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Prices: Evidence from Japan

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Evidence from Japan

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Abstract

This paper examines how complimentary ticket initiation affects stock liquidity and stock prices. Since complimentary tickets are relatively advantageous for small shareholders, it can be predicted that firms' announcements for initiating complimentary tickets increase in the number of small shareholders and stock liquidity. Using 172 sample of complimentary ticket initiation of Japanese firms, we identify that the number of shareholders increases and stock liquidity improves following the announcements of complimentary ticket initiation. We also find that the stock price increases in response to the announcement. There is a positive relationship between the magnitude of the stock price increase and the extent of improvement of stock liquidity.

1. Introduction

Complimentary tickets have been very popular among Japanese firms. At the end of the fiscal year of 2007 (March 31), more than 1,000 Japanese listing firms (about 1/4 of all listing firms) distribute complimentary tickets to their shareholders. In spite of their widespread use in the business, however, little attention has been paid to the effect of complimentary tickets in academic research. This article is an initial attempt to examine the effects of the complimentary tickets on stock liquidity and stock prices.

Using complimentary tickets, firms distribute their goods or services to the shareholders. Most complimentary tickets are favorable for small shareholders (as explained later). It is sometimes pointed out that the purpose of complimentary ticket initiation is to appeal to individual investors. For example, the *Nihon Keizai Shimbun*, which is the most popular economic newspaper in Japan, reports that “A survey by Daiwa Investor Relations Co Ltd. found that the number of firms introducing complimentary tickets had reached 1,000. Firms consider complimentary tickets as a mean of appealing to individual investors and encouraging stable long-term ownership” (June 6, 2006, morning edition).

By using 172 Japanese sample firms that introduced complimentary ticket program between 1998 and 2005, we empirically examine the effects of complimentary ticket initiation on the number of shareholder or ownership structure. We identify that, on average, the number of total shareholders increases significantly following the announcements of complimentary ticket initiation. In particular, the number of individual shareholders significantly increases. If firms’ objective for initiating complimentary ticket is to increase the number of small individual shareholders, then this is successful. On the other hand, there is a slight but insignificant decline in the ownership ratio of large shareholders. Complimentary ticket initiation therefore results

in further diversification among small individual shareholders without substantially decrease in the ownership ratios of large shareholders.

In addition to the number of shareholders, we examine some measures of stock liquidity such as bid-ask spread, trading volume, and the liquidity ratio. Comparing to a firm in the same industry with similar financial characteristics, we identify that stock liquidity for the sample firms significantly improves just following the announcement of complimentary ticket initiation.

Existing literature argues that the increase in stock liquidity affects the stock price of the firm. We then examine the announcement effect of complimentary ticket initiation on the stock price by using the standard event study methodology. We find that, on average, the sample firms experience a significant positive stock price increase of 1.19% (with t -value of 3.78%) on the announcement date. A cross-sectional regression analysis indicates that the magnitude of the announcement effect of the stock price has significant positive relationships with the extent of increase in the number of shareholders and improvement in stock liquidity.

As argued above, the amount of distribution of complimentary ticket is not proportional to the ownership ratio. In most cases, it is relatively advantageous for small shareholders and disadvantageous for large shareholders. From this viewpoint, initiation of complimentary ticket decreases in large shareholders' wealth. On the other hand, complimentary ticket initiation contributes to large shareholders' wealth by liquidity improvement. Our results show that, in the short-term, the liquidity effect is larger than the (discriminated) distribution effect, resulting in increase in large shareholders' wealth.

The remainder of the paper is organized as follows. In Section 2, we explain about complimentary tickets among Japanese firms more detail. In Section 3, we present a numerical explanation that discriminated distribution of complimentary tickets increase in the number of small shareholders. In Section 4, we describe our sample firms and

examine changes in the number of shareholders and stock liquidity between before and after complimentary ticket initiation. In Section 5, we examine the stock price response to the announcement of complimentary ticket initiation. Section 6 summarizes the paper.

2. Complimentary Tickets of Japanese Firms

Complimentary tickets have been popular among Japanese firms. Figure 1 shows the total number of Japanese listing firms that introduced complimentary tickets from 1992 to 2006. As shown in the Figure, there were 251 firms that have introduced complimentary ticket program in 1992. The number of firms increased steadily in subsequent years, and by 2006, 1,018 firms (roughly equivalent to 1/4 of all listing Japanese firms) have introduced complimentary ticket program.

[Figure 1]

Using complimentary tickets some Japanese firms distribute their own goods or services to shareholders. This type of complimentary ticket is introduced by firms that manufacture and sell products or provide services very close to final consumers. In fact, approximately 70% of firms that initiated complimentary tickets belong to the food processing sector and retail sector (Tokyo Stock Exchange (TSE) industrial classifications). Other firms send goods or cash equivalent that the firms do not produce themselves to shareholders (for example, bags of rice or cash equivalent coupon).

One prominent feature of complimentary tickets in practice is that the amount of goods and services received by shareholders is not proportional to the shareholders' ownership (the number of holding shares). In most cases, complimentary ticket program is relatively advantageous for small shareholders.

For example, Ajinomoto, a major Japanese food processor, introduced complimentary ticket in the 2001 fiscal year. Its complimentary ticket is as follows. “All shareholders who are registered on a record date, at March 31 of each year, will be given a set of the firm’s products equivalent to 3,000 yen.” The minimum trading unit of Ajinomoto share is 1,000 shares. Then, both a small shareholder owning 1,000 shares and a large shareholder owning 10,000 shares receive the same Ajinomoto products equivalent to 3,000 yen. Comparing the rate of return regarding a complimentary ticket, the rate of return of the small shareholder is 10-times larger than that of the large shareholder.

Another example is a complimentary ticket program of Oriental Land, which operates Tokyo Disneyland and Tokyo Disney Sea. Oriental Land gives its shareholders 1-day passports available for one of the two parks. The number of passports receivable to shareholders is not proportional to the number of shares owned by shareholders, too. In fact, a small shareholder owning 100 shares receives two 1-day passports, while a large shareholder owning 3,000 or more shares receives only twelve 1-day passports (the minimum trading unit of Oriental Land’s share is 100). As the same of the case of Ajinomoto, a complimentary ticket program is relatively advantageous for small shareholders

Similar to the above two cases, most complimentary tickets of Japanese firms are those in providing advantages for small shareholders. It is reasonable to assume that typical small shareholders are individual shareholders with limited investment funds, which implies that complimentary ticket initiation is attractive to individual shareholders.

To our knowledge, there exist European and American companies that introduce complimentary ticket program. In the U.K., about 70 firms introduced complimentary tickets for shareholders at the year of 2004, roughly 1/5 of the large listing firms. To the

contrary, only a relatively small number of firms introduce complimentary tickets in the U.S. (for example, McDonald's, Starbucks, and Walt Disney, etc).

[NEW FIGURE: THE NUMBER OF FIRMS INTRODUCED TICKETS BY INDUSTRY (2006) AND SAMPLE FIRM DISTRIBUTION]

3. Discriminated Distribution and Increase in the Number of Shareholders

We make hypothesis that a firm experienced an increase in the number of shareholders after it initiates complimentary ticket program for shareholders. The following numerical explanation is useful to understand the reason. Let us consider the case of an all-equity firm with 1,000 firm value, 10 outstanding shares, one large shareholder and 6 small shareholders. The large shareholder holds 4 shares of the firm and each small shareholder holds one share, respectively. The ownership ratio of the large shareholder is 40% and that of each small shareholder is 10%. The stock price is currently 100. The wealth of the large shareholder is 400, and the wealth of each small shareholder is 100.

Suppose that the firm decides to introduce a complimentary ticket program and makes an announcement of its intention to do so. In this program, a firm distributes a ticket worth 10 to all shareholders regardless of their ownership ratio. Distribution to each shareholder is not proportional to the ownership ratio. Such a discriminated distribution is a typical feature of complimentary tickets prevailing in the real world.

If the ownership structure of the firm does not change until the record date, then the total amount of distribution will be 70. In this case, the ex-distribution value of the firm will be 930 so that the ex-distribution stock price will be 93. The wealth of each small shareholder will increase to 103 from 100, because they will receive 10 value in the form of a complimentary ticket and hold one share worth 93. In contrast, the wealth of

the large shareholder will decrease from 400 to 382, because he receives only one 10-value ticket and hold 4 shares worth 372 (93×4). Note that the value of one share held by the large shareholder is smaller than that owned by each small shareholder because of discriminated distribution of complimentary tickets.

Predicting this outcome, the large shareholder considers to selling his shares between the announcement date and the record date. Suppose that the large shareholder sells 3 shares on the stock market. These 3 shares are probably purchased by three different new shareholders. Each new shareholder will purchase only one share, because holding any block (2 shares or 3 shares) is relatively disadvantageous as in the case of the old large shareholder¹.

The above arguments suggest that complimentary ticket initiation increases the number of shareholders, in particular the number of small shareholders. In the next section, we examine the actual effect of complimentary ticket initiation by Japanese firms on the number of shareholders (or ownership structure) and stock liquidity.

4. Changes in the Number of Shareholders and Stock liquidity

(1) Selection of sample firms and matching firms

Our sample includes Japanese firms that made announcements of initiation of complimentary ticket program between January 1998 and December 2005. We gather the sample from TD net (Timely Disclosure network) data service of Tokyo Stock

¹ For example, suppose that one investor (new large shareholder) purchases 3 shares as a block. Then, there is one large shareholder holding 3 shares and seven small shareholders holding one share. It is easy to see that the total value of 3 shares owned by the new large shareholder is 286 (94.33 each share), and the value of one share owned by each small shareholder is 102 at the record date.

Exchange (TSE). Complimentary ticket initiation disclosed on TD net is reported in the morning edition of *Nihon Keizai Shumbum* on the following business day (announcement date).

We eliminate firms that changed the minimum trading unit, stock split, and equity issuance during the same fiscal year of the complimentary ticket initiation, because these events affect the number of shareholders and stock liquidity (Amihud, Mendelson, and Lauterbach (1997), Amihud, Mendelson, and Uno (1999), Hauser and Lauterbach (2003), Hanaeda and Serita (2004), Ahn, Cai, Hamao, and Melvin (2005)). We also eliminate firms that made announcement other (confounding) events around the announcement date. The final sample consists of 172 firms that did not change the minimum trading unit of stocks and the number of outstanding shares during the complimentary ticket initiation year.

The stock price data and financial data required for the analysis were collected from Nikkei Economic Electronic Data System (NEEDS) files, which is similar to COMPUSTAT. Information on the nature of complimentary tickets was collected from Annual Report published by *Nomura Investor Relations*, TD net, and *Nihon Keizai Shumbum*.

As in the same way of Amihud, Mendelson, and Uno (1999) and Ahn et al. (2005), we examine the effects of complimentary ticket initiation on the number of shareholders and stock liquidity by comparing sample firms and their matching firms. For each of the 172 firms, we assign a matching firm using the following procedure. First, we select firms (candidate firms) that belonged to the same industry (TSE industrial classification) of the sample firm and did not change the minimum trading unit and the number of outstanding shares during the fiscal year of the sample firm's complimentary ticket initiation. Second, we calculate the average stock price and trading volume of each sample and candidate firm during a 120-day period prior to the announcement date

(from -140 to -21 days).² Throughout the paper, day $-t$ denotes t days before the announcement date, and day t denotes t days after the announcement date. Among firms which average stock prices are within a range of 80% to 120% of the average stock price of the sample firm, we choose one with the closest average trading volume to that of the sample firm as the final matching firm.

[Insert Table 1 around here]

Table 1 reports characteristics of both the sample firms and their matching firms. There is no significant difference in average financial measures such as the market value of equity, the book value of total assets, the market-to-book ratio (the ratio of the market value of equity and the book value of debt to the book value of total assets), and the debt ratio (the ratio of debt to total assets). The market value of equity is calculated at the end of the fiscal year just before the announcement of complimentary ticket initiation.

In addition, there is no significant difference in firm's profitability measured by ROA and cash flow to total assets. ROA is the ratio of operating income to total assets. Cash flow is defined as operating income before depreciation minus common and preferred dividends (Howe, He, and Cao (1992)). Table 1 also shows that the dividend yield and the ratio of dividend paying firms are very similar between the sample firms and their matching firms. Overall, financial characteristics, firm profitability, and dividend policy of the matching firms are very similar to those of the sample firms.

(2) Changes in the number of shareholders and large shareholders

² The 120-day period prior to the announcement date (from -140 to -20) is also used to estimate the market model parameters in the event study.

[Table 2 around here]

Table 2 represents the number of shareholders and ownership ratios for both the sample firms (Panel A) and the matching firms (Panel B) at the end of the fiscal year just before the announcement of complimentary ticket initiation (“Before”) and at the end of the fiscal year just after the announcement (“After”). As shown in Panel A, the sample firms experience significant increases in the numbers of total and individual shareholders after complimentary ticket initiation. The average number of total shareholders for the sample firms increases from 7,309 to 9,224, and the average number of individual shareholders increases from 6,302 to 8,304. Since the average increase in the number of total shareholders (1,915) is almost equivalent to that in the number of individual shareholders (2,002), it seems reasonable to conclude that the increase in the total number of shareholders for the sample firms is due to the increase in the number of individual shareholders.

Contrary to the sample firms, Panel B of Table 2 shows that there is no significant increase in both the number of total shareholders and individual shareholders for the matching firms. Comparing the average increasing rate of the number of total shareholders between sample firms and their matching firms, we identify a difference between the two groups at significance level of 1%. We also identify that there is a difference in the average increasing rate for the number of individual shareholders between the two groups at significance level of 1%. If the sample firms’ objective of complimentary ticket initiation is to increase the number of shareholders, especially the number of small individual shareholders, then it would appear to be successful.

Table 2 also presents the changes in ownership structures (ownership ratio) before and after complimentary ticket initiation for both the sample firms and their matching firms. As shown in Panel A of Table 2, sample firms do not experience the increase in

the ownership ratio of individual shareholders. It follows from the above results that individual shareholders have even small blocks after initiation of complimentary tickets.

For sample firms, there is no significant change in ownership ratio of board members, top 10 large shareholders, and mutual funds. While the ownership ratio of large shareholders (top 10 shareholders) decreases in response to complimentary ticket initiation, the negative impact is not significant. In addition, for our sample period, the matching firms experience significant decreases in the ownership ratio of top 10 shareholders. Therefore, it can be concluded that there is no significant negative impact of complimentary ticket initiation on large shareholders' ownership.

Although the foreign shareholders' ownership ratio increases for the sample firms, this is not due to complimentary ticket initiation. It is well known that, in the sample period for this study, foreign shareholders' ownership ratios were increasing for many Japanese public companies. In fact, the average foreign shareholders' ownership ratio for the matching firms increases more than that for sample firms³.

(3) Stock liquidity

It is possible that increasing in the number of shareholders is positively associated with stock liquidity. In this subsection, we examine the stock liquidity surrounding the announcement of initiation of complimentary ticket program. In accordance with prior studies, we use four measures of stock liquidity; bid-ask spread rate, execution spread rate, relative trading volume, and liquidity ratio.

³ The above results do not change when we choose a matching firm in the same industry of a sample firm with the closest market-to-book ratio, ROA, or market value of equity.

The bid-ask spread rate is given by $(ask-bid)/mid$, where ask is the closing ask price, bid is the closing bid price, and mid is the median quoted price of $(ask + bid)/2$. The bid-ask spread can be interpreted as compensation for liquidity providers (Clyde, Schulz, and Zaman (1997)). The higher the liquidity of the stock, the smaller the bid-ask spread rate.

The execution spread rate is given by $2|exe - mid|/mid$, where exe is the final execution price and mid is the median of the next subsequent quote prices. The execution spread of $|exe - mid|$ represents the spread paid by traders in return for liquidity, and can be interpreted as the transaction costs (Clyde, Schulz, and Zaman (1997)). Similar to the bid-ask spread rate, the higher the liquidity of the stock, the smaller the execution spread rate.

In order to examine the liquidity effect of the announcement of complimentary ticket initiation, we compare each spread before the announcement and that after the announcement. We define “BEFORE” period as a 120-day period from day -140 to day -21. Similarly, “AFTER” period means a 120-day period from +21 to +140.

The trading volume is an increasing function of the stock liquidity (Amihud and Mendelson (1986)). The relative trading volume for firm i stock is given by $\log(V_i/VM)$, where V_i is the average firm i stock trading volume (in yen) during a given period, and VM is the average trading volume (in yen) for all stocks listing on the TSE. For the sample firms, we compare between $\log(V_i/VM)_{BEFORE}$ and $\log(V_i/VM)_{AFTER}$, where BEFORE means a 120-day period of (-140, -21) and AFTER means a 120-day period of (+21, +140), respectively. We also compare the changes in the relative trading volume between the sample firms and the matching firms (Amihud, Mendelson, and Lauterbach (1997) and Muscarella and Piwower (2001)). The change in the relative trading volume for firm i stock is defined as

$$DV_i = \log(V_i / VM)_{AFTER} - \log(V_i / VM)_{BEFORE} \quad (1)$$

It is expected that $\log(V_i/VM)_{AFTER}$ is larger than $\log(V_i/VM)_{BEFORE}$. It is also expected that, on average, DV_i for sample firms is larger than for matching firms.

The liquidity ratio for firm i stock measures the trading volume associated with a unit change in the stock price (Amihud, Mendelson, and Lauterbach (1997)). It is defined as

$$LR_i = \sum_t V_{it} / \sum_t |R_{it}|, \quad (2)$$

where V_{it} and R_{it} are, respectively, the trading volume and return on firm i stock on day t . We examine the change in log of liquidity ratio ($\log(LR)$) surrounding the announcement date. A stock with high liquidity seems to have a large liquidity ratio, because the impact on the high liquid stock price is small even when large volumes are traded. Then, it is expected that liquidity ratio increases following the announcement provided that the market participants rationally predict the increase in the number of shareholders. We also compare in the average DLR defined just below between the sample firms and the matching firms.

$$DLR_i = \log(LR_i)_{AFTER} - \log(LR_i)_{BEFORE} \quad (3)$$

Table 3 suggests that there is a significant liquidity improvement following the announcement of complimentary ticket initiation. As shown in Panel A, both of the average bid-ask spread rate and the average execution spread rate for the sample firms narrow significantly following the announcement. In addition, on average, the trading volume of the sample firms, measured by $\log(V_i/VM)$ and $\log(LR_i)$, increase following the announcement.

[Table 3 around here]

Panel B shows that the sample firms experience significant improvement in stock liquidity more than their matching firms do. On average, the magnitude of reduction in the bid-ask spread rate for the sample firms, 16.57%, is significantly larger than that for the matching firms, 6.61%. Similarly, the reduction in the execution spread rate for the sample firms, 16.94%, is significantly larger than that for the matching firms, 6.61%. The average DV_i for the sample firms, 0.23, is significantly larger than that for the matching firms, 0.02. The average DLR_i for the sample firms, 0.38, is significantly larger than that for the matching firms, 0.10. These results support that the announcement of complimentary ticket initiation significantly enhance the stock liquidity.

5. Stock Price Behavior and the Liquidity Effect

(1) The announcement effect of complimentary ticket initiation

We next examine the stock price behavior surrounding the announcement of complimentary ticket initiation. In a perfectly competitive stock market, neither increase in the number of shareholders nor improvement in stock liquidity has an effect on the firm value. In the real world, however, the assumption of the perfectly competitive market might not be satisfied because of the existence of transaction costs, asymmetric information, and other factors. For example, Amihud and Mendelson (1986) theoretically shows that improvement in stock liquidity increases the firm value by reducing the transaction costs. Merton (1987) shows that under asymmetric information an increase in the number of shareholders (or investor base) raises recognition of the firm, reduces the cost of capital, and raises the firm value.

Several empirical studies identify the above theoretical prediction. Corporate events such as stock split and reduction in the trading unit improve stock liquidity and raise the

stock price of the firm (Amihud, Mendelson, and Lauterbach (1997), Amihud, Mendelson, and Uno (1999), Hauser and Lauterbach (2003), Hanaeda and Serita (2004), and Ahn, Cai, Hamao, and Melvin (2005)). In the previous section, we identify that the number of shareholders increases and stock liquidity improves after complimentary ticket initiation (or the announcement). Then, we make a hypothesis that the stock price of a firm goes up in response to the announcement of complimentary ticket initiation.

We perform a standard event study in order to examine the announcement effect on stock prices for the sample firms. We calculate the abnormal return for each sample firm on any given date by using the market model methodology with TOPIX as a proxy of the market portfolio. The parameters of the market model are estimated over a 120-day period between day -140 and day -21. The abnormal return for each firm is computed as the difference between the actual return and the estimated return from the market model. The cumulative abnormal return is the sum of the abnormal returns for the days in the relevant event window.

[Figure 2 around here]

[Table 4 around here]

Figure 2 plots the average cumulative abnormal return (CAR) for the sample firms surrounding the announcement date (from day -20 to day +20). On average, the sample firms experience a large increase in stock prices just after they make announcements of complimentary ticket initiation.

Table 4 presents the average abnormal return (AAR) and the average cumulative abnormal return (CAR) for the sample firms. Panel A presents the daily average abnormal returns from day -10 to day +10. On average, the sample firms experience a significant positive abnormal stock return of 1.19% on the announcement date (day 0). In Panel B, we report cumulative abnormal returns in various event windows. In the

window prior to the announcement of (-20, -1), there is no significant stock price increase for the sample firms. In contrast, CAR (-1, +1), CAR (-1, +10), and CAR (-1, +20) are significantly positive. These results thus indicate that there is a positive announcement effect of complimentary ticket initiation on the sample firms' stock prices.

(2) Liquidity and stock price

We next examine the relationship between the stock price increases and stock liquidity improvement. As argued in the previous subsection, our primary hypothesis is that an increase in the number of shareholders and/or improvement in stock liquidity contribute the stock price (liquidity hypothesis).

In order to examine the liquidity hypothesis, for each sample firm, we make regression analysis of CAR on the relative changes in the number of shareholders and liquidity measures. We use two measures for the change in the number of shareholders; the rate of change in the number of total shareholders (ΔTS) and the rate of change in the number of individual shareholders (ΔID). The liquidity hypothesis predicts the positive regression coefficients on both ΔTS and ΔID . For the change in stock liquidity, we also use two measures; the relative changes in the bid-ask spread ratio ($\Delta (Bid-Ask)$) and DV given by (1). Under the liquidity hypothesis, we predict that the coefficient on $\Delta (Bid-Ask)$ is negative and the coefficient on DV is positive.

There are other factors that seem to affect the stock market response to the announcement of complimentary ticket initiation. For example, it is well-known that large shareholders play an important role in corporate governance and monitoring (Shleifer and Vishny (1986)). To control this factor, we add the relative change in the ownership ratio for top 10 shareholders ($\Delta Top10$) as a independent variable.

Another interpretation is that initiation of complimentary ticket is dividend increase. That is, a firm distributes additional cash equivalent to shareholders by using complimentary tickets. Dividend increase raises stock price at least for two reasons. First, dividend increase is a signal that the profitability of the firm will improve (Bhattacharya (1979), Miller and Rock (1985), and Healey and Palepu (1988)). To control such information effect, we use the change in the ratio of operating return to the total assets (ΔROA) between fiscal years before and after the complimentary ticket initiation. Second, as mentioned by Jensen (1986), cash or cash equivalent distribution is a financial instrument to reduce agency cost of free cash flow. We do not control measures regarding the free cash hypothesis, because the amount of complimentary ticket (in yen) is too small to persuade that the firms distribute their free cash flow through complimentary tickets. The average amount of complimentary ticket (in yen) is about only 1% of the net income for our sample firms.

As mentioned above, complimentary ticket program is different from cash dividend in the sense that firms can promote their own products or services to shareholders. This unique feature of complimentary ticket generates word-of-mouth advertising from shareholders. Among our sample of 172 firms, some firms provide their own products or services to shareholders and other firms provide goods that the firms do not produce themselves (for example, bags of rice or convenient cards equivalent to cash). It is possible to make a hypothesis that the stock price reaction is different between two groups. To control this possibility, we use a dummy variable which equals one for a firm that gives shareholders its own-product or service as complimentary ticket.

[Table 5 around here]

Table 5 presents the results of the cross-sectional regression analysis. In Panel A (model 1 to model 5), we use a slightly longer CAR (-1, +20) as a dependent variable in

accordance with Amihud, Mendelson, and Lauterbach (1997) and Muscarella and Piwower (2001).

Models 1, 2, and 3 show that both changes in the number of total shareholders (ΔTS) and individual shareholders (ΔID) have significant positive relationships with the announcement effect of stock price. Models 4 and 5 show that coefficients on the liquidity measures, changes in the relative trading volume (DV) and the bid-ask spread rate $\Delta(Bid-Ask)$, are also significant and consistent with the prediction. Although not shown in this paper, there is a significantly positive relationship between CAR and DLR (instead of DV), and a significantly negative relationship between CAR and the change in the execution spread (instead of $\Delta(Bid-Ask)$).

In Panel B (models 6 and 7), we use a 3 day period CAR (-1, +1) as a dependent variable. The results do not change. Both ΔTS and DV significantly contribute the stock price increase in response to the announcement.

All of these results support the liquidity hypothesis. When a firm makes an announcement that it has intention of initiating complimentary ticket program, the market appreciates the firm's stock by expecting that the number of shareholders will increase and stock liquidity will improve. While complimentary ticket itself is not favorable for large block shareholders, the liquidity effect contributes their wealth. No other independent variable has a significant relationship with the magnitude of the (positive) announcement effect.

The results are not essentially different when we use other event windows of (-10, +10) and (-1, +10). That is, the liquidity effect is robust in regardless of the length of event window.

6. Conclusions

This study looks at a sample of 172 Japanese firms that initiate complimentary ticket programs between 1998 and 2005, and examine the liquidity and price effects. Since complimentary ticket program is relatively advantageous for small shareholders, practitioners sometimes point out that the purpose of complimentary ticket initiation is to increase the number of small individual shareholders. Consistent with this suggestion, we identify that, on average, both the numbers of total and individual shareholders of the sample firms increase significantly after complimentary ticket initiation. In this sense, the firms' objective for initiating complimentary ticket is successful.

In addition to the increase in the number of shareholders, we identify that the measures of stock liquidity improves following the announcement of complimentary ticket initiation. On average, the trading volume increases and the bid-ask spread rate decreases.

Prior studies show that improvement in stock liquidity contributes the stock price. An event study analysis is used to investigate the stock price reaction. We identify that the average stock price for the sample firms goes up in response to the announcement of complimentary ticket initiation. A cross-sectional regression analysis confirmed that the improvement in liquidity contributes to large stock price increase.

Complimentary ticket program is disadvantageous for larger shareholders and foreign shareholders (there is little attraction to foreign shareholders because most of the complimentary tickets can be used only in Japan). Taking the positive announcement effect of the stock price into account, however, complimentary ticket initiation does not harm the wealth for large shareholders and foreign shareholders. It can be concluded that complimentary ticket initiation increases all shareholders' wealth in regardless of its discriminated distribution.

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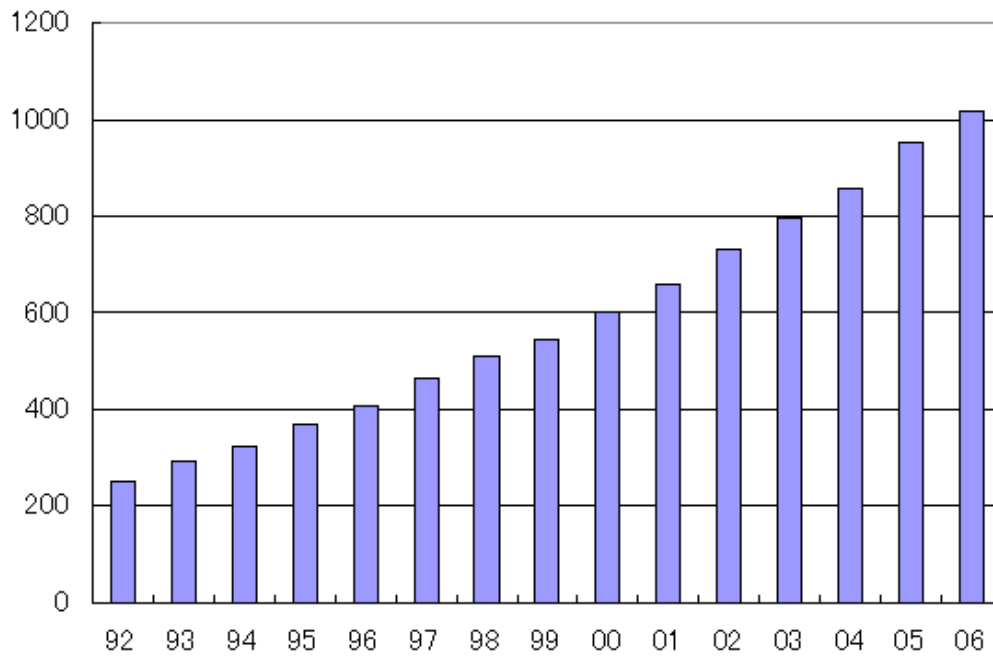


Figure 1. The total number of firms that introduced complimentary ticket programs between 1992 and 2006. Data sources are “Fact Book of Daiwa Investor Relations” and “Fact Book of Nomura Investor Relations”.

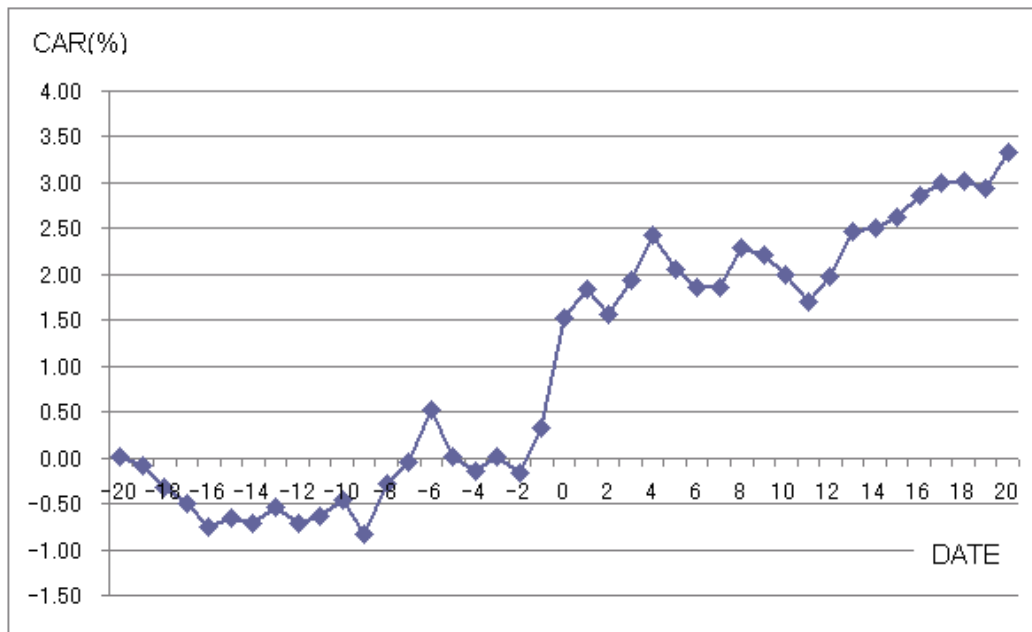


Figure 2. CAR for the sample firms surrounding the announcement date (day 0). The abnormal return is calculated by using the market model with TOPIX as the market portfolio. The parameters of the market model are estimated over a 120-day period between day -140 and day -21. The abnormal return for each firm is computed as the difference between the actual return and the estimated return from the market model. The cumulative abnormal return is the sum of the abnormal returns for the days in the relevant event window.

Table 1
Characteristics of the sample and matching firms

	Mean of sample firms	Mean of matching firms	t-value
Market value of equity (million Yen)	64,147	68,182	-0.21
Book value of total assets (million Yen)	102,387	114,669	-0.43
Market-to-book ratio	1.41	1.43	-0.09
Debt ratio (%)	48.73	47.57	0.48
ROA (%)	5.97	5.10	1.43
CF to total assets (%)	4.53	4.18	0.44
Dividend yield (%)	1.60	1.42	1.20
No. of paying firms	153	157	
Ratio of paying firm (%)	89.0%	91.3%	
No. of observation	172	172	

This table provides comparisons of various characteristics between sample firms and matching firms. The market value of equity is calculated at the end of fiscal year just before the announcement of complimentary ticket initiation. The market-to-book ratio is the ratio of the market value of equity and book of debt to book value of total assets. Debt ratio is the ratio of the book value of debt to the book value of total assets. The return on asset (ROA) is the ratio of operating income to total assets. Cash flow (CF to total assets) is defined as operating income before depreciation minus common and preferred dividends divided to total asset. The number of paying firms (No. of paying firms) is the number of firms that paid dividend in the fiscal year just before the announcement. Ratio of paying firm is the ratio of the number of paying firms to the number of observation (172). ***, **, and * denote significance levels of 1%, 5%, 10% respectively.

Table 2

**Change in the number of shareholders and ownership ratios following complimentary ticket initiation:
Comaprision between sample firms and matching firms**

	(A) Sample firms			(B) Matching firms		
	Before	After	t-statistic	Before	After	t-statistic
<u>Number of shareholders</u>						
All shareholders	7,309	9,224	-4.09 ***	7,165	7,149	0.10
Individual shareholders	6,302	8,340	-4.28 ***	5,911	5,888	0.14
<u>Ownership ratio (%)</u>						
Board members	16.81	16.54	0.18	14.74	14.28	2.56 ***
Top 10 Shareholders	57.75	56.27	1.46	57.38	57.02	1.63
Mutual funds	1.22	1.52	-1.47	1.71	1.52	0.97
Foreigners	6.34	7.19	-2.67 ***	6.37	7.91	-6.29 ***
Individuals	46.53	45.82	0.86	44.11	42.99	3.88 ***

This table presents the average number of shareholders and ownership ratios "Before" (at the end of the fiscal year just before) and "After" (at the end of the fiscal year just following) initiation of complimentary ticket programs. Ownership ratio of each group (Board members, Top 10 shareholders, Mutual funds, Foreigners, and Individuals) is the number of shares owned by each group to the total number of outstanding shares. t-statistic is used to test the hypothesis that the number of shareholders (ownership ratio) changes significantly after initiaion of complimentary tickets. ***, **, and * denote significance levels of 1%, 5%, 10% respectively.

Table 3
Liquidity effect of the announcement of complimentary ticket initiation

(A) Changes in stock liquidity for sample firms				
		BEFORE	AFTER	t-value, z-value
bid-ask spread rate	mean	0.027	0.021	3.21 ***
	median	0.016	0.010	6.38 ***
execution spread rate	mean	0.022	0.017	3.06 ***
	median	0.013	0.008	6.23 ***
log(V/VM)	mean	-2.065	-1.965	-3.50 ***
	median	-2.085	-1.977	2.63 ***
log(LR)	mean	3.778	3.942	-6.11 ***
	median	3.708	3.831	5.60 ***

(B) Comparison in liquidity changes between sample firms and matching firms			
	Sample firms	Matching firms	t-value
change in bid-ask spread rate	-16.57	-6.61	-2.49 **
change in execution spread rate	-16.94	-5.32	-2.83 ***
DV	0.23	0.02	3.25 ***
DLR	0.38	0.10	-4.24 ***

Panel (A) represents changes in stock liquidity for sample firms between the "BEFORE" period and the "AFTER" period. Panel (B) compares changes in stock liquidity to the announcement of complimentary ticket initiation between sample firms and their matching firms. All measures are explained in the text. t-value is used to test the difference between two means. z-value is the test statistic for Wilcoxon test. ***, **, and * denote significance levels of 1%, 5%, 10%, respectively.

Table 4**AAR and CAR around the announcement of complimentary tickets initiation**

(A) Daily AAR and CAR				
Days	AAR	t-value	CAR	t-value
-10	0.19	0.93	0.19	0.93
-9	-0.38	-1.76 *	-0.19	-0.66
-8	0.56	1.95 *	0.37	0.94
-7	0.24	0.85	0.60	1.24
-6	0.55	2.42 **	1.16	2.23 **
-5	-0.50	-2.60 ***	0.65	1.20
-4	-0.15	-0.78	0.51	0.92
-3	0.14	0.61	0.65	1.07
-2	-0.16	-0.81	0.48	0.75
-1	0.49	1.70 *	0.98	1.38
0	1.19	3.78 ***	2.16	2.66 ***
1	0.32	1.39	2.48	2.87 ***
2	-0.27	-1.42	2.21	2.54 **
3	0.37	1.98 **	2.58	2.78 ***
4	0.50	2.35 **	3.07	3.21 ***
5	-0.38	-1.57	2.69	2.74 ***
6	-0.19	-0.80	2.50	2.46 **
7	0.00	0.00	2.50	2.35 **
8	0.43	2.00 **	2.94	2.63 ***
9	-0.08	-0.36	2.86	2.40 **
10	-0.23	-1.22	2.63	2.18 **

(B) CARs in various event windows		
EVENT WINDOW	CAR	t-value
CAR(-20, -1)	0.33	0.34
CAR(-1, +1)	2.00	3.58 ***
CAR(-1, +10)	2.15	2.46 **
CAR(-1, +20)	3.49	2.64 ***
CAR(-10, +10)	2.63	2.18 **
CAR(-10, +20)	3.97	2.41 **
CAR(-20, +20)	3.33	1.83 *

Panel A describes the daily average abnormal returns (AAR) and the cumulative abnormal returns (CAR) surrounding the announcement of complimentary tickets initiation. Day $-t$ is t days before the announcement date (0), and day t denotes t days after the announcement date. Panel B describes the cumulative abnormal returns in various event windows. The t -value calculated using the cross-sectional method is the statistic for testing the null hypothesis that each AAR or CAR is equal to zero. ***, **, and * denote significance levels of 1%, 5%, 10% respectively.

Table 5**Cross-sectional regression of CAR**

	(A) CAR(-1, +20)					(B) CAR(-1, +1)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Constant	1.55 (1.15)	1.84 (1.34)	-0.91 (-0.43)	-1.34 (-0.63)	3.23 (1.11)	0.75 (0.79)	1.88 (1.95)
Δ TS	0.03 *** (2.98)		0.03 *** (2.97)	0.02 ** (2.17)	0.03 *** (2.75)	0.02 ** (2.65)	
Δ ID		0.02 *** (2.87)					
DV				7.63 *** (3.57)			2.23 ** (2.26)
Δ Bid-Ask					-4.88 ** (-1.86)		
Δ Top 10	-10.20 (-0.91)	-10.79 (-0.94)	-11.25 (-1.00)	-11.23 (-1.10)	-11.57 (-1.02)	1.11 (0.58)	0.10 (0.04)
own-product			3.03 (1.20)	2.63 (1.16)	3.63 (1.38)	-0.09 (-0.08)	-0.82 (-0.72)
Δ ROA			0.34 (0.30)	0.09 (0.07)	0.15 (0.12)	0.21 (0.62)	0.12 (0.33)
Adj-R ²	0.04	0.03	0.03	0.17	0.04	0.06	0.05
サンプル数	172	172	172	172	172	172	172

Dependent variable is CAR (-1, +20) in Panel A, and CAR (-1, +1) in Panel B. Δ TS is the rate of change in the number of total shareholders before and after complimentary ticket initiation, Δ ID is the rate of change in the number of individual shareholders. DV is a measure of relative change in the trading volume, Δ Bid-Ask is the change in the bid-ask spread rate, Δ Top10 is the change in the ownership ratio of top 10 shareholders, Δ ROA is the change in the ratio of operating return to total assets. own-product is a dummy variable which equals one for a firm that gives shareholders its own-product or service. Heteroskedasticity-corrected t-value (White's t-value) is in parenthesis. ***, **, and * denote significance levels of 1%, 5%, 10% respectively.

