subject to analysis is 886 for 12-month return, 789 for 24-month return, and 703 for 36-month return.

Table II provides the sample classification by year. Approximately ten to thirty firms moved exchanges in most of the years. It is notable that the number more than doubles after 1997 even in comparison with figures from the Japanese bubble period of 1988 to 1991. Particularly, the number increases by a substantial margin after August 1999, when the TSE implemented a deregulation policy. Basically, the Exchange examines the listing application based on the following seven criteria: Outstanding number of shares; percentage owned by minority holder; number of shareholders; years since incorporation; market capitalization; net asset value; and the level of profit. Upon deregulation, some standard requirements within these criteria were abolished and some were relaxed. Quite a few applications had been rejected due to a failure to satisfy the required number of shareholders and earnings per share. After the former requirement was eased and the latter was lifted, the number of listings started to rise in 1999 and

peaked in 2000.

Table II

This table shows the frequency distribution of 983 firms that changed their trading domiciles over the period 1976-2002 .

	Total	JASDAQ to TSE 2nd	TSE 2nd to TSE 1st	JASDAQ to TSE 1st
	938	299	605	34
Year				
1976	11	0	11	0
1977	12	0	12	0
1978	16	0	16	0
1979	13	0	13	0
1980	13	0	13	0
1981	12	0	12	0
1982	9	0	9	0
1983	23	0	23	0
1984	32	0	32	0
1985	15	0	15	0
1986	31	7	24	0
1987	28	7	21	0
1988	32	8	24	0
1989	26	1	25	0
1990	34	6	28	0
1991	39	6	33	0
1992	13	6	7	0
1993	12	5	7	0
1994	16	12	4	0
1995	28	11	17	0
1996	46	12	34	0
1997	68	35	33	0
1998	48	26	21	1
1999	75	44	23	8
2000	126	49	62	15
2001	95	38	50	7
2002	65	26	36	3

c. Methodology: Benchmark Portfolios and Abnormal Returns

i. The calculation of long-run abnormal returns

There are a number of methodologies available for measuring abnormal return of stock prices. For the short-term analysis of events, the common procedure is to use the

cumulative abnormal return (CAR) computed from the market model, and inferences are made on t-statistics. Because of the brevity of the event window, the risk of misspecification from using t-statistics in such a manner is considered limited. However, the measurement of long-run abnormal returns is less straightforward. One of the two approaches that Lyon, Barber and Tsai (1999) recommend is to compute buy and hold abnormal returns (BHAR)[8] calculated using carefully constructed reference portfolios. The BHAR is defined as the difference between the sample stocks' buy and hold return (BHR) minus the expected BHR of the stock. The BHAR for stock i for τ month is computed as

$$BHAR_{i\tau} = \prod_{t=1}^{\tau}[1 + R_{it}] - \prod_{t=1}^{\tau}[1 + E(R_{it})] \qquad (1)$$

where R_{it} is the raw return (with dividends) for sample stock i in month t. $E(R_{it})$ is the sample stock's expected return at month t. Statistical inference is based on the empirically generated distribution of long-run BHAR. BHAR yields well-specified test statistics in random samples. Therefore, we mainly use this approach to compute our sample abnormal returns. However, since the initial motivation of our study is to test the managers' opportunism hypothesis presented by Dharan and Ikenberry (1995), we compute the cumulative abnormal return as well for the purpose of parallel comparison of the results in the two different markets. The cumulative abnormal return is expressed as;

$$CAR_{\tau} = \frac{1}{n}\sum_{i=1}^{n} CR_{i\tau} \qquad (2)$$

$$CR_{i\tau} = \sum_{t=1}^{\tau} AR_{it}, \qquad (3)$$

$$AR_{it} = R_{it} - E(R_{it}), \qquad (4)$$

where n is the number of samples, R_{it} is the sample i's return at month t and $E(R_{it})$ is the expected sample return at month t.

ii. Constructing Reference Portfolios

Firms getting listed to a new exchange tend to have a positive pre-listing return and are subject to a self-selection bias.[9] Like the samples used by Dharan and Ikenberry (1995), our sample firms are generally small sized and have low book-to-market ratios.

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[8] Barber and Lyon (1997) argue that cumulative abnormal returns can lead to incorrect inference regarding long-horizon return performance and therefore buy and hold abnormal return is considered to be a better measure.

[9] The market model assumes that returns in the prelisting period respond only to systematic risk. In actuality, pre-listing return is positive due to a self selection bias in firms choosing to list (Sanger and McConnell (1986)). When such stocks are examined using the market model, the intercept will be biased upward.

To avoid potential problems, we measure abnormal performance through procedures that are not so sensitive to parameter estimation. Our procedure uses size and book-to-market adjusted reference portfolios. In constructing the reference portfolios, we use all the available TSE 1st/TSE 2nd/JASDAQ firms on the Nomura Aurora Data Base[10] as of June 2004. Some of the sample firms that no longer exist (due to merger[11] or bankruptcy) as of June 2004 were excluded from the analysis. The reference portfolios are formed on the basis of firm size and book-to-market ratios in August of each year, 1976 through 2002. We construct size reference portfolios as follows:

1. We calculate firm size by multiplying share price by the outstanding number of shares in August of each year for all firms (market capitalization).
2. In August of year t, we rank all TSE 1st firms on the basis of market capitalization and form size quintile portfolios based on these rankings.
3. JASDAQ and TSE 2nd are placed in the appropriate TSE 1st size quintile based on their August market capitalization.
4. We further divide the smallest size quintile (quintile-1) into three groups (quintile-1a, 1b, 1c) on the basis of size rankings without regard to exchange.

We thus obtain seven size reference portfolios with quintile-5 being the largest and quintile-1c the smallest. Just as NASDAQ is predominantly populated with small firms in the U.S., the number of small firms in JASDAQ and TSE 2nd vastly outnumbers those in TSE 1st. This procedure leaves many more firms in quintile-1, therefore we further divide them into three groups. Once the size reference portfolios are created, we split up each of the seven size reference portfolios into five groups based on the book-to-market ratios' rankings within the size portfolio. The book-to-market ratios are computed using the book value of the common stock reported on a firm's balance sheet in year t-1 divided by the market capitalization in March of year t-1. A total of 35 (7x5) reference portfolios are thus created and the equal weighted monthly average return of the reference portfolios is computed from September of year t to August of year t+1, when a new set of reference portfolios is created. The number of firms contained by each of the 35 cells varies from 62 to 127 firms as of 2004.[12].

We measure the sample firms' BHAR based on the following procedure:

1. We calculate first-year, second-year and third-year annual buy and hold return (ABHR) for each of the samples, and average them.

[10] Nomura Aurora Data base is the affiliated on-line data providing service of Nomura Research Institute.

[11] Merged firms disappear from the market while merging firms usually keep the security identity code. When a sample firm is the merging firm, it is subject to analysis.

[12] The largest three quintiles are mostly dominated by TSE 1st stocks. Firms in the smallest quintile outnumber firms in the largest quintile since the majority of JASDAQ firms belong to this category. In 1976, since the number of firms in the universe is smaller, there are only 28 firms in the smallest cell and 44 firms in the largest..

$$ABHR_1 = \frac{1}{n_1}\sum_{i=1}^{n_1}\left[\prod_{t=1}^{12}(1+R_{it})-1\right] \quad (5)$$

$$ABHR_2 = \frac{1}{n_2}\sum_{i=1}^{n_2}\left[\prod_{t=13}^{24}(1+R_{it})-1\right] \quad (6)$$

$$ABHR_3 = \frac{1}{n_3}\sum_{i=1}^{n_3}\left[\prod_{t=25}^{36}(1+R_{it})-1\right] \quad (7)$$

where n_1 is the number of sample firms subject to analysis for the first year, n_2 is for the second year and n_3 is for the third year.

2. We use the average monthly return of the respective reference portfolio as the benchmark.

$$E(ABHR_1) = \frac{1}{n_1}\sum_{i=1}^{n_1}\left[\prod_{t=1}^{12}(1+R_{RP_i,t})-1\right] \quad (8)$$

$$E(ABHR_2) = \frac{1}{n_2}\sum_{i=1}^{n_2}\left[\prod_{t=13}^{24}(1+R_{RP_i,t})-1\right] \quad (9)$$

$$E(ABHR_3) = \frac{1}{n_3}\sum_{i=1}^{n_3}\left[\prod_{t=25}^{36}(1+R_{RP_i,t})-1\right] \quad (10)$$

3. We compute annual buy and hold abnormal return (ABHAR) for each year by simply subtracting $E(ABHR)$ from $ABHR$. BHAR can be obtained by compounding for the desired period. For example, 36-month BHAR is,

$$\text{36-month } BHAR = \prod_{y=1}^{3}\left[1+ABHR_y\right]-\prod_{y=1}^{3}\left[1+E(ABHR_y)\right] \quad (11)$$

We measure the sample firms' CAR based on the following procedure:

1. Monthly abnormal return is computed as in (4) for every sample in question. Expected return of the benchmark is the equal weighted average of the stocks in the respective reference portfolio.
2. For every post-listing month, all sample abnormal returns are averaged cross-sectionally to obtain monthly average abnormal return.
3. We cumulate the monthly average abnormal return for the period of analysis.

iii. Statistical Inference

Barber and Lyon (1997) documented that long-horizon abnormal returns calculated from the market index and reference portfolios were biased. Only the control firm approach was found to detect unbiased abnormal returns. Kothari and Warner (1997) recommended a bootstrapping methodology rather than using t-test. When the analysis relies on a traditional event study framework and the calculation of BHAR

using a carefully constructed reference portfolio, Lyon, Barber and Tsai (1999) recommend that we should use an empirically generated distribution of mean long-run abnormal returns from pseudo-portfolios. If there are n firms in our sample, the same n number of randomly chosen firms (from their respective reference portfolios) is used to create another set of portfolio set. We call this randomly created portfolio a pseudo-portfolio. The pseudo-portfolio contains one randomly chosen firm for each sample firm, matched in time with similar size and book-to-market characteristics. After forming a single pseudo-portfolio, we compute 12-month, 24-month, and 36-month BHR of each stock in the portfolio and deduct the equivalent period BHR of size/book-to-market reference portfolio as was done for the original sample. This yields one observation of the BHAR. This entire process is repeated until we have 1000 observations of pseudo-portfolio abnormal returns. These 1000 mean abnormal return observations are used to approximate the empirical distribution of mean long-run abnormal returns. The null hypothesis is that the mean of the distribution is equal to the sample mean.

IV. Post-listing Stock Performance in Japan

a. Post-listing cumulative abnormal return and buy and hold abnormal return

Figure-1 illustrates the post-listing cumulative abnormal return, starting with the first calendar month up to the 36^{th} month following listing. This includes all exchange listings that took place between January 1976 and December 2002. The abnormal returns are measured based on the size and book-to-market reference portfolios. Contrary to the findings by Dharan and Ikenberry (1995), the cumulative post-listing abnormal return remains positive for most of the period. There is no sign of negative drift occurring in any segment of our observation horizon. .

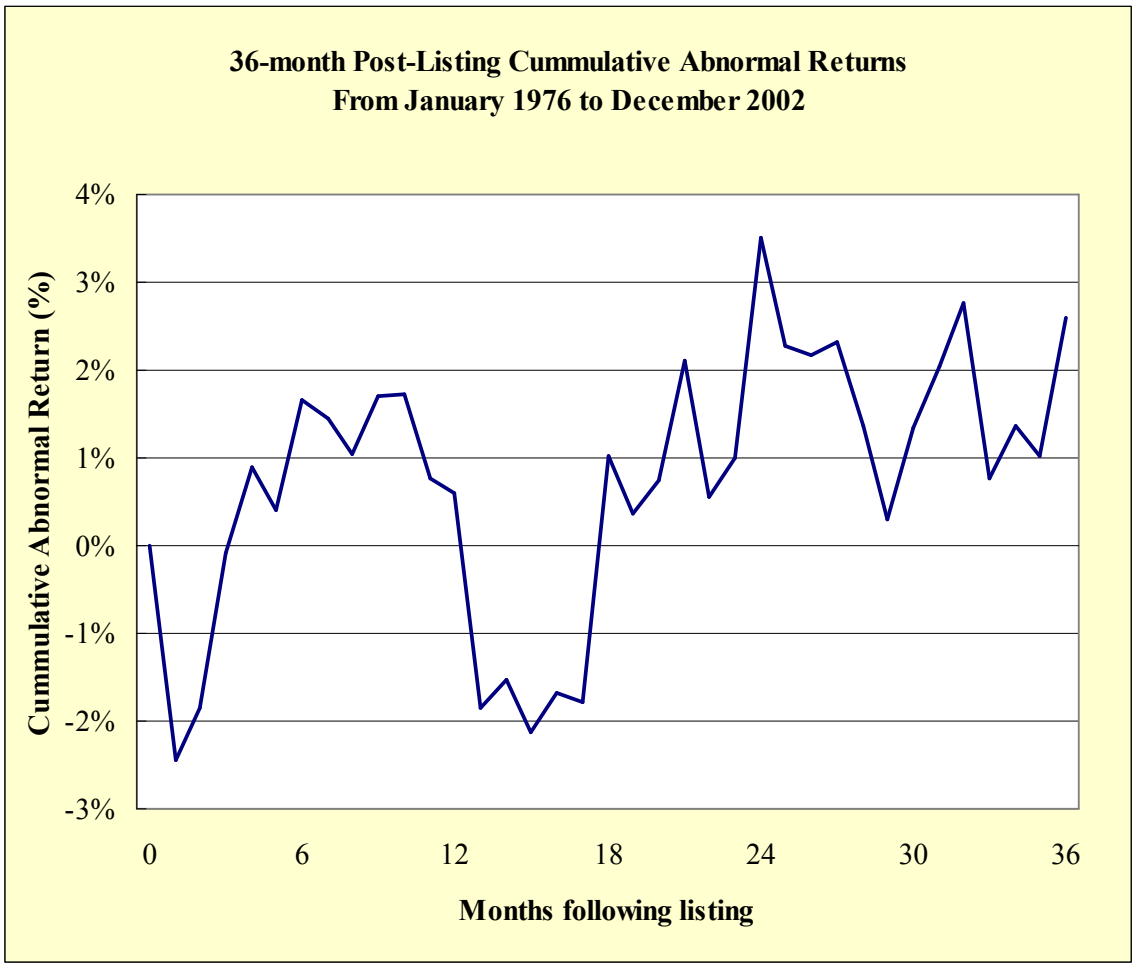

Figure-1: Post-listing cumulative abnormal returns 1976 through 2002. This figure plots post-listing cumulative abnormal returns for 36 months for firms that moved their trading domiciles. Abnormal returns are measured based on the size and book-to-market adjusted reference portfolios from the first calendar month following listing.

Table III reports the CAR calculation for the 12-month, 24-month and 36-month periods for three different categories, and the total. Out of 938 sample firms, 52 firms are excluded due to lack of data, leaving 886 firms in the 12-month CAR calculation. Similarly, 149 and 235 firms are dropped from the 24-month and 36-month BHAR calculations respectively. As Figure-1 illustrates, little evidence of post-listing negative drift is found. It seems that TSE 2nd to TSE 1st samples tend to have a negative post-listing return while JASDAQ to TSE 2nd samples have a positive, though none of the abnormal returns are statistically significant.

Table IV summarizes the BHAR for the same samples. In all three observation periods, BHAR appears to be significantly different from zero. The 12-month BHAR of 2.29% has an empirical p-value of 0.03, which means that the samples' 2.29% abnormal return falls in the 30th place from the highest observation of 1000 BHARs of the pseudo-portfolios. Therefore the samples' 12-month BHAR is statistically significantly positive at a 90% confidence interval. Figure-2 illustrates the distribution of the BHAR of 1000 pseudo-portfolios. The median value of the distribution is -0.88%, with the highest observation being 4.26% and the lowest -5.29%. Noteworthily, the post-listing rise in all categories of exchange listings is rarely witnessed. The BHAR of TSE 2nd to TSE 1st samples demonstrates directionless post-listing returns, whereas the JASDAQ to TSE 2nd samples appear to perform extremely well in the post-listing period.

Table III
Long-Run Post-Listing CAR of Stocks That Moved Exchanges Between 1976 and 2002

		n	Sample CR	RP CR	CAR	Empircal P
Total	12-Month	886	-1.32%	-1.26%	-0.06%	0.472
	24-Month	789	5.74%	4.31%	1.42%	0.209
	36-Month	703	13.33%	14.13%	-0.80%	0.341
TSE 2nd to TSE 1st	12-Month	597	-0.53%	0.96%	-1.49%	0.149
	24-Month	584	7.36%	7.69%	-0.33%	0.457
	36-Month	542	13.94%	17.56%	-3.63%	0.069
JASDAQ to TSE 2nd	12-Month	256	0.39%	-2.98%	3.37%	0.066
	24-Month	174	8.69%	3.46%	5.23%	0.074
	36-Month	132	21.25%	13.30%	7.96%	0.052
JASDAQ to TSE 1st	12-Month	33	-28.70%	-23.45%	-5.25%	0.199
	24-Month	31	-43.93%	-40.95%	-2.99%	0.275
	36-Month	29	-40.16%	-32.30%	-7.86%	0.193

Table III: This table reports the buy and hold abnormal returns of the samples computed using size and book-to-market adjusted reference portfolios as a benchmark. The CAR is calculated as the samples' CR minus the reference portfolios' CR for the same period. The empirical p-value is estimated from the distribution of the 1000 pseudo-portfolios' CAR.

Table IV
Long-Run Post-Listing BHAR of Stocks That Moved Exchanges Between 1976 and 2002

		n	Sample BHR	RP BHR	BHAR	Empircal P
Total	12-Month	886	2.36%	0.07%	2.29%	**0.03***
	24-Month	789	12.97%	7.39%	5.58%	**0.008****
	36-Month	703	23.87%	19.77%	4.10%	**0.034***
TSE 2nd to TSE 1st	12-Month	597	1.77%	2.18%	-0.42%	0.582
	24-Month	584	11.19%	10.58%	0.61%	0.201
	36-Month	542	18.88%	23.30%	-4.42%	0.282
JASDAQ to TSE 2nd	12-Month	256	6.76%	-2.11%	8.87%	**0.013****
	24-Month	174	20.93%	6.00%	14.93%	**0.021****
	36-Month	132	47.24%	18.40%	28.84%	**0.003*****
JASDAQ to TSE 1st	12-Month	33	-20.91%	-21.22%	0.31%	0.479
	24-Month	31	-9.24%	-33.16%	23.92%	**0.008****
	36-Month	29	-4.23%	-25.63%	21.41%	0.059

Table IV: This table reports the buy and hold abnormal returns of the samples computed using size and book-to-market adjusted reference portfolios as a benchmark. The BHAR is calculated as the samples' BHR minus the reference portfolios' BHR for the same period. The empirical p-value is estimated from the distribution of the 1000 pseudo-portfolios' BHAR. "***,**,*" indicates 1%, 5%, 10% significance levels respectively.

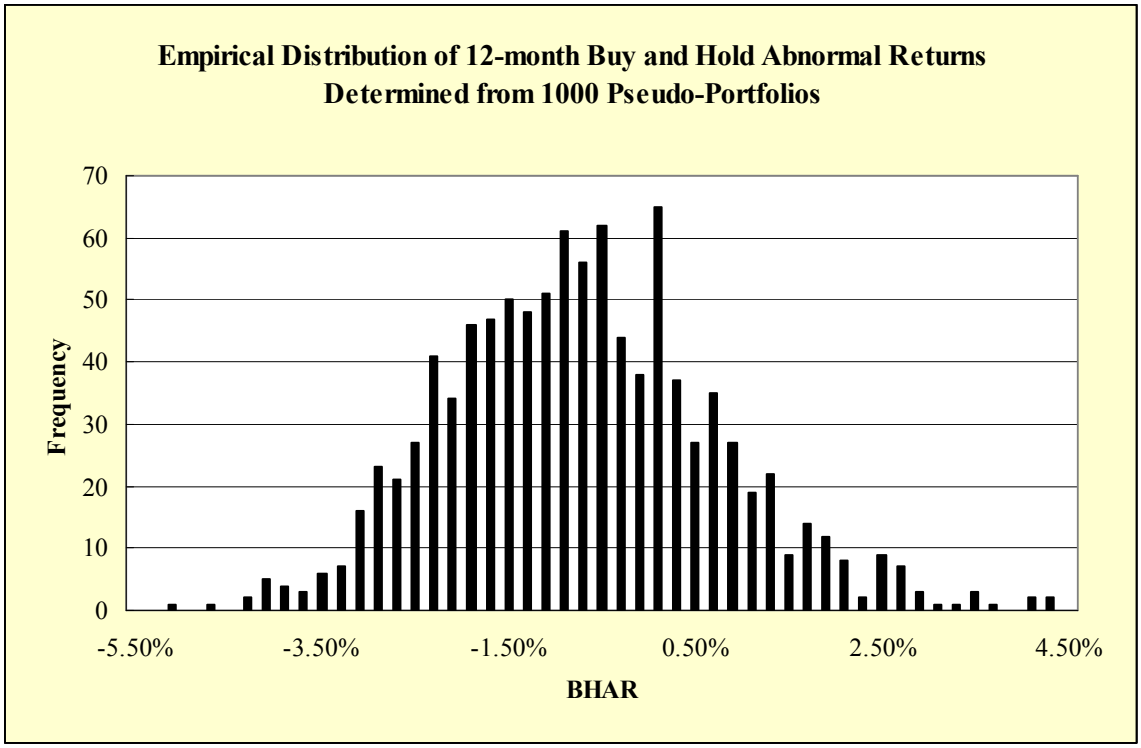

Figure-2: The empirical distribution of 12-month BHAR determined from the 1000 pseudo-portfolios. Each one of the pseudo-portfolios contains 886 randomly chosen stocks that are matched in time with similar size and book-to-market ratios as our original samples.

b. Industry effect

Industry representation in the sample firms is quite broad. However, if a certain sector is growing rapidly in the sample period, the post-listing rise may be due to that particular growing sector. For the purpose of comparing industry performances, we compute the 10 most common industries' BHARs and empirical p-values in the same manner as the total samples. Table V reports the samples' performance by industry. Retailers are the most common industry for firms switching exchanges, and their stocks show significant gain in the 12-month and 24-month post-listing periods. Other finances and service sectors also perform well. Overall, the majority of the top 10 industries show positive BHAR. The construction sector, however, which was the main victim of the bubble burst and the subsequent public sector spending cuts, is the sole industry that shows significant decline in the 36-month period. Across all industries, negative BHAR remains insignificant at a 10% confidence interval. Overall, effects of industry clustering, if any, are likely to be minor.

Selection of a control firm reflecting the industry would also allow us to investigate the industry effect of the abnormal returns. Therefore, we have applied the control firm approach to delve into this issue. For each one of our samples, we pick one control firm through the following three steps. We first narrow down the candidates by industry classification. Then, we choose firms whose market capitalization falls between 70% and 130% of our samples. Finally, we select one firm, which has the closest book-to market ratio to our sample. We calculate the cumulative abnormal return using the control firm thus selected as a benchmark. However, the results show little difference from our CAR results using reference portfolios.[13]

[13] We also have selected a control firm using only size and book-to-market ratios. The difference in cumulative abnormal returns between the two separate selection procedures is minor. This indicates that the industry factor is not affecting the results.

Table V
Post-Listing Buy and Hold Abnormal Returns by Industry Classification

Industry	n		BHAR	Empirical-P
	49	12-Month	-7.08%	0.090
Construction	49	24-Month	-13.31%	0.060
	46	36-Month	-22.39%	0.029*
	21	12-Month	-8.03%	0.270
Metal Products	20	24-Month	-15.36%	0.203
	19	36-Month	-4.86%	0.565
	57	12-Month	-4.05%	0.744
Machinery	53	24-Month	-4.38%	0.592
	49	36-Month	2.59%	0.237
	96	12-Month	1.31%	0.279
Electronics	84	24-Month	5.20%	0.139
	78	36-Month	9.94%	0.126
	40	12-Month	-4.02%	0.328
Other Manufacturing goods	36	24-Month	2.11%	0.272
	31	36-Month	11.10%	0.118
	107	12-Month	2.59%	0.193
Wholesale	93	24-Month	11.14%	0.069
	87	36-Month	8.16%	0.138
	119	12-Month	17.46%	0.023**
Retail	101	24-Month	24.43%	0.028*
	84	36-Month	17.80%	0.084
	24	12-Month	-10.70%	0.078
Banks	24	24-Month	-18.76%	0.062
	24	36-Month	-24.31%	0.075
	32	12-Month	15.46%	0.05*
Other Finance	23	24-Month	17.19%	0.049*
	23	36-Month	15.42%	0.125
	123	12-Month	1.27%	0.260
Service	107	24-Month	11.97%	0.03*
	85	36-Month	13.76%	0.043*

Table V: This table illustrates the buy and hold abnormal returns for the samples categorized by industry. The industry classification is based on the Tokyo Stock Exchange 33 industry codes. The table shows the top 10 industries which covers 75% of the total samples.

c. Deregulation effect

The Tokyo stock exchange deregulated the requirements for listing in 1999 for the

purpose of encouraging young and growing enterprises to list on the TSE. The deregulation policy had the intended effect. The three-year average number of exchange listings after 1999 more than doubled from the three-year average before 1999. Whether the post-listing performance has any relationship with the listing requirements can be seen in the following comparison shown in Table VI. In pre-1999 period, the post-listing performance is significantly positive. Particularly, firms that are listing to the TSE 1st show a vigorous rise in price. The stocks that list to TSE 2nd have a milder rise comparatively but are still positive in all three observation periods. In the post-1999 period, however, the 12-month, 24-month and 36-month BHAR have all become negative, though not statistically different from zero.

In summary, two findings emerge from our study. One is that the post-listing negative drift predicted by the managers' opportunism hypothesis is not evident in stocks that move exchanges in Japan. Instead we found statistically positive post-listing performance in our sample stocks prior to deregulation in 1999, and after 1999 no statistically significant drift in either direction. The other related finding is that there was a clear negative shift in performance following deregulation. This is also contrary to what the managers' opportunism hypothesis would lead one to expect.

These findings can be interpreted in two ways. The evidence from the Japanese markets disproves the assumption that strict listing criteria provide managers with incentive to engage in opportunistic listing behavior leading to post-listing negative drift, and this could be interpreted as a refutation of the managers' opportunism hypothesis. Another interpretation, however, is that strict listing guidelines impose a prohibitively high hurdle to those very firms that would otherwise opportunistically time their listings. In the pre-deregulation period such firms would have been rejected, and thus our samples consist only of firms with sound fundamentals, and in the post-deregulation period failure to eliminate those firms from the samples would cause the negative shift in performance. In the latter interpretation, one could argue that our evidence supports the managers' opportunism hypothesis.

Table VI
Post-Listing BHAR and Empirical p-values Before and After Deregulation

		n	Sample BHR	RP BHR	Diff.	Empirical P
Pre-deregulation (Jan 1976 - Jul 1999)	Year 1	569	12.11%	6.96%	5.15%	0.004***
	Year 2	523	12.03%	10.07%	1.96%	0.159
	Year 3	504	7.86%	9.08%	-1.23%	0.445
	12-Month	569	12.11%	6.96%	5.15%	0.004***
	24-Month	523	25.59%	17.73%	7.86%	0.060
	36-Month	504	35.46%	28.43%	7.04%	0.029*
		n	Sample BHR	RP BHR	Diff.	
Post-deregulation (Aug 1999 - Dec 2002)	Year 1	317	-15.12%	-12.29%	-2.83%	0.175
	Year 2	266	7.07%	1.88%	5.20%	0.029*
	Year 3	199	14.18%	17.72%	-3.55%	0.231
	12-Month	317	-15.12%	-12.29%	-2.83%	0.175
	24-Month	266	-9.12%	-10.64%	1.52%	0.180
	36-Month	199	3.77%	5.19%	-1.43%	0.595

Table VI: This table reports the post-listing performance before and after the change of listing requirements in August 1999. The upper row shows the single year performance and the lower indicates compounded performance. The BHAR is calculated as the samples' BHR minus the reference portfolios' BHR for the same period. The empirical p-value is estimated from the distribution of the 1000 pseudo-portfolios' BHAR. "***,**,*" indicates 1%, 5%, 10% significance level respectively.

V. Conclusion

In this paper, we examined the long-run returns of stocks that list on either the TSE 1st or the TSE 2nd for the period between 1976 and 2002. We employed one of the statistical methodologies propounded by Lyon, Barber and Tsai (1999), which is deemed to have less risk of misspecification than the t-test. The purpose of our study was two fold. One was to investigate whether the long-run performance of the Japanese firms that moved their trading locale shows a significant post-listing negative drift in returns as evidenced in the U.S. This was to test the managers' opportunism hypothesis documented by Dharan and Ikenberry (1995). Secondly, we were interested in the impact of the deregulation policy implemented by the exchange in August 1999.

Our findings turned out to be the exact opposite of our initial expectations. Managers' opportunism, we thought, should drive Japanese stocks to a severer post-listing negative drift, because the opportunistic incentives for Japanese managers are greater than their U.S. counterparts. Our prediction was based on the severer listing criteria in Japan as well as the hierarchical nature of the market segmentation. However,

the results show, on the contrary, that there is no post-listing negative drift in the Japanese stock exchange listings, and no proof is found for Japanese managers timing their listing applications. Rather, stocks that changed their trading domiciles tend to increase in value. When their performance is measured using BHAR, the bootstrapping procedure generates empirical p-values that are significantly positive.

The lenient listing criteria adopted in 1999 have changed the picture dramatically. While the number of firms listing to the TSE tripled in the 1999-2001 period, the sample stocks' performance in this post deregulation period drop markedly. This striking contrast of pre- and post-deregulation performances of the stocks may have uncovered an important factor that has much to do with post-listing performance.

The managers' opportunism hypothesis would seem to predict that demanding listing criteria should lead to a greater incidence of managers' opportunism, and therefore to negative post-listing returns. We have found the opposite: stricter criteria appear to lead to the selection of more successful companies. Further research is indicated to determine to what extent the post-deregulation decline in post-listing performance can be attributed to more lenient listing guidelines, to managers' opportunism, or to both.

References

Barber, M. Brad and John D. Lyon, 1997, Detecting long-run abnormal stock returns: The empirical power and specification of test statistics, *Journal of Financial Economics 43, 341-372*

Dharan, G. Bala and David L. Ikenberry, 1995, The Long-run Negative Drift of Post-Listing Stock Returns, *Journal of Finance Vol. 50, No.5 1547-1674*

Fama, Eugene F. and Kenneth R.French, 1992, The cross-section of expected stock returns, *Journal of Finance 47, 427-465*

Fama, Eugene F. and Kenneth R. French, 1993, Common risk factors in the returns on bonds and stocks. *Journal of Financial Economics, 33, 3-53*

Hwang, Chuan-Yang., and Narayanan Jayaraman, 1993, The post-listing puzzle: Evidence from Tokyo Stock Exchange listings, *Pacific-Basin Finance Journal 1, 111-126*

Kadlec, B. Gregory, and John J. McConnell, 1994, The effect of market segmentation and illiquidity on asset prices: Evidence from exchange listings, *Journal of Finance 49, 611-636*

Kothari, S. P. and Jerold B. Warner, 1997, Measuring long-horizon security price performance, *Journal of Financial Economics 43, 301-339*

Lakonishok, J, Andrei Shleifer and Robert W. Vishny, 1994, Contrarian investment, extrapolation, and risk. *Journal of Finance 49, 454-477*

McConnell, John J., and Gary C. Sanger, 1987, The puzzle in post-listing common stock returns, *Journal of Finance 42, 119-140*

McConnell, John J., Heidi J. Dybevik, David Haushalter and Erik Lie, 1996, A survey of evidence on domestic and international stock exchange listings with implications for markets and managers, *Pacific-Basin Finance Journal 4, 347-376*

Papaioannou, J. George, Nickolaos G. Travlos and K.G. Viswanathan, 2003, The Operating Performance of Firms That Switch Their Stock Listings, *The Journal of Financial Research Vol.26, No.4, 469-486*

Sanger, Gary C., and J. J. McConnell, 1986, Stock exchange listings, firm value, and security market efficiency: The impact of Nasdaq, *Journal of Financial and Quantitative Analysis 21, 1-25*

Ule, Maxwell G., 1937, Price movements of newly listed common stock, *Journal of Business 10, 346-369*

Uno, Jun, M. Shibata, T. Toritani, and K. Shimizu, 2004, Exchange listings and stock price, *Bank of Japan Working Paper (in Japanese)*

Webb, P. Gwendplyn, 1999, Evidence of Managerial Timing: The Case of Exchange Listings, *Journal of Financial Research 22, No.3, 247-263*

Tse, Yiuman and Erik Devos, 2004, Trading costs, investor recognition and market response: An analysis of firms that move from the Amex (Nasdaq) to Nasdaq (Amex), *Journal of Banking and*

Finance 28, 63-83