Stock Repurchases in Japan

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April 10, 2005

Abstract

This paper analyzes the stock performance of all the Japanese firms around their share repurchase announcements between 1995 and 2001. Because of the stringent regulation on stock repurchase, I was able to obtain much stronger results than those available form previous studies on the U.S. stock repurchases. This paper shows that 1) firms in general announced share repurchase following long-term decline in excess stock returns relative to the market, 2) firms announced share repurchases for retirement purpose following long-term decline in excess stock returns relative to the market, while they announced ones for stock option purpose following long-term increase in excess returns 3) there are both short-term and long-term increase in excess stock returns after the repurchase announcements 4) the excess returns were higher but not statistically significant when the motive of the repurchase announcement was stock option, this was the first repurchase announcement by the firm or the firm actually repurchased any shares and 5) the dividends of the firms making repurchase announcements slightly increased and the total payout (dividends plus the actual value of shares repurchased) of these firms increased so that the growth in actual share repurchases in Japan represented an increase in total payout instead of the substitution between dividends and the share repurchase.

JEL Classification codes:
Key Words: Stock repurchase, payout policy, stock option

[•] The author thanks Scott Weisbenner for his detailed suggestions. The author appreciates generous financial support from Keio University and Seimeikai Foundation. Excellent research assistance from Akihito Toda and generous data support from Kaori Nogami are appreciated. Kenji WADA 2-1-1 Hiyoshi Honcho Kohokuku Yokohama Kanagawa 223-8523 Japan
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1. Introduction

This is the first empirical paper that analyzes the stock performance of all the Japanese firms that made at least one share repurchase announcements between 1995 and 2001. This paper investigates both the short-term and long-term excess stock returns of firms before and after the repurchase announcements. I will consider if the following elements affect the excess returns around the repurchase announcements: 1) stock option purpose vs. retirement purpose, 2) the first announcement vs. subsequent announcements, 3) announcements with some actual repurchase vs. announcements without any actual repurchase 4) repurchase at the stock exchange vs. repurchase at the over-the counter-markets.

This paper shows that 1) firms in general announced share repurchase following long-term decline in excess stock returns relative to the market, 2) firms announced share repurchases for retirement purpose following long-term decline in excess stock returns relative to the market, while they announced ones for stock option purpose following long-term increase in excess returns 3) there are both short-term and long-term increase in excess stock returns after the repurchase announcements 4) the excess returns were higher but not statistically significant when the motive of the repurchase announcement was stock option, this was the first repurchase announcement by the firm or the firm actually repurchased any shares and 5) the dividends of the firms making repurchase announcements slightly increased and the total payout (dividends plus the actual value of shares repurchased) of these firms increased so that the growth in actual share repurchases in Japan represented an increase in total payout instead of the substitution between dividends and the share repurchase.

During this period, 736 firms made 1631 distinct repurchase announcements. Since the Japanese government revised the commercial code in October 1994 that allowed firms to repurchase their shares, share repurchase announcements have grown to roughly half of the total dividends by 2001. Unlike in the U.S., there were severe legal restrictions on the share repurchase programs in Japan. Both the purpose of, and the fund for the repurchase programs were restricted. Because of these stringent regulations, I was

able to obtain much stronger results than those available form previous studies on the U.S. stock repurchases.

Over the past two decades, there has been a tremendous change in payout policy in the U.S. (Fama & French (2001) and Grullon & Michaely (2000)). In 1980, share repurchases were about ten percent of dividends for the S&P 500 companies. Since 1998, S&P 500 corporations have paid out more cash via stock buybacks than dividends. Despite the extensive literature on corporate share repurchases in the U.S. (see Dittmar (2000) for a review), there is little work on share repurchases outside the U.S. A notable exception is Ikenberry, Lakonishok, and Vermaelen (2000) who study stock repurchases in Canada. Ikenberry et al. (1995) investigated the stock repurchase as a signaling device, and Jagannathan et al .(2000) and Guay and Harford (2000) regarded the stock repurchase as a way to purge free cash flow.), or obtain shares to fund stock option programs (Fenn and Liang (2001, Weisbenner (2000) and Kahle (2002) investigated the repurchase for the purpose of stock option programs.

Hirota (1996) considered the performance of stock price a week before and after the repurchase announcement for nine companies listed on Tokyo Stock Exchange. He calculated the cumulative abnormal return by employing TOPIX as a benchmark and found that the mean cumulative abnormal return is rather small. Kan (1999) investigated the share repurchase of 138 companies listed on Tokyo Stock Exchange. He calculated both the abnormal return and the cumulative abnormal return 20 days before and after the repurchase announcement. He found out that the average value of the former was significant one day and two day after the repurchase announcement. He also considered the effect of a change in financial ratios such as EPS and ROE on the cumulative abnormal return. It is shown that companies with higher EPS and ROE have higher average cumulative abnormal returns. Makita (2002) considered the effect of repurchase announcements on the short-term performance difference between repurchase at the exchange and the one through the tender offer by investigating the first time repurchase announcement of 165 firms listed on the first section of TSE between 1996 and 1999. Hirota (1996) and Kan (1999) considered the repurchase announcements only for the retirement purpose and Makita (2002) did not explicitly differentiate between the two.

None of the papers above investigated the long-term performance and the observations in this paper covers all the repurchase announcements.

In the next section, I give brief explanation on the legal framework for share repurchase programs in Japan. In the third section, I analyze the share repurchase announcements in Japan. In the final section, I give a conclusion.

2. Legal Framework for Share Repurchase Programs in Japan

Japan is a particularly interesting country in which to study payout policy. The regulatory and disclosure requirements are far more stringent than those in the U.S. I will explain about the regulation on the 1) resolution for repurchase programs, 2) purpose of, and fund for repurchase programs and 3) disclosure requirement for repurchase programs.

First, the resolution for the repurchase programs is regulated. Firms must decide if they are going to repurchase any shares either at a board of director's meeting or at an annual shareholder's meeting. A board of director's meeting is held once a month on average in Japan so that firms were able to undertake multiple repurchase announcements in any year. The resolution at a board of director's meeting was made possible after the revision on the commercial code in June 1997. In both cases, each repurchase program can last until the next shareholder's meeting.

Second, both the purpose of, and the fund for stock repurchase are regulated. Firms can repurchase shares only for the purpose of retirement of shares or granting stock options to executives and employees and assigning stocks for employee stock ownership plan. The retirement of shares can be decided at the shareholder's meeting and funded through retained earnings based on the commercial code (effective on October 1994). It can also be decided at the board meeting and funded through the retained earnings (effective on June 1997), the capital reserve (effective on March 1998) or the latent real estate profits (effective on March 1999) based on the "Law Concerning Special Exceptions to the Commercial Code Relating to the Procedures for Cancellation of Shares of the Commercial Code". The stock option can be decided at the shareholders' meeting based on commercial code and maximum of 10% of the total shares outstanding can be repurchased.

Third, there are several disclosure requirements for the stock repurchase programs at three stages. When firms first announce the share repurchase programs, they must disclose 1) the purpose of the repurchase (whether the purpose is retirement of shares or granting stock options), 2) the maximum number of shares they intend to buy and 3) the maximum amount of fund they intend to spend. Then they must report to the Minister of Finance every three month about 1) the number of shares they repurchased during this period, 2) the amount of money they spent during this period and 3) the total number of shares they repurchased by the end of this period and 4) the total amount of money they spent by the end of this period. This report is required by the Securities and Exchange Law in Japan. Finally, firms also need to disclose at the first shareholder's meeting after the repurchase announcement 1) what type of shares they actually repurchased 2) how many of the shares they actually repurchased and 3) the total amount of money they actually spent on the repurchase.

Firms can repurchase shares in the stock exchange or though the tender offer. According to the Securities and Exchange Law, when firms undertake a tender offer, they must disclose the following information on a daily newspaper two days before the repurchase program starts. The content of the disclosure is 1) purpose of the repurchase program, 2) the price per share 3) the number of shares they intend to repurchase, and 4) the period of this tender offer. Firms undertaking tender offer also need to file the above-mentioned report on the progress of the repurchase to the Minister of Finance.

3.1. Summary of Repurchase Programs

In this section, I give a summary of stock repurchase announcements in Japan between 1995 and 2001. Table 1 shows a summary of various stock exchanges and over the counter markets (OTCs) in Japan. It shows the total trading volume and total trading value during each year and the total market value and the number of listed firms at the end of each year. Tokyo Stock Exchange (TSE) is the largest, Osaka Stock Exchange (OSE) is the second largest and Nagoya Stock Exchange (NSE) is the third largest in terms of the total market capitalization at the end of 2001. The total market capitalization of OTC is smaller than those of OSE and NSE, but its total trading volume and total trading value come between OSE and NSE at the end of 2001.

Table 2 shows basic statistics on the repurchase program. The sample covers 1631 repurchase announcements by 736 distinct firms from 1995 to April 2001. The total number of repurchase announcements at TSE was 1281, that at OSE was 202, that at NSE was 71, that at the OTC was 54 and that at the rest of the stock exchanges was 23. The total value of the announced share repurchase programs over the sample period was 4 trillion Yen. Both the number and the amount of announcement have been increasing steadily.

Table 3 illustrates the frequency of repurchase announcements. In total, 379 firms made multiple announcements and 70 firms made five or more announcements over the sample period, with one firm making 16 distinct announcements (Yamato Kogyo) and one firm making 15 distinct announcements (Toyota Motor). Table 4 examines the completion of share repurchase programs. In total, 17% of announcements led to no actual repurchases and the ratio of total actual value versus total announced value of share repurchase programs was 67%. Table 5 shows that firms on average repurchased 74% of the number of shares they originally announced to repurchase. This ratio slightly changes depending on the stock exchange and these percentages were 75% at TSE, 70% at OSE, 65% at NSE and 69% at OTC, so the percentage was highest at TSE and lowest at NSE. Conditional on repurchasing any shares, firms generally fully completed the program, with an average of 89% of the shares in the announcement being actually repurchased. These percentages were 89% at TSE, 90% at OSE, 91% at NSE and 97% at OTC, so the percentage was highest at OTC and lowest at TSE.

Table 6 reports how long it takes firms to complete their repurchase program, conditional on repurchasing any shares. Note that firms can spend at most one year by regulation on the repurchase program. The average time to completion was 103 days, with a median of 77 days. Two-fifths of the firms finished their repurchase program within two months of the announcement, and over two-thirds finished their repurchase program within 120 days of the announcement.

Table 7 is the characteristics of Japanese repurchase program quite distinct from that in the U.S. The regulation in Japan require firms to disclose whether the purpose of the repurchase program is either to retire shares or to acquire shares for stock option plans. About three quarters of the repurchase announcements was for the purpose to retire stock,

and the average size of a repurchase program conducted to retire shares was about three times the value of a program conducted to obtain shares for stock options.

Table 8 and Figure 1 explore whether Japanese firms substituted share repurchase for dividends or they increased total payouts to stock holders. The 736 firms that announced share repurchases through April 2001 made dividends payments that consistently comprised one third of total dividends paid by all Japanese firms. Among the repurchasing firms, share repurchase announcement was 80% of total dividends paid by these firms in 2000. As share repurchases grew, dividends did not fall, but rather remained flat over 1995-2001 for the group of firms that announce repurchases over the same period. As shown in Figure 1, dividends were also flat over the same period for the firms that did not announce any share repurchase programs. This suggests, that the ability of Japanese firms to repurchase stock has led to an increase in total payouts to shareholders, as opposed to a substitution of share repurchases for dividends.

Table 9 focuses on the payout policy of the 736 firms that announced a share repurchase program through April 2001. Over 80% of these firms paid dividends in any given year (only three firms did not pay a dividend from 1995-2001). In 2000, 61% of these firms announced repurchase programs. From 1995 through April 2001, on average 2.1% of outstanding shares were announced to be repurchased in a given program (median is 1.4% of outstanding shares).

3.1. Behavior of Firms before, and Reaction of Investors after Repurchase Announcements

Table 10 shows the short-term and the long-term excess rate of returns at stock exchanges and OTCs before and after the stock repurchase announcements. All the excess returns in Table 10 are average cumulative returns relative to the corresponding market indices. The returns at TSE are relative to TOPIX, those at OSE are relative to Osaka 250, those at Nagoya are relative to Nagoya 25 and those at OSE are relative to JASDAQ.

First, from the excess returns before the repurchase announcements, I can infer the behavior of firms planning to announce stock repurchases. Consistent with the experience in the U.S. and Canada (Ikenberry et al (1995) and Ikenberry et al. (2000)), Japanese firms announced share repurchases following long term price declines in the

stock exchanges. The average excess return between 250 trading days prior and one day prior to the announcement was significant at –11.4% for the entire sample, -11.3% in TSE, -14.9% in OSE, -16.2% at NSE. However, it was positive at OTC, although it was small and not significant. The average return between 125 trading days prior and one day prior to the announcement was also significant at –3.5% for the entire sample, -3.5% in TSE, -6.4% in OSE. It was -0.8% but not significant at NSE However, it was again positive at OTC, although it was not significant. So the behavior of firms at OTCs is rather different from those at the stock exchanges and these firms do not repurchase shares following long term price declines at OTCs. The short-term excess returns at the entire sample were all negative but not significant most of the time, these at TSE were all negative but not significant half of the times, while most of these were positive but not significant at OSE, NSE and OTC. Thus there was no regular pattern for the short-term returns.

From the excess returns after the repurchase announcements, I can infer the reaction of investors to the repurchase announcements. The excess returns between the date of the announcement and 20 trading days after were positive at all the stock exchanges and OTCs. They were also significant except at the NSE. The excess returns between the announcement date and 250 trading days after were also positive at all the stock exchanges and OTCs. They were also significant except at OSE and NSE. The excess returns the first 10 trading days after the repurchase announcements were all positive and most of them were significant. Thus investors react to the repurchase announcements in a positive way in short term and long term. From Table 10, I was able to infer the behavior of firms before the repurchase announcements and the reaction of the investors after the repurchase announcements. However, I cannot infer whether the firms behave in a different way or investors react in a different way depending on whether the purpose of the repurchase is stock option or retirement, the this is the first share repurchase announcement for the firm in question or whether the repurchase announcement led to actual repurchase. Hence, Table 11 investigates these points in detail.

In Table 11, I investigate the investors' reaction after the repurchase announcements and the firms' behavior before the repurchase announcements. First, I

focus on investors' reaction to the purpose of the repurchase announcements. The excess returns between the announcement date and 20 or 125 or 250 trading days after the announcements when the purpose was stock options were higher than those when the purpose was share retirement in the entire sample, TSE, OTC, but the difference was not significant. The converse was true at NSE, but the difference was not significant. There was no regular pattern in the short term excess returns.

Second, I consider investors' reaction to the first announcement. The excess returns between the announcement date and 20 or 125 trading days after the announcements when they were the first announcement were slightly higher but not significant than when they were not the first in the entire sample, TSE, OSE, but not at NSE or OTC. The excess returns between the announcement date and 250 trading days after the announcements when they were the first announcement were lower than when they were not the first in the entire sample, TSE, and OTC, but not in OSE or NSE. The short term excess returns for the first announcement were higher than the subsequent announcements at the entire sample, at TSE and at OSE, while the converse was true at NSE and OTC. However, the difference was significant only at OSE most of the times.

Third, I consider the investors' reaction to the actual share repurchase. The excess returns between the announcement date and 20 or 125 or 250 trading days after the announcements when the firms actually repurchased shares were lower but not significant than when they did not repurchase any shares in the entire sample, TSE, OSE and OTC, but not NSE. There was no regular pattern in the short term returns.

As most of these three set of differences were not significant, investors did not react differently if the purpose was to retire shares, if this was the first repurchase announcement or if the firms actually repurchased any shares.

Fourth, I investigate if the behavior of firms changes depending on whether the purpose of the repurchase is stock option or stock retirement. The excess return between 250 trading days prior and one day prior to the announcement was negative at about -15% and significant for retirement purpose in the entire sample and in all the stock exchanges and OTCs. The excess returns are also negative for returns between 125 trading days prior and one day prior to the announcements in all the stock exchanges but not at OTCs, although it is not significant. The excess returns between 20 trading days prior and one

day prior to the announcement are also negative in all the stock exchanges and OTCs except for OSE, although it is not significant. This confirms that a firm repurchases shares for retirement purpose when its stock price is declining relative to the market and thus becomes cheaper. The excess return between 250 trading days prior and one day prior to the announcement was positive but insignificant for option purpose at TSE and OTCs, but not at OSE and NSE. The excess returns are also positive between 125 trading days prior and one day prior to the announcements at TSE and NSE, but not at OSE and OTCs. The excess returns between 20 trading days prior and one day prior to the announcement are also positive in all the stock exchanges and OTCs. This makes sense, as the need to repurchase shares for options should be positively associated with stock returns as higher stock returns increases the likelihood that stock options will be exercised. In the U.S., Weisbenner (2000) finds that the link between stock options and share repurchases is stronger for firms that have recently had high returns.

Fifth, I investigate if the behavior of firms changes depending on whether this is the first repurchase announcement or not. The excess return between 250 trading days prior and one day prior to the announcement was negative and significant at -13.1% when this is the fist announcement and at -10.1% when this is not the first announcement in the entire sample and the difference is not statistically significant. At TSE, OSE and NSE, the same pattern applies, although the excess return for non-first announcement was positive but not significant at OTC. The first-time repurchases were more likely to be announced following price declines than are subsequent repurchase announcements, although the difference was not significant. Firms changed their behavior depending on the purpose of repurchase and the results were statistically significant. They also changed behavior when they made the first repurchase announcement, although the results were not statistically significant.

Tables 12 regresses excess returns during the first 10 trading days, month (20 trading days), half-year (125 trading days), and year (250 trading) following the share repurchase announcement on the following nine variables.

$$R_{t,t+h} = \beta_{0h} + \beta_{1h} X_1 + \beta_{2h} X_2 + \sum_{i=1}^{6} \gamma_{ih} D_i + \varepsilon_t$$

where

$R_{t,t+h}$ is the excess return from *t* to *t+h*,

$$X_1 = \begin{cases} 1 \text{ if the purpose is stock option} \\ 0 \text{ otherwise} \end{cases}$$

$$X_2 = \begin{cases} 1 \text{ if this is the first announcement} \\ 0 \text{ otherwise} \end{cases}$$

$$X_3 = \begin{cases} 1 \text{ if the firm actually repurchased any shares} \\ 0 \text{ otherwise} \end{cases}$$

D_t : time dummy, $t = 1$ for 1995, ...,$t = 6$ for 2000

Consistent with the analysis in Table 11, the excess returns are higher when the purpose was stock option and this was the first repurchase announcement, although these were not significant. The excess returns were higher when the firm actually repurchased any shares, although this is not significant. In Table 11, the excess returns were higher but not significant when firms did not repurchase any shares. In Table 12, I obtained the opposite result. Although both results were not significant, the regression analysis in Table 12 controls for other variables, while it is the not case in the mean excess returns table in Table 11.

Tables 13 regresses returns during first 10 trading days, over the month (20 trading days), half-year (125 trading days), and year (250 trading) prior to the share repurchase announcement.

$$R_{t-h,t-1} = \beta_{0h} + \beta_{1h} X_1 + \beta_{2h} X_2 + \sum_{i=1}^{6} \gamma_{ih} D_i + \varepsilon_t$$

where

$R_{t-h,t}$ is the excess return from *t-h* to *t-1*

$$X_1 = \begin{cases} 1 \text{ if the purpose is stock option} \\ 0 \text{ otherwise} \end{cases}$$

$$X_2 = \begin{cases} 1 \text{ if this is the first announcement} \\ 0 \text{ otherwise} \end{cases}$$

$$X_3 = \begin{cases} 1 \text{ if the firm actually repurchased any shares} \\ 0 \text{ otherwise} \end{cases}$$

D_t : time dummy, $t = 1$ for 1995, ...,$t = 6$ for 2000

Consistent with the results in Table 11, firms that announce share repurchase programs to retire shares performed substantially worse over the period preceding the announcement relative to firms that repurchase shares for stock option programs. Firms that repurchase for the purpose of retiring shares had a return that was on average 23 percentage points worse than the firms that repurchased shares to re-issue them for stock options. The first-time repurchases were more likely to be announced following price declines than are subsequent repurchase announcements, although the difference was not significant.

Table 14 regressed the excess return on the fraction of announced shares:

$$R_{t,t+h} = \beta_{0h} + \beta_{1h} X_1 + \varepsilon_h$$

where

$R_{t,t+h}$ is the excess return from t to $t+h$

X_1 is the fraction of shares repurchased

As shown in Table 14, the greater the fraction of outstanding shares announced to be repurchased is, the higher the excess return around the announcement date is. However, he greater price response is rather small and very short-lived. For example a one percentage point increase in the share of outstanding stock to be repurchased is only associated with a 0.21 percentage point higher return over two trading days following the announcement. There is a similar pattern at TSE and OSE and OTC, but not at NSE. There is no significant relationship between long-run performance and size of the repurchase program.

4. Conclusion

Over the past five years, share repurchases have grown significantly in Japan, boosting total payouts.

This paper shows that 1) firms announced share repurchases for retirement purpose following long-term decline in excess stock returns relative to the market, while they announced ones for stock option purpose following long-term increase in excess returns 2) there was a larger but not statistically significant long-term decline in the excess stock returns when firms made the first announcements than when they made the subsequent announcements 3) there are both short-term and long-term increase in excess stock returns after the repurchase announcements 4) the excess returns were higher but not statistically significant when the motive of the repurchase announcement was stock

option, this was the first repurchase announcement by the firm or the firm actually repurchased any shares and 5) the dividends of the firms making repurchase announcements slightly increased and the total payout (dividends plus the actual value of shares repurchased) of these firms increased so that the growth in actual share repurchases in Japan represented an increase in total payout instead of the substitution between dividends and the share repurchase.

Data Appendix

The share repurchase announcements data between 1995 and April 2001 is based on Corporate Action Related Data on Stocks and Bonds (Listed) by the former Nikkei Quick Information Technology Co., Ltd. (NQI hereafter). The database contained information on 1) the date of the board of director's meeting 2) Nikkei Company code 3) the name of the company 4) the date the resolution for the share repurchase is made 4) the type of the stock to be reacquired 5) face value of the stock 6) purpose of the repurchase 7) the scheduled number of maximum shares to be reacquired 8) the scheduled maximum value of the shares to be reacquired 9) actual number of shares repurchased 10) the date of the first shareholder's meeting after the repurchase announcement 11) the date of the company finished repurchasing shares 12) the stock exchange report in which repurchase is recorded 13) a suspension flag and 14) the decision date of suspension. This data does not record the total value of actual repurchased shares.

The total number of shares outstanding and dividends per share are based on Detailed Report on Stocks (Listed/OTC) from NQI. The total dividends for each company are calculated by multiplying the dividends per share by the total number of shares outstanding at the time of dividends payment. The stock price data adjusted for 1)capital increase, 2)capital decrease and 3)change in the face value is based on The Stock Price CD-ROM by Toyo Keizai Inc.

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Table 1: Summary of Major Stock Exchanges in Japan

		1995	1996	1997	1998	1999	2000	2001
Tokyo Stock Exchange 1st Sector	Total Trading Volume*	88,901	96,170	105,533	121,596	151,200	169,599	199,532
	Total Trading Value**	78,617	97,097	106,427	96,001	178,041	242,632	199,844
	Total Market Value**	350,238	336,385	273,907	267,783	442,443	352,785	290,669
	No. of Firms	1,253	1,293	1,327	1,340	1,364	1,447	1,491
Tokyo Stock Exchange 2nd Sector	Total Trading Volume*	3,132	4,001	2,034	1,603	3,963	4,549	4,494
	Total Trading Value**	4,838	4,947	4,795	2,073	1,390	7,446	5,660
	Total Market Value**	15,478	11,193	7,022	7,398	13,584	7,134	5,424
	No. of Firms	461	473	478	498	526	579	576
Osaka Stock Exchange 1st Sector	Total Trading Volume*	19,715	18,875	14,390	12,102	13,778	16,156	11,384
	Total Trading Value**	23,150	24,969	26,003	20,028	19,796	33,330	19,729
	Total Market Value**	296,098	280,223	222,552	207,177	293,125	261,843	208,985
	No. of Firms	857	868	879	873	879	887	884
Osaka Stock Exchange 2nd Sector	Total Trading Volume*	1,378	1,908	1,017	733	1,193	1,076	912
	Total Trading Value**	1,570	2,311	1,022	504	2,308	1,031	328
	Total Market Value**	8,627	7,069	3,905	3,905	5,736	2,569	2,070
	No. of Firms	365	388	395	398	402	383	369
Nagoya Stock Exchange 1st Sector	Total Trading Volume*	4,772	3,706	5,888	3,206	4,711	4,300	1,241
	Total Trading Value**	5,096	4,857	12,567	5,908	1,993	6,656	2,034
	Total Market Value**	181,976	179,922	154,279	145,493	197,643	180,982	154,009
	No. of Firms	434	438	444	441	438	440	441
Nagoya Stock Exchange 2nd Sector	Total Trading Volume*	288	399	211	161	223	275	160
	Total Trading Value**	366	534	192	78	378	220	77
	Total Market Value**	3,081	2,788	1,459	1,203	1,712	1,147	996
	No. of Firms	138	139	140	139	147	142	137
OTCs	Total Trading Volume*	2,431	2,412	1,375	1,244	4,142	3,457	3,297
	Total Trading Value**	5,884	5,900	2,657	1,553	12,194	11,423	5,013
	Total Market Value**	14,535	14,904	9,228	7,742	27,410	10,283	8,927
	No. of Firms	678	762	834	856	868	886	926
Sapporo Stock Exchange	Total Trading Volume*	336	290	249	97	102	28	38
	Total Trading Value**	308	263	246	39	47	21	65
	Total Market Value**	127,067	130,568	110,558	98,425	140,244	123,938	95,825
	No. of Firms	194	194	194	191	189	187	182
Hiroshima Stock Exchange	Total Trading Volume*	286	257	182	27	20	5	
	Total Trading Value**	306	250	200	23	15	4	
	Total Market Value**	117,081	113,728	93,814	86,967	117,364	114,979	
	No. of Firms	206	206	204	204	207	207	
Niigata Stock Exchange	Total Trading Volume*	295	231	241	49	52	2	
	Total Trading Value**	212	196	397	21	26	1	
	Total Market Value**	124,417	122,619	104,127	96,911	125,317	125,204	
	No. of Firms	201	201	200	197	196	195	
Fukuoka Stock Exchange	Total Trading Volume*	404	300	245	48	51	43	38
	Total Trading Value**	396	297	204	27	32	28	21
	Total Market Value**	116,121	120,888	105,221	96,901	135,393	123,406	103,088
	No. of Firms	264	269	269	266	268	268	265

Daily Rate of Return (%)		1995	1996	1997	1998	1999	2000	2001
TOPIX	Mean	0.011	-0.024	-0.082	-0.022	0.195	-0.107	-0.080
	Variance	1.373	0.571	1.968	1.935	1.389	1.936	2.274
Osaka 250	Mean	0.003	-0.028	-0.105	0.002	0.137	-0.011	-0.064
	Variance	1.275	0.481	1.686	1.795	1.100	1.513	1.390
Nagoya 25	Mean	0.029	0.018	-0.002	-0.016	0.099	0.048	0.017
	Variance	1.416	0.729	2.064	2.458	1.822	1.658	1.274
JASDAQ	Mean	-0.041	-0.055	-0.212	0.011	0.523	-0.195	-0.046
	Variance	1.122	0.368	0.912	0.630	3.386	8.117	2.013

* Million Shares, ** Billion Yen

Table 2: Repurchase Announcements in Japan									
		1995	1996	1997	1998	1999	2000	2001	total
The Number of Repurchase Announcements									
TSE	Repayment	0	9	38	228	251	338	115	979
	Stock Option	0	1	22	42	49	167	21	302
OSE	Repayment	1	1	9	47	54	42	11	165
	Stock Option	0	0	5	7	5	18	2	37
NSE	Repayment	0	0	3	18	21	17	4	63
	Stock Option	0	0	0	1	3	4	0	8
OTC	Repayment	0	2	9	16	6	0	0	33
	Stock Option	0	0	6	4	4	7	0	21
Others*	Repayment	0	0	1	8	3	5	3	20
	Stock Option	0	0	1	1	1	0	0	3
Total	Repayment	1	12	60	317	335	402	133	1260
	Stock Option	0	1	34	55	62	196	23	371
The Number of Firms Making Announcements		1	13	85	307	298	452	146	1302
Value Announced (Billions Yen)		10	272	509	942	768	937	557	3996

* Others consist of Sapporo, Hiroshima, Niigata, and Fukuoka Stock Exchanges.

Table 3: Frequency of Repurchase Announcements													
	1	2	3	4	5	6	7	8	9	10	12	15	16
TSE	285	124	74	40	22	19	7	4	2	0	0	1	1
OSE	66	18	8	8	3	2	1	0	0	1	0	0	0
NSE	19	6	3	5	1	1	0	0	0	0	0	0	0
OTC	24	4	3	2	1	0	0	0	0	0	0	0	0
Others*	3	5	2	1									
Total	357	160	91	58	25	24	11	4	2	1	1	1	1

Note: In total, 736 distinct firms have made 1631 share repurchase announcements.
The first row = The number of repurchase announcements
The second to sixth row = The number of firms making repurchase announcements
* Others consist of Sapporo, Hiroshima, Niigata, and Fukuoka Stock Exchange.

Table 4: Completion of Repurchase Announcements in Japan			
	Total value of share announced (billion Yen)	Fraction of programs with zero shares repurchased*	Total value of shares actually repurchased (billion Yen)*
1995	10	0%	9.6
1996	272	54	145
1997	509	14	398
1998	942	18	693
1999	768	9	593
2000	937	15	714
1/2001 – 4/2001	557	42	106
1995 - 4/2001	3996	17%	2658

Firms report the actual number of shares repurchased for a given program when it is completed. We multiply the ratio of (actual number of shares repurchased / number of shares in repurchase announcement) by the total value of shares to be repurchased to obtain an estimate for the total value of shares actually repurchased.

Table 5: The Fraction of the Number of Shares in Repurchase Announcements Actually Repurchased		
	Fraction of shares in anouncement actually repurchased by firms	Fraction of shares in announcement repurchased conditional on repurchasing some shares
10^{th} percentile	0.00	0.62
25^{th} percentile	0.61	0.88
Median	0.97	1.00
75^{th} percentile	1.00	1.00
Mean	0.74	0.89
Standard deviation	0.38	0.20

TSE

10^{th} percentile	0.00	0.62
25^{th} percentile	0.67	0.86
Median	0.99	1.00
75^{th} percentile	1.00	1.00
Mean	0.75	0.89
Standard deviation	0.38	0.20

OSE

10^{th} percentile	0.00	0.63
25^{th} percentile	0.45	0.95
Median	0.95	1.00
75^{th} percentile	1.00	1.00
Mean	0.70	0.90
Standard deviation	0.40	0.22

NSE

10^{th} percentile	0.00	0.59
25^{th} percentile	0.46	0.93
Median	0.79	1.00
75^{th} percentile	0.99	1.00
Mean	0.65	0.91
Standard deviation	0.37	0.17

OTC

10^{th} percentile	0.00	0.88
25^{th} percentile	0.39	1.00
Median	0.93	1.00
75^{th} percentile	1.00	1.00
Mean	0.69	0.97
Standard deviation	0.40	0.08

Table 6: Distribution of the Length of Time to Complete Repurchase Programs		
Months after announcement	Probability the completion time is in the given range	Cumulative probability
0 – 1	23%	23%
1 – 2	18	41
2 – 3	16	57
3 - 4	11	68
4 – 5	7	75
5 – 6	6	81
6 - 7	5	86
7 – 8	4	90
8 – 9	3	93
9 – 10	2	95
10 – 11	2	97
11+	3	100%

Note: The time between announcement of program and completion of program, conditional on repurchasing some shares is reorted here. The average time to completion is 103 days, the median is 77, and the 25^{th} and 75^{th} percentiles are 34 and 151, respectively.

Table 7: The Purpose of Share Repurchase Announcements						
	The number of programs	Total Value of programs (billions Yen)	Total Value repurchased (billions Yen)	Fraction with zero repurchases (%)	Mean Value of programs (billions Yen)	Mean Value repurchased (billions Yen)
Retire Shares	1260	3668	2405	18	2.91	1.91
Stock Options	371	327	253	15	0.88	0.68

Table 8: Dividends vs. Share Repurchase Programs				
	All Firms	736 firms that announced a repurchase		
	Total Dividends*	Total Dividends	Total Value of Share Repurchase Programs	Value of Shares Actually Repurchased
1995	2848	963	10	9.6
1996	3031	1016	272	145
1997	3069	1094	509	398
1998	2865	1071	942	693
1999	2879	1098	768	593
2000	2958	1143	937	714
2001		1137	557	106
1995-2001		7524	3996	2658

Note: The unit is in billion Yen.
Firms report the actual number of shares repurchased for a given program when it is completed. We multiply the ratio of (actual number of shares repurchased / number of shares in repurchase announcement) by the total value of shares to be repurchased to obtain an
* Total Dividends covers TSE, OSE, NSE and Sapporo Stock Exchange.

Table 9 Frequency of Payouts				
	Fraction of firms that paid dividend	Fraction that announced repurchase	Average fraction of shares to be repurchased*	No. of Firms
1995	79%	0.10%	1.90% (1.9%)	1
1996	82	2	2.3 (1.9)	13
1997	86	12	3.3 (2.)	85
1998	89	42	2.3 (1.4)	307
1999	92	41	1.9 (1.2)	298
2000	96	61	2 (1.2)	452
2001	98	20	2.3 (1.5)	146
1995-2001	99.6	100	2.1 (1.4)	1302

Note: The sample is 736 distinct firms that announced a repurchase from 1995 to April 2001.
* Average fraction of outstanding shares to be repurchased per announcement, conditional on the firm making an announcement. The number in parentheses is the median fraction of outstanding shares to be repurchased per announcement.

Table10: Short-term Mean Excess Stock Returns around Repurchase Announcements

Entire Sample

(Excess Returns, %)

(standard errors in parentheses)

		TSE	OSE	NSE	OTC	Total
Return t to t+1	Mean	0.8 **	1.2 **	0.3	2.2 *	0.9 **
		(0.2)	(0.4)	(1.1)	(0.9)	(0.2)
	No of Obs.	1200	156	46	47	1449
Return t to t+2	Mean	1.3 **	2.4 **	0.8	3.6 *	1.5 **
		(0.2)	(0.6)	(0.8)	(1.7)	(0.2)
	No of Obs.	1209	145	47	47	1448
Return t to t+3	Mean	2.0 **	2.1 **	2.0	5.1 **	2.1 **
		(0.3)	(0.7)	(1.)	(1.8)	(0.2)
	No of Obs.	1211	146	47	47	1451
Return t to t+4	Mean	1.2 **	2.4 **	4.4 **	5.4 *	1.5 **
		(0.3)	(0.7)	(1.3)	(2.)	(0.3)
	No of Obs.	1201	146	48	43	1438
Return t to t+5	Mean	2.1 **	2.5 **	3.9 **	6.5 *	2.3 **
		(.3)	(.7)	(1.1)	(2.4)	(.3)
	No of Obs.	1198	147	47	43	1435
Return t to t+6	Mean	1.9 **	2.3 **	5.1 **	7.2 *	2.2 **
		(0.3)	(0.7)	(1.5)	(3.1)	(0.3)
	No of Obs.	1204	148	52	45	1449
Return t to t+7	Mean	2.1 **	2.5 **	4.4 **	7.3 *	2.4 **
		(0.3)	(0.7)	(1.3)	(2.7)	(0.3)
	No of Obs.	1202	146	48	46	1442
Return t to t+8	Mean	2.4 **	2.7 **	4.0 *	8.4 *	2.6 **
		(0.3)	(0.8)	(1.5)	(3.3)	(0.3)
	No of Obs.	1208	141	41	43	1433
Return t to t+9	Mean	2.5 **	2.8 **	4.1 **	8.6 *	2.8 **
		(0.3)	(0.9)	(1.4)	(3.3)	(0.3)
	No of Obs.	1209	139	41	45	1434
Return t to t+10	Mean	2.7 **	3.2 **	3.5 *	6.4	2.9 **
		(0.3)	(0.9)	(1.5)	(3.2)	(0.3)
	No of Obs.	1212	141	41	47	1441
Return t-2 to t-1	Mean	-0.2	-0.5	3.1	0.5	-0.1
		(0.2)	(0.4)	(1.6)	(1.1)	(0.2)
	No of Obs.	1186	142	35	44	1407
Return t-3 to t-1	Mean	-0.2	-0.5	-0.3	1.3	-0.2
		(0.2)	(0.5)	(1.4)	(0.9)	(0.2)
	No of Obs.	1187	132	33	40	1392
Return t-4 to t-1	Mean	-0.3	0.5	2.1	2.6	-0.1
		(0.2)	(0.6)	(1.5)	(1.3)	(0.2)
	No of Obs.	1188	130	40	35	1393
Return t-5 to t-1	Mean	-0.4	0.4	1.1	2.9	-0.2
		(0.3)	(0.6)	(1.5)	(2.6)	(0.3)
	No of Obs.	1180	138	36	40	1394
Return t-6 to t-1	Mean	-0.7 *	1.0	3.5	1.9	-0.3
		(0.3)	(0.7)	(1.8)	(2.2)	(0.3)
	No of Obs.	1185	133	33	38	1389
Return t-7 to t-1	Mean	-0.7 *	0.5	0.6	1.5	-0.5
		(0.3)	(0.7)	(1.7)	(2.)	(0.3)
	No of Obs.	1183	138	38	37	1396
Return t-8 to t-1	Mean	-0.9 **	0.7	-1.0	1.9	-0.7 *
		(0.3)	(0.7)	(1.5)	(2.4)	(0.3)
	No of Obs.	1190	133	39	36	1398
Return t-9 to t-1	Mean	-0.7 *	0.2	1.4	2.0	-0.5
		(0.3)	(0.7)	(1.9)	(2.3)	(0.3)
	No of Obs.	1187	131	32	41	1391
Return t-10 to t-1	Mean	-0.5	0.7	1.7	1.3	-0.3
		(0.3)	(0.7)	(1.8)	(2.3)	(0.3)
	No of Obs.	1184	128	38	35	1385

Excess return of TSE, OSE, NSE, OTC is relative to TOPIX, Osaka 250, Nagoya 25, and JASDAQ, respectively.

**: significance at 99% level, *: significance at 95% level

Table10: Long-term Mean Excess Stock Returns around Repurchase Announcements

Entire Sample

(Excess Returns, %)

(standard errors in parentheses)

		TSE	OSE	NSE	OTC	Total
Return t to t+20	Mean	3.1 ** (.4)	2.8 * (1.2)	3.3 (1.7)	11.6 * (5.7)	3.4 ** (.4)
	No of Obs.	1199	133	39	44	1415
Return t to t+125	Mean	9.3 ** (1.)	1.3 (2.3)	2.7 (3.6)	43.7 (22.)	9.3 ** (1.1)
	No of Obs.	1193	139	42	42	1416
Return t to t+250	Mean	15.5 ** (1.4)	3.0 (4.)	11.5 (5.9)	83.4 ** (28.3)	16.5 ** (1.6)
	No of Obs.	1201	133	42	49	1425
Return t-20 to t-1	Mean	-0.2 (.4)	0.8 (1.1)	0.1 (1.6)	4.5 (3.7)	0.1 (.4)
	No of Obs.	1198	128	41	40	1407
Return t-125 to t-1	Mean	-3.5 ** (1.3)	-6.4 ** (2.)	-0.8 (3.7)	3.2 (7.7)	-3.5 ** (1.2)
	No of Obs.	1170	130	37	38	1375
Return t-250 to t-1	Mean	-11.3 ** (2.)	-14.9 ** (2.7)	-16.2 ** (5.4)	0.4 (9.2)	-11.4 ** (1.7)
	No of Obs.	1162	126	33	39	1360

Excess return of TSE, OSE, NSE, OTC is relative to TOPIX, Osaka 250, Nagoya 25, and JASDAQ, respectively.

**: significance at 99%, *: significance at 95%

Table 11: Short-term Mean Excess Stock Returns around Repurchase Announcements

Entire Sample
(Excess Returns, %)

(standard errors in parentheses)

	Purpose of share repurchase			Is this the firm's first repurchase announcement?			Did the firm repurchase any shares?*		
	Retire Shares	Stock Options	p-value for diff.	YES	NO	p-value for diff.	YES	NO	p-value for diff.
Return t to t+1	0.9 **	0.8	0.862	0.9 **	0.8 **	0.754	0.9 **	0.7	0.702
	(0.2)	(0.3)		(0.3)	(0.2)		(0.2)	(0.4)	
No.of Obs.	1116	330		625	824		1208	241	
Return t to t+2	1.6 **	1.3 **	0.535	2.0 **	1.2 **	0.062	1.6 **	1.3 *	0.601
	(0.3)	(0.4)		(0.4)	(0.3)		(0.2)	(0.5)	
No.of Obs.	1112	336		626	822		1209	239	
Return t to t+3	2.2 **	1.7 **	0.593	2.6 **	1.7 **	0.063	2.1 **	1.9 **	0.783
	(0.9)	(0.4)		(0.4)	(0.3)		(0.3)	(0.7)	
No.of Obs.	117	334		627	824		1208	243	
Return t to t+4	1.5 **	1.7 **	0.710	2.2 **	1.0 **	0.029	1.5 **	1.7 **	0.767
	(0.3)	(0.5)		(0.4)	(0.3)		(0.3)	(0.7)	
No.of Obs.	1105	333		621	817		1193	245	
Return t to t+5	2.4 **	2.0 **	0.507	2.9 **	1.8 **	0.042	2.2 **	2.8 **	0.427
	(0.3)	(0.5)		(0.4)	(0.3)		(0.3)	(0.7)	
No.of Obs.	1105	330		615	820		1196	239	
Return t to t+6	2.3 **	2.0 **	0.674	2.7 **	1.9 **	0.152	2.0 **	3.4 **	0.078
	(0.3)	(0.6)		(0.4)	(0.4)		(0.3)	(0.8)	
No.of Obs.	1114	335		623	826		1209	240	
Return t to t+7	2.5 **	2.2 **	0.634	2.9 **	2.1 **	0.141	2.3 **	3.1 **	0.301
	(0.3)	(0.6)		(0.4)	(0.3)		(0.3)	(0.7)	
No.of Obs.	1111	331		620	822		1200	242	
Return t to t+8	2.7 **	2.6 **	0.890	3.1 **	2.3 **	0.146	2.5 **	3.1 **	0.516
	(0.3)	(0.6)		(0.4)	(0.4)		(0.3)	(0.8)	
No.of Obs.	1106	327		623	810		1195	238	
Return t to t+9	2.8 **	2.7 **	0.825	3.4 **	2.3 **	0.099	2.8 **	2.8 **	0.924
	(0.3)	(0.6)		(0.5)	(0.4)		(0.3)	(0.8)	
No.of Obs.	1103	331		621	813		1193	241	
Return t to t+10	2.9 **	3.0 **	0.798	3.6 **	2.4 **	0.073	2.8 **	3.2 **	0.718
	(0.4)	(0.7)		(0.6)	(0.4)		(0.4)	(0.9)	
No.of Obs.	1107	334		620	821		1195	246	
Return t-2 to t-1	-0.2	0.0	0.626	0.0	-0.2	0.000	0.0	-0.7	0.148
	(0.2)	(0.3)		(0.3)	(0.3)		(0.2)	(0.5)	
No.of Obs.	1088	319		606	801		1179	228	
Return t-3 to t-1	-0.3	0.2	0.242	-0.5	0.1	0.142	0.1	-1.6 **	0.001
	(0.2)	(0.4)		(0.3)	(0.2)		(0.2)	(0.5)	
No.of Obs.	1073	319		597	795		1165	227	
Return t-4 to t-1	-0.4	1.0 *	0.007	-0.3	0.0	0.576	0.0	-0.5	0.368
	(0.3)	(0.5)		(0.4)	(0.3)		(0.2)	(0.5)	
No.of Obs.	1072	321		589	804		1163	230	
Return t-5 to t-1	-0.6	1.4 *	0.001	-0.4	0.1	0.327	-0.1	-0.6	0.424
	(0.3)	(0.6)		(0.4)	(0.3)		(0.3)	(0.6)	
No.of Obs.	1075	319		599	795		1162	232	
Return t-6 to t-1	-0.6	0.4	0.165	-0.4	-0.3	0.807	-0.1	-1.3	0.106
	(0.3)	(0.7)		(0.4)	(0.4)		(0.3)	(0.7)	
No.of Obs.	1074	315		591	798		1165	224	
Return t-7 to t-1	-0.9 *	0.8	0.021	-0.9	-0.2	0.255	-0.3	-1.3	0.218
	(0.3)	(0.6)		(0.5)	(0.4)		(0.3)	(0.7)	
No.of Obs.	1075	321		593	803		1164	232	
Return t-8 to t-1	-1.1 **	0.7	0.036	-0.9	-0.5	0.616	-0.6	-1.3	0.388
	(0.3)	(0.8)		(0.5)	(0.4)		(0.3)	(0.7)	
No.of Obs.	1078	320		598	800		1173	225	
Return t-9 to t-1	-1.1 **	1.5 *	0.001	-0.9	-0.2	0.225	-0.4	-0.8	0.653
	(0.3)	(0.7)		(0.5)	(0.4)		(0.3)	(0.7)	
No.of Obs.	1073	318		589	802		1165	226	
Return t-10 to t-1	-1.2 **	2.5 **	0.000	-0.8	0.0	0.188	-0.1	-1.2	0.760
	(0.3)	(0.7)		(0.5)	(0.4)		(0.3)	(0.8)	
No.of Obs.	1066	319		590	795		1160	225	

Excess return of TSE, OSE, NSE, OTC is relative to TOPIX, Osaka 250, Nagoya 25, and JASDAQ, respectively.

**: significance at 99% level, *: significance at 95% level

Table 11: Short-term Mean Excess Stock Returns around Repurchase Announcements

TSE Only
(Excess Returns, %)

(standard errors in parentheses)

	Purpose of share repurchase			Is this the firm's first repurchase announcement?			Did the firm repurchase any shares?*		
	Retire Shares	Stock Options	p-value for diff.	YES	NO	p-value for diff.	YES	NO	p-value for diff.
Return t to t+1	0.9 **	0.6	0.504	0.8	0.8 **	0.929	0.9 **	0.6	0.640
	(0.3)	(0.3)		(0.4)	(0.3)		(0.3)	(0.5)	
No.of Obs.	918	282		503	697		1006	194	
Return t to t+2	1.4 **	1.2 **	0.585	1.7 **	1.1 **	0.227	1.5 **	0.8	0.296
	(0.3)	(0.3)		(0.4)	(0.3)		(0.3)	(0.6)	
No.of Obs.	922	287		510	699		1013	196	
Return t to t+3	2.1 **	1.7 **	0.471	2.5 **	1.6 **	0.110	2.1 **	1.3	0.237
	(0.3)	(0.4)		(0.4)	(0.3)		(0.3)	(0.7)	
No.of Obs.	928	283		512	699		1016	195	
Return t to t+4	1.1 **	1.5 **	0.530	1.7 **	0.8 **	0.113	1.2 **	1.1	0.836
	(0.3)	(0.5)		(0.5)	(0.3)		(0.3)	(0.7)	
No.of Obs.	916	285		505	696		1005	196	
Return t to t+5	2.2 **	1.7 **	0.393	2.7 **	1.6 **	0.065	2.0 **	2.1 **	0.974
	(0.3)	(0.5)		(0.5)	(0.3)		(0.3)	(0.7)	
No.of Obs.	915	283		500	698		1007	191	
Return t to t+6	2.0 **	1.6 **	0.532	2.5 **	1.5 **	0.118	1.7 **	2.8 **	0.163
	(0.3)	(0.5)		(0.5)	(0.4)		(0.3)	(0.7)	
No.of Obs.	921	283		505	699		1011	193	
Return t to t+7	2.2 **	1.9 **	0.663	2.7 **	1.8 **	0.134	2.1 **	2.6 **	0.463
	(0.3)	(0.5)		(0.5)	(0.3)		(0.3)	(0.7)	
No.of Obs.	924	278		505	697		1009	193	
Return t to t+8	2.4 **	2.2 **	0.754	2.8 **	2.0 **	0.200	2.4 **	2.3 **	0.964
	(0.4)	(0.5)		(0.5)	(0.4)		(0.3)	(0.7)	
No.of Obs.	927	281		509	699		1016	192	
Return t to t+9	2.6 **	2.3 **	0.716	3.1 **	2.1 **	0.104	2.6 **	2.3 **	0.759
	(0.4)	(0.6)		(0.5)	(0.4)		(0.4)	(0.8)	
No.of Obs.	924	285		509	700		1015	194	
Return t to t+10	2.7	2.7 **	0.975	3.5 **	2.2 **	0.072	2.7 **	2.8 **	0.943
	(0.4)	(0.6)		(0.6)	(0.4)		(0.4)	(0.8)	
No.of Obs.	926	286		510	702		1015	197	
Return t-2 to t-1	-0.2	-0.1	0.692	0.0	-0.3	0.506	-0.1	-0.5	0.495
	(0.3)	(0.3)		(0.4)	(0.3)		(0.2)	(0.5)	
No.of Obs.	909	277		498	688		998	188	
Return t-3 to t-1	-0.3	0.1	0.400	-0.5	0.0	0.268	0.1	-1.8 **	0.001
	(0.3)	(0.4)		(0.4)	(0.3)		(0.2)	(0.5)	
No.of Obs.	909	278		499	688		998	189	
Return t-4 to t-1	-0.7 *	0.9	0.005	-0.3	-0.3	0.994	-0.3	-0.7	0.477
	(0.3)	(0.5)		(0.4)	(0.3)		(0.3)	(0.6)	
No.of Obs.	908	280		496	692		997	191	
Return t-5 to t-1	-0.8 *	1.0	0.004	-0.4	-0.3	0.858	-0.3	-0.7	0.548
	(0.3)	(0.5)		(0.4)	(0.3)		(0.3)	(0.6)	
No.of Obs.	904	276		492	688		987	193	
Return t-6 to t-1	-0.9 **	0.2	0.127	-0.6	-0.7	0.850	-0.5	-1.7	0.110
	(0.3)	(0.7)		(0.5)	(0.4)		(0.3)	(0.7)	
No.of Obs.	909	276		491	694		997	188	
Return t-7 to t-1	-1.1 **	0.7	0.016	-1.0	-0.5	0.489	-0.5	-1.6	0.233
	(0.4)	(0.7)		(0.5)	(0.4)		(0.3)	(0.8)	
No.of Obs.	907	276		491	692		992	191	
Return t-8 to t-1	-1.3 **	0.4	0.065	-1.1	-0.8	0.713	-0.8 *	-1.6	0.362
	(0.4)	(0.8)		(0.5)	(0.4)		(0.4)	(0.8)	
No.of Obs.	912	278		497	693		1002	188	
Return t-9 to t-1	-1.4 **	1.7 *	0.000	-0.9	-0.5	0.544	-0.7	-0.9	0.794
	(0.4)	(0.8)		(0.5)	(0.4)		(0.4)	(0.8)	
No.of Obs.	912	275		496	691		999	188	
Return t-10 to t-1	-1.5 **	2.6 **	0.000	-0.9	-0.3	0.402	-0.4	-1.4	0.284
	(0.4)	(0.7)		(0.5)	(0.4)		(0.4)	(0.8)	
No.of Obs.	908	276		491	693		995	189	

Excess return of TSE, OSE, NSE, OTC is relative to TOPIX, Osaka 250, Nagoya 25, and JASDAQ, respectively.

**: significance at 99% level, *: significance at 95% level

Table 11: Short-term Mean Excess Stock Returns around Repurchase Announcements

OSE Only

(Excess Returns, %)

(standard errors in parentheses)

	Purpose of share repurchase			Is this the firm's first repurchase announcement?			Did the firm repurchase any shares?*		
	Retire Shares	Stock Options	p-value for diff.	YES	NO	p-value for diff.	YES	NO	p-value for diff.
Return t to t+1	0.9 *	2.5	0.232	2.3 **	0.2	0.010	1.4 **	0.2	0.341
	(0.4)	(1.3)		(0.7)	(0.4)		(0.4)	(1.2)	
No.of Obs.	133	23		72	80		127	29	
Return t to t+2	2.4 **	2.5 **	0.947	4.4 **	0.8	0.002	2.2 **	3.2	0.574
	(0.6)	(1.9)		(1.1)	(0.5)		(0.6)	(1.7)	
No.of Obs.	124	21		66	80		118	27	
Return t to t+3	2.2 **	1.6	0.760	4.0 **	0.7	0.015	1.6 *	4.6	0.187
	(0.7)	(2.)		(1.3)	(0.6)		(0.6)	(2.3)	
No.of Obs.	123	23		65	80		118	28	
Return t to t+4	2.4 **	2.7	0.880	5.0 **	0.1	0.001	1.8 *	4.8	0.249
	(0.8)	(2.2)		(1.3)	(0.6)		(0.6)	(2.5)	
No.of Obs.	122	24		69	80		117	29	
Return t to t+5	2.8 **	1.3	0.471	4.2 **	1.1	0.033	1.8 *	5.3 *	0.142
	(0.8)	(1.9)		(1.1)	(0.9)		(0.7)	(2.3)	
No.of Obs.	121	26		67	80		118	29	
Return t to t+6	2.4 **	1.8	0.827	3.8 **	1.1	0.075	1.8 *	4.5 *	0.210
	(0.8)	(2.3)		(1.1)	(1.)		(0.8)	(2.)	
No.of Obs.	123	25		67	72		120	28	
Return t to t+7	2.6 **	2.1	0.825	4.4 **	1.0	0.015	2.2 **	3.7 *	0.405
	(0.7)	(2.2)		(1.)	(1.)		(0.8)	(1.6)	
No.of Obs.	120	26		66	77		118	28	
Return t to t+8	2.7 **	2.2	0.845	4.9 **	0.6	0.006	2.1 *	5.0 *	0.208
	(0.8)	(2.7)		(1.2)	(1.1)		(0.9)	(2.1)	
No.of Obs.	118	23		68	72		115	26	
Return t to t+9	2.6 **	3.9	0.703	4.8 **	1.1	0.035	2.3 *	4.8 *	0.251
	(0.9)	(3.1)		(1.3)	(1.2)		(1.)	(1.9)	
No.of Obs.	117	22		64	77		110	29	
Return t to t+10	2.8 **	4.7	0.573	6.0 **	0.6	0.004	2.6 *	5.5 *	0.218
	(0.9)	(3.1)		(1.4)	(1.2)		(1.)	(2.2)	
No.of Obs.	117	24		66	70		113	28	
Return t-2 to t-1	-0.7	0.9	0.009	-0.9	-0.1	0.298	-0.2	-1.6	0.304
	(0.4)	(0.5)		(0.7)	(0.3)		(0.3)	(1.2)	
No.of Obs.	121	21		63	79		117	25	
Return t-3 to t-1	-0.6	0.1	0.421	-1.4	0.2	0.108	-0.2	-1.9	0.234
	(0.6)	(0.6)		(0.9)	(0.5)		(0.5)	(1.3)	
No.of Obs.	110	22		58	74		108	24	
Return t-4 to t-1	0.6	-0.1	0.614	-0.9	1.6 *	0.026	0.8	-0.9	0.330
	(0.6)	(1.1)		(0.9)	(0.6)		(0.6)	(1.6)	
No.of Obs.	110	20		57	75		107	23	
Return t-5 to t-1	0.3	0.5	0.919	-0.9	1.4 *	0.053	0.7	-1.2	0.174
	(0.6)	(1.1)		(1.)	(0.6)		(0.6)	(1.3)	
No.of Obs.	118	20		63	75		114	24	
Return t-6 to t-1	1.2	-0.1	0.465	0.5	1.4	0.548	1.5 *	-1.4	0.120
	(0.7)	(1.6)		(1.2)	(0.7)		(0.7)	(1.7)	
No.of Obs.	114	19		61	70		109	24	
Return t-7 to t-1	0.7	-0.1	0.576	0.0	1.0	0.476	1.0	-1.6	0.168
	(0.8)	(1.1)		(1.2)	(0.7)		(0.7)	(1.8)	
No.of Obs.	115	23		61	73		113	25	
Return t-8 to t-1	0.8	0.7	0.951	0.8	0.7	0.969	1.1	-0.9	0.247
	(0.8)	(1.4)		(1.2)	(0.8)		(0.8)	(1.5)	
No.of Obs.	111	22		58	70		111	22	
Return t-9 to t-1	0.2	0.5	0.844	-1.4	1.3	0.108	0.6	-1.2	0.366
	(0.9)	(1.3)		(1.4)	(0.8)		(0.8)	(1.9)	
No.of Obs.	110	21		53	73		105	26	
Return t-10 to t-1	0.8	0.2	0.704	-0.2	1.4	0.313	1.2	-1.7	0.683
	(0.8)	(1.3)		(1.2)	(0.8)		(0.7)	(7.)	
No.of Obs.	107	21		58	67		106	22	

Excess return of TSE, OSE, NSE, OTC is relative to TOPIX, Osaka 250, Nagoya 25, and JASDAQ, respectively.

**: significance at 99% level, *: significance at 95% level

Table 11: Short-term Mean Excess Stock Returns around Repurchase Announcements

NSE Only
(Excess Returns, %)

(standard errors in parentheses)

	Purpose of share repurchase			Is this the firm's first repurchase announcement?			Did the firm repurchase any shares?*		
	Retire Shares	Stock Options	p-value for diff.	YES	NO	p-value for diff.	YES	NO	p-value for diff.
Return t to t+1	-0.4	2.8	0.127	-0.3	0.4	0.765	-0.4	2.2	0.139
	(1.2)	(1.7)		(2.1)	(0.8)		(1.3)	(1.3)	
No.of Obs.	39	7		21	25		37	9	
Return t to t+2	1.3	-1.6	0.401	0.2	1.3	0.465	0.5	2.8	0.245
	(0.7)	(3.3)		(1.1)	(1.1)		(0.9)	(1.8)	
No.of Obs.	40	7		20	27		40	7	
Return t to t+3	2.7 *	-1.0	0.307	1.5	2.5	0.616	1.8	2.8	0.629
	(1.)	(3.4)		(1.6)	(1.4)		(1.3)	(1.6)	
No.of Obs.	39	8		21	26		36	11	
Return t to t+4	4.8 **	1.1	0.494	3.8 *	4.8 *	0.694	5.3 **	1.4	0.033
	(1.3)	(5.3)		(1.5)	(1.9)		(1.6)	(0.8)	
No.of Obs.	43	5		20	28		37	11	
Return t to t+5	4.0 **	2.7	0.781	2.8	4.8 **	0.358	4.6 **	1.5	0.076
	(1.1)	(4.5)		(1.5)	(1.5)		(1.4)	(1.1)	
No.of Obs.	43	4		20	27		36	11	
Return t to t+6	5.5 **	2.1	0.473	3.9 *	6.0 *	0.479	5.1 *	5.0	0.966
	(1.6)	(4.5)		(1.7)	(2.4)		(1.8)	(3.)	
No.of Obs.	45	7		23	29		42	10	
Return t to t+7	5.0 **	1.0	0.461	2.6	5.6 **	0.223	5.1 **	2.3	0.259
	(1.2)	(5.4)		(1.7)	(1.8)		(1.6)	(1.9)	
No.of Obs.	41	7		19	29		36	12	
Return t to t+8	4.5 *	-1.3	0.192	2.2	5.6 *	0.256	4.8 *	2.0	0.359
	(1.6)	(4.1)		(1.8)	(2.3)		(1.8)	(2.5)	
No.of Obs.	38	3		19	22		30	11	
Return t to t+9	4.7 **	-0.3	0.152	1.9	5.8 **	0.156	5.4 **	-0.5	0.047
	(1.5)	(3.2)		(2.2)	(1.7)		(1.5)	(2.5)	
No.of Obs.	36	5		18	23		32	9	
Return t to t+10	3.6 *	3.4	0.974	-0.1	5.7 **	0.061	4.5 *	1.2	0.363
	(1.6)	(4.1)		(2.5)	(1.8)		(1.7)	(3.3)	
No.of Obs.	37	4		15	26		29	12	
Return t-2 to t-1	3.4	0.5	0.116	1.7	4.2	0.406	3.7	1.1	0.402
	(1.8)	(0.5)		(1.2)	(2.7)		(1.9)	(2.4)	
No.of Obs.	31	4		16	19		27	8	
Return t-3 to t-1	-0.2	-1.7	0.604	-1.6	0.6	0.476	-0.4	0.1	0.848
	(1.5)	(2.7)		(2.7)	(1.4)		(1.7)	(2.1)	
No.of Obs.	31	2		13	20		26	7	
Return t-4 to t-1	2.7	-2.1	0.108	3.7	1.3	0.415	2.1	2.1	0.995
	(1.7)	(2.5)		(2.1)	(2.)		(1.7)	(3.2)	
No.of Obs.	35	5		14	26		31	9	
Return t-5 to t-1	1.0	2.0	0.778	1.6	0.6	0.752	1.4	0.3	0.781
	(1.7)	(3.1)		(2.1)	(2.2)		(1.7)	(3.3)	
No.of Obs.	30	6		18	18		28	8	
Return t-6 to t-1	4.0	0.5	0.521	3.5	3.5	0.995	3.4	4.2	0.860
	(1.9)	(5.2)		(1.8)	(3.)		(2.)	(4.6)	
No.of Obs.	28	5		15	18		28	5	
Return t-7 to t-1	0.7	0.3	0.909	-0.3	1.5	0.589	0.5	1.2	0.823
	(1.9)	(3.1)		(2.2)	(2.5)		(2.1)	(2.6)	
No.of Obs.	32	6		18	20		29	9	
Return t-8 to t-1	-1.8	5.6	0.014	0.3	-2.3	0.376	-1.0	-1.2	0.950
	(1.6)	(2.5)		(1.)	(2.8)		(1.8)	(2.5)	
No.of Obs.	35	4		19	20		31	8	
Return t-9 to t-1	1.3	2.0	0.898	1.1	1.7	0.868	2.1	-2.6	0.157
	(2.)	(5.1)		(2.)	(3.1)		(2.1)	(2.6)	
No.of Obs.	27	5		15	17		27	5	
Return t-10 to t-1	1.3	3.9	0.610	0.5	2.8	0.522	1.4	3.1	0.698
	(1.9)	(4.8)		(2.4)	(2.6)		(2.)	(4.)	
No.of Obs.	32	6		19	19		31	7	

Excess return of TSE, OSE, NSE, OTC is relative to TOPIX, Osaka 250, Nagoya 25, and JASDAQ, respectively.

**: significance at 99% level, *: significance at 95% level

Table 11: Short-term Mean Excess Stock Returns around Repurchase Announcements

OTC Only
(Excess Returns, %)

(standard errors in parentheses)

	Purpose of share repurchase			Is this the firm's first repurchase announcement?			Did the firm repurchase any shares?*		
	Retire Shares	Stock Options	p-value for diff.	YES	NO	p-value for diff.	YES	NO	p-value for diff.
Return t to t+1	2.9 **	1.4	0.441	1.3	3.7 *	0.184	1.9	3.5	0.509
	(0.8)	(1.8)		(1.2)	(1.4)		(1.)	(2.2)	
No.of Obs.	26	21		29	18		38	9	
Return t to t+2	4.2	3.0	0.727	2.8	5.1	0.589	3.5	4.1	0.897
	(2.2)	(2.7)		(1.6)	(3.8)		(1.9)	(4.2)	
No.of Obs.	26	21		30	17		38	9	
Return t to t+3	6.6 **	3.1	0.374	2.8	8.9 *	0.148	4.6 *	7.4	0.690
	(1.6)	(3.7)		(1.6)	(3.9)		(1.6)	(7.1)	
No.of Obs.	27	20		29	18		38	9	
Return t to t+4	6.4 **	4.2	0.625	2.9	9.7 *	0.141	5.1 *	6.6	0.843
	(2.)	(3.9)		(1.9)	(4.3)		(1.8)	(7.1)	
No.of Obs.	24	19		27	16		34	9	
Return t to t+5	6.2 **	6.8	0.919	3.7	11.5	0.213	5.0 *	12.8	0.476
	(1.9)	(5.6)		(1.9)	(6.)		(1.8)	(10.8)	
No.of Obs.	26	17		28	15		35	8	
Return t to t+6	6.8 **	7.6	0.906	3.2	13.7	0.162	5.7 *	13.0	0.595
	(2.)	(6.5)		(1.9)	(7.3)		(1.9)	(13.6)	
No.of Obs.	25	20		28	17		36	9	
Return t to t+7	8.3 **	6.1	0.722	3.5	14.4	0.118	6.0 **	12.7	0.580
	(2.)	(5.9)		(2.)	(6.7)		(1.9)	(12.1)	
No.of Obs.	26	20		30	16		37	9	
Return t to t+8	8.5 **	8.2	0.966	4.4	15.2	0.184	6.6 *	15.2	0.533
	(2.7)	(6.6)		(2.6)	(7.7)		(2.3)	(13.7)	
No.of Obs.	23	20		27	16		34	9	
Return t to t+9	9.7 **	7.0	0.713	4.9	16.0	0.175	7.7 *	11.9	0.745
	(3.2)	(6.6)		(3.1)	(7.6)		(2.8)	(12.7)	
No.of Obs.	26	19		30	15		36	9	
Return t to t+10	7.0 *	5.6	0.847	2.0	13.4*	0.107	6.1 *	7.6	0.916
	(2.9)	(6.6)		(3.3)	(6.2)		(2.5)	(13.6)	
No.of Obs.	27	20		29	18		38	9	
Return t-2 to t-1	1.0	-0.2	0.647	0.7	0.2	0.866	1.5	-4.7	0.250
	(0.8)	(2.6)		(0.8)	(2.9)		(0.8)	(5.4)	
No.of Obs.	27	17		29	15		37	7	
Return t-3 to t-1	0.6	2.3	0.340	0.3	3.4 *	0.083	1.3	1.8	0.769
	(1.1)	(1.4)		(1.)	(1.5)		(1.)	(1.4)	
No.of Obs.	23	17		27	13		33	7	
Return t-4 to t-1	1.1	4.5	0.204	0.5	6.2 *	0.045	2.9	1.7	0.722
	(1.5)	(2.2)		(1.3)	(2.5)		(1.5)	(2.9)	
No.of Obs.	19	16		22	13		28	7	
Return t-5 to t-1	-0.9	8.0	0.059	-0.9	9.8	0.104	2.3	5.6	0.655
	(2.)	(4.3)		(1.8)	(6.3)		(2.8)	(6.8)	
No.of Obs.	23	26		26	14		33	7	
Return t-6 to t-1	0.1	4.7	0.334	-1.5	7.8	0.047	1.1	5.7	0.451
	(2.2)	(4.3)		(2.2)	(4.1)		(2.3)	(5.6)	
No.of Obs.	23	15		24	14		31	7	
Return t-7 to t-1	0.4	2.9	0.580	-1.4	6.3	0.096	0.8	4.7	0.484
	(1.9)	(4.)		(1.8)	(4.3)		(2.2)	(5.1)	
No.of Obs.	21	16		23	14		30	7	
Return t-8 to t-1	0.1	4.2	0.392	-1.7	9.1	0.059	0.8	6.5	0.387
	(2.9)	(3.9)		(2.1)	(5.3)		(2.6)	(6.)	
No.of Obs.	20	16		24	12		29	7	
Return t-9 to t-1	3.1	0.5	0.622	-0.8	6.4	0.135	1.4	5.3	0.505
	(2.1)	(4.7)		(2.7)	(4.)		(2.6)	(5.2)	
No.of Obs.	24	17		25	16		34	7	
Return t-10 to t-1	-0.1	2.9	0.538	-1.6	6.3	0.128	1.8	-0.6	0.733
	(2.)	(4.4)		(2.2)	(4.7)		(2.4)	(6.6)	
No.of Obs.	19	16		22	13		28	7	

Excess return of TSE, OSE, NSE, OTC is relative to TOPIX, Osaka 250, Nagoya 25, and JASDAQ, respectively.

**: significance at 99% level, *: significance at 95% level

Table 11: Long-term Mean Excess Stock Returns around Repurchase Announcements

Entire Sample
(Excess Returns, %)

(standard errors in parentheses)

	Purpose of share repurchase			Is this the firm's first repurchase announcement?			Did the firm repurchase any shares?*		
	Retire Shares	Stock Options	p-value for diff.	YES	NO	p-value for diff.	YES	NO	p-value for diff.
Return t to t+20	3.0 ** (0.4)	4.7 ** (1.)	0.113	3.8 ** (0.6)	3.0 ** (0.5)	0.309	3.1 ** (0.4)	4.9 ** (1.3)	0.172
No.of Obs.	1087	328		616	799		1184	234	
Return t to t+125	8.0 ** (1.)	13.5** (3.4)	0.118	9.6 ** (1.5)	9.1 ** (1.6)	0.791	8.3 ** (1.1)	14.5** (3.7)	0.112
No.of Obs.	1087	329		609	807		1182	234	
Return t to t+250	15.0** (1.7)	21.7** (4.3)	0.149	13.4** (2.7)	19.0** (2.)	0.096	15.2** (1.8)	23.3** (4.1)	0.071
No.of Obs.	1100	325		620	805		1187	238	
Return t-20 to t-1	-1.3 ** (0.4)	4.7 ** (0.8)	0.000	-0.7 (0.6)	0.7 (0.5)	0.083	-0.1 (0.4)	0.7 (1.1)	0.541
No.of Obs.	1084	323		600	807		1179	228	
Return t-125 to t-1	-5.4 ** (0.9)	3.0 (4.1)	0.048	-3.7 (2.3)	-3.3 ** (1.1)	0.863	-4.3 ** (1.3)	0.4 (2.3)	0.074
No.of Obs.	1064	311		584	791		1143	232	
Return t-250 to t-1	-15.4** (1.1)	2.1 (6.5)	0.008	-13.1** (3.4)	-10.1** (1.5)	0.431	-13.6** (1.2)	-0.2 (8.4)	0.113
No.of Obs.	1049	311		588	772		1135	225	

Excess return of TSE, OSE, NSE, OTC is relative to TOPIX, Osaka 250, Nagoya 25, and JASDAQ, respectively.

**: significance at 99% level, *: significance at 95% level

Table 11: Long-term Mean Excess Stock Returns around Repurchase Announcements

TSE Only

(Excess Returns, %)

(standard errors in parentheses)

	Purpose of share repurchase			Is this the firm's first repurchase announcement?			Did the firm repurchase any shares?*		
	Retire Shares	Stock Options	p-value for diff.	YES	NO	p-value for diff.	YES	NO	p-value for diff.
Return t to t+20	2.8 ** (0.5)	4.1 ** (0.8)	0.142	3.7 ** (0.7)	2.7 ** (0.5)	0.216	3.0 ** (0.4)	3.7 ** (0.9)	0.482
No.of Obs.	918	281		509	690		1007	192	
Return t to t+125	8.8 ** (1.1)	10.7** (2.2)	0.444	9.8 ** (1.5)	8.9 ** (1.3)	0.650	8.8 ** (1.1)	12.0** (2.)	0.159
No.of Obs.	913	280		503	690		1002	191	
Return t to t+250	15.1** (1.7)	16.8** (2.2)	0.547	10.8** (2.2)	19.0** (1.8)	0.005	14.5** (1.5)	20.5** (3.7)	0.141
No.of Obs.	919	282		510	691		1010	191	
Return t-20 to t-1	-1.5 ** (0.5)	4.1 ** (0.8)	0.000	-0.9 (0.7)	0.4 (0.5)	0.141	-0.3 (0.4)	0.6 (1.2)	0.462
No.of Obs.	917	281		498	700		1006	192	
Return t-125 to t-1	-6.1** (1.)	5.2 (4.7)	0.018	-2.9 (2.7)	-3.9 ** (1.2)	0.747	-4.4 ** (1.5)	1.4 (2.6)	0.053
No.of Obs.	899	271		487	683		980	190	
Return t-250 to t-1	-15.4** (1.2)	2.4 (7.4)	0.017	-12.2** (4.1)	-10.6** (1.6)	0.713	-13.9** (1.3)	2.4 (10.1)	0.110
No.of Obs.	892	270		489	673		976	186	

Excess return of TSE, OSE, NSE, OTC is relative to TOPIX, Osaka 250, Nagoya 25, and JASDAQ, respectively.

**: significance at 99% level, *: significance at 95% level

Table 11: Long-term Mean Excess Stock Returns around Repurchase Announcements

OSE Only

(Excess Returns, %)

(standard errors in parentheses)

	Purpose of share repurchase			Is this the firm's first repurchase announcement?			Did the firm repurchase any shares?*		
	Retire Shares	Stock Options	p-value for diff.	YES	NO	p-value for diff.	YES	NO	p-value for diff.
Return t to t+20	1.9 (1.3)	7.3 (3.9)	0.189	5.0 * (1.9)	1.0 (1.6)	0.116	1.9 (1.1)	7.4 (4.9)	0.272
No.of Obs.	110	23		61	72		111	22	
Return t to t+125	-0.1 (2.5)	8.6 (5.2)	0.131	5.9 (3.5)	-2.4 (2.9)	0.069	0.0 (2.5)	7.1 (4.8)	0.195
No.of Obs.	116	23		62	77		113	26	
Return t to t+250	1.0 (4.2)	14.5 (12.3)	0.295	8.1 (6.2)	-1.6 (5.2)	0.234	-1.8 (3.5)	21.6 (13.9)	0.104
No.of Obs.	113	20		63	70		106	27	
Return t-20 to t-1	0.4 (1.3)	2.9 (1.7)	0.238	0.2 (1.8)	1.3 (1.4)	0.618	1.5 (1.2)	-3.0 (3.)	0.167
No.of Obs.	107	21		58	70		108	20	
Return t-125 to t-1	-4.9 * (2.1)	-14.5 (4.5)	0.057	-7.3 * (2.8)	-5.8 * (2.8)	0.706	-6.4 * (2.3)	-6.5 (3.3)	0.986
No.of Obs.	109	21		57	73		104	26	
Return t-250 to t-1	-15.3** (2.6)	-13.4 (9.2)	0.846	-16.7** (3.9)	-15.2** (3.7)	0.777	-15.1** (2.9)	-14.2* (6.5)	0.903
No.of Obs.	105	21		59	67		101	25	

Excess return of TSE, OSE, NSE, OTC is relative to TOPIX, Osaka 250, Nagoya 25, and JASDAQ, respectively.

**: significance at 99% level, *: significance at 95% level

Table 11: Long-term Mean Excess Stock Returns around Repurchase Announcements

NSE Only
(Excess Returns, %)

(standard errors in parentheses)

	Purpose of share repurchase			Is this the firm's first repurchase announcement?			Did the firm repurchase any shares?*		
	Retire Shares	Stock Options	p-value for diff.	YES	NO	p-value for diff.	YES	NO	p-value for diff.
Return t to t+20	4.3 * (1.8)	-2.0 (5.)	0.236	1.9 (3.2)	4.4* (1.8)	0.488	3.7 (1.9)	2.1 (3.9)	0.719
No.of Obs.	33	6		17	22		30	9	
Return t to t+125	3.6 (4.2)	-2.1 (6.3)	0.452	1.5 (5.2)	3.6 (5.1)	0.783	1.8 (4.4)	6.0 (5.6)	0.553
No.of Obs.	35	7		19	23		33	9	
Return t to t+250	12.5 (6.3)	-0.7 (14.1)	0.394	14.0 (12.)	9.9 (5.9)	0.760	14.5 (7.7)	4.1 (8.)	0.348
No.of Obs.	39	3		17	25		30	12	
Return t-20 to t-1	-0.7 (1.6)	5.8 (4.8)	0.197	-0.2 (2.4)	0.3 (2.1)	0.884	0.6 (1.9)	-1.7 (2.9)	0.498
No.of Obs.	36	5		17	24		32	9	
Return t-125 to t-1	-1.1 (4.1)	1.8 (9.)	0.766	-7.9 (5.3)	4.6 (4.9)	0.083	1.0 (4.7)	-5.7 (5.1)	0.331
No.of Obs.	33	4		16	21		27	10	
Return t-250 to t-1	-15.5* (5.9)	-20.8 (12.4)	0.699	-22.2* (8.)	-11.7 (7.3)	0.333	-16.0* (7.)	-16.7* (5.3)	0.934
No.of Obs.	29	4		14	19		25	8	

Excess return of TSE, OSE, NSE, OTC is relative to TOPIX, Osaka 250, Nagoya 25, and JASDAQ, respectively.

**: significance at 99% level, *: significance at 95% level

Table 11: Long-term Mean Excess Stock Returns around Repurchase Announcements

OTC Only

(Excess Returns, %)

(standard errors in parentheses)

	Purpose of share repurchase			Is this the firm's first repurchase announcement?			Did the firm repurchase any shares?*		
	Retire Shares	Stock Options	p-value for diff.	YES	NO	p-value for diff.	YES	NO	p-value for diff.
Return t to t+20	10.6** (2.8)	12.9 (13.5)	0.868	4.5 (4.1)	25.1* (14.3)	0.166	7.6 * (3.5)	29.5 (27.5)	0.431
No.of Obs.	26	18		29	15		36	8	
Return t to t+125	24.3* (9.8)	67.2 (47.2)	0.373	20.6 (18.5)	77.7 (46.7)	0.256	28.4 (15.2)	108.9 (97.4)	0.414
No.of Obs.	23	19		25	17		34	8	
Return t to t+250	71.1* (25.9)	101.4 (59.3)	0.640	68.5 (38.2)	107.0 (41.9)	0.498	75.2* (31.6)	125.6 (64.6)	0.483
No.of Obs.	29	20		30	19		41	8	
Return t-20 to t-1	-3.9 (2.5)	17.1* (7.5)	0.008	0.8 (2.5)	12.1 (10.1)	0.275	2.2 (3.9)	15.3 (10.)	0.223
No.of Obs.	24	16		27	13		33	7	
Return t-125 to t-1	13.1 (10.5)	-11.9 (10.4)	0.091	-9.4 (8.7)	24.8 (13.2)	0.031	2.4 (8.3)	7.6 (22.6)	0.831
No.of Obs.	23	15		24	14		32	6	
Return t-250 to t-1	-15.2* (6.9)	22.9 (19.)	0.059	-20.6** (6.6)	42.5 (19.9)	0.003	0.3 (9.8)	1.1 (27.6)	0.979
No.of Obs.	23	16		26	13		33	6	

Excess return of TSE, OSE, NSE, OTC is relative to TOPIX, Osaka 250, Nagoya 25, and JASDAQ, respectively.

**: significance at 99% level, *: significance at 95% level

Table 12: Regression Analysis of Short-term Excess Stock Returns after Repurchase Announcements

(Excess Returns, %)

(standard errors in parentheses)

		Was the purpose of the repurchase to provide shares for stock options?	Was this the firm's first repurchase announcement?	Did the firm repurchase any shares?	Year Effects					intercept	R^2	No of Obs.
					1996	1997	1998	1999	2000			
TSE	Return t to t+1	-0.3 (0.6)	-0.4 (0.5)	-0.6 (0.7)	0.7 (2.8)	1.6 (1.3)	0.1 (0.9)	-1.3 (0.9)	-0.8 (0.8)	1.7* (.8)	0.02	1200
	Return t to t+2	-0.4 (0.6)	0.3 (0.5)	-1.0 (0.7)	-1.6 (2.9)	2.1 (1.4)	-0.8 (0.9)	-1.8 (0.9)	-1.3 (0.9)	2.5* (.8)	0.01	1209
	Return t to t+3	-0.5 (0.6)	0.4 (0.6)	-1.0 (0.7)	-0.8 (3.1)	2.5 (1.5)	-0.1 (1.)	-1.1 (1.)	-0.8 (0.9)	2.5* (.9)	0.01	1211
	Return t to t+4	0.0 (0.7)	0.8 (0.6)	-0.3 (0.8)	-1.2 (3.5)	3.2 (1.6)	-1.8 (1.1)	-2.3* (1.1)	-0.9 (1.)	2.0* (1.)	0.02	1201
	Return t to t+5	-0.8 (0.7)	0.8 (0.6)	-0.2 (0.8)	-2.3 (3.4)	4.1* (1.6)	-1.4 (1.1)	-2.7* (1.1)	-1.0 (1.)	3.1** (1.)	0.02	1198
	Return t to t+6	-0.7 (0.7)	0.7 (0.6)	0.5 (0.8)	-3.1 (3.5)	3.4* (1.7)	-2.4* (1.1)	-3.8** (1.1)	-2.2* (1.)	3.8** (1.)	0.03	1204
	Return t to t+7	-0.3 (0.7)	0.4 (0.6)	-0.1 (0.8)	-3.5 (3.4)	2.3 (1.6)	-1.6 (1.1)	-3.6** (1.1)	-2.5* (1.)	4.2** (1.)	0.02	1202
	Return t to t+8	-0.3 (0.7)	0.2 (0.6)	-0.7 (0.8)	-2.1 (3.5)	2.4 (1.7)	-1.0 (1.2)	-3.3** (1.1)	-2.3* (1.1)	4.2** (1.)	0.02	1208
	Return t to t+9	-0.5 (0.8)	0.6 (0.7)	-1.1 (0.9)	-4.2 (3.8)	1.8 (1.8)	-2.7* (1.2)	-5.2** (1.2)	-3.3** (1.1)	5.6** (1.1)	0.03	1209
	Return t to t+10	-0.3 (0.8)	1.0 (0.8)	-0.7 (1.)	-4.5 (4.1)	1.0 (2.)	-2.9* (1.3)	-5.4** (1.3)	-3.0* (1.2)	5.5 (1.2)	0.02	1212
OSE	Return t to t+1	1.4 (1.1)	1.9* (0.8)	-0.9 (1.)	0.4 (5.)	-5.6* (2.3)	-0.7 (1.6)	-1.0 (1.5)	-2.1 (1.6)	1.6 (1.4)	0.11	156
	Return t to t+2	-0.6 (1.9)	4.0** (1.6)	1.9 (1.8)	-7.5 (9.)	-8.1* (4.1)	-3.8 (3.2)	-3.4 (3.1)	-4.9* (3.1)	4.2* (2.9)	0.13	145
	Return t to t+3	-1.7 (1.8)	3.9** (1.4)	3.9* (1.7)	-8.6 (8.2)	-6.3 (3.7)	-1.9 (2.6)	-2.1 (2.5)	-3.7 (2.5)	2.5 (2.3)	0.11	146
	Return t to t+4	-0.9 (1.9)	5.4** (1.5)	4.0* (1.8)	-11.5 (9.)	-7.3 (4.1)	-3.4 (3.1)	-2.8 (3.1)	-5.4 (3.1)	3.1 (2.9)	0.14	146
	Return t to t+5	-2.3 (2.)	3.4* (1.6)	4.3* (1.8)	-5.1 (9.3)	2.1 (4.1)	2.9 (3.2)	3.0 (3.2)	0.8 (3.2)	-1.5 (3.)	0.09	147
	Return t to t+6	-0.7 (2.1)	2.5 (1.7)	3.5 (2.)	-4.3 (9.8)	2.9 (4.8)	2.8 (3.9)	3.4 (3.8)	1.2 (3.7)	-1.8 (3.5)	0.06	148
	Return t to t+7	-0.9 (1.9)	3.3* (1.6)	2.4 (1.8)	-2.5 (9.)	3.5 (4.2)	2.7 (3.4)	4.6 (3.3)	1.5 (3.2)	-2.0 (3.)	0.08	146
	Return t to t+8	-1.1 (2.3)	4.5* (1.8)	3.9 (2.1)	-4.2 (10.2)	0.6 (4.8)	2.9 (4.)	3.2 (3.8)	0.9 (3.8)	-2.2 (3.7)	0.09	141
	Return t to t+9	1.1 (2.5)	3.6 (2.)	3.5 (2.3)	-5.4 (11.2)	-2.3 (5.2)	1.1 (3.9)	2.7 (3.9)	-1.7 (3.9)	-0.3 (3.7)	0.07	139
	Return t to t+10	1.3 (2.6)	5.0* (2.1)	4.1 (2.4)	-5.2 (12.)	1.1 (5.9)	2.9 (4.9)	4.1 (4.8)	-0.1 (4.8)	-2.4 (4.6)	0.08	141
NSE	Return t to t+1	3.7 (3.3)	-1.1 (2.7)	2.2 (3.3)		5.4 (9.5)	-0.2 (6.)	0.5 (6.)	0.1 (5.7)	-0.6 (5.8)	0.07	46
	Return t to t+2	-1.3 (2.4)	-2.4 (1.9)	1.8 (2.6)		3.9 (5.8)	1.0 (4.6)	-1.1 (4.4)	-3.0 (4.2)	2.7 (4.1)	0.14	47
	Return t to t+3	-1.4 (3.)	-3.2 (2.5)	1.1 (2.8)		12.7 (9.2)	4.7 (7.9)	2.5 (7.8)	-0.2 (7.6)	0.9 (7.6)	0.16	47
	Return t to t+4	-3.4 (4.3)	-1.8 (3.1)	-1.7 (3.6)		-3.2 (10.8)	1.1 (6.5)	3.6 (6.1)	-2.5 (5.8)	5.2 (5.7)	0.13	48
	Return t to t+5	0.8 (4.3)	-4.3 (2.8)	-3.9 (3.)		2.1 (7.)	0.9 (4.8)	-2.7 (4.6)	-2.3 (4.4)	7.7 (4.3)	0.1	47
	Return t to t+6	-1.4 (4.9)	-3.6 (3.7)	0.7 (4.4)		-6.0 (10.8)	-0.7 (7.6)	-4.3 (7.3)	-7.2 (7.3)	10.9 (6.9)	0.07	52
	Return t to t+7	-3.0 (3.7)	-4.5 (3.1)	-2.8 (3.2)		-8.0 (8.5)	-1.5 (6.4)	-4.7 (6.1)	-8.7 (5.5)	12.8* (5.4)	0.19	48
	Return t to t+8	-3.8 (6.4)	-4.9 (4.)	-3.5 (3.8)		-4.6 (10.)	3.8 (7.7)	-2.0 (7.9)	1.5 (7.6)	6.7 (7.6)	0.13	47
	Return t to t+9	-2.1 (4.2)	-6.7* (3.2)	-6.4 (3.6)		-3.7 (10.5)	6.0 (9.3)	-1.1 (9.2)	-1.6 (8.8)	8.3 (8.9)	0.29	41
	Return t to t+10	-0.5 (5.1)	-4.1 (3.3)	-3.1 (3.7)		-22.6* (11.)	-5.1 (6.)	-2.5 (5.6)	-2.2 (5.3)	9.2 (5.2)	0.23	48

Excess return of TSE, OSE, NSE, OTC is relative to TOPIX, Osaka 250, Nagoya 25, and JASDAQ, respectively.

**: significance at 99% level, *: significance at 95% level

Table 12: Regression Analysis of Short-term Excess Stock Returns after Repurchase Announcements

(Excess Returns, %)

(standard errors in parentheses)

		Was the purpose of the repurchase to provide shares for stock options?	Was this the firm's first repurchase announcement?	Did the firm repurchase any shares?	Year Effects					intercept	R^2	No of Obs.
					1996	1997	1998	1999	2000			
OTC	Return t to t+1	0.7 (2.3)	-3.8 (2.)	1.0 (2.7)	10.0 (6.3)	8.2 (3.2)	5.8* (3.2)	6.1 (3.3)		-1.7 (3.3)	0.21	47
	Return t to t+2	0.0 (4.4)	-4.6 (4.)	0.7 (5.3)	6.6 (12.1)	10.3 (6.2)	1.7 (6.2)	9.6 (6.5)		0.7 (6.4)	0.14	47
	Return t to t+3	-3.0 (4.7)	-7.7 (4.)	5.8 (5.4)	1.2 (12.4)	10.6 (6.3)	3.2 (6.5)	12.1 (6.6)		3.6 (6.5)	0.24	47
	Return t to t+4	0.8 (5.)	-8.8 (4.6)	3.7 (5.9)	5.8 (13.4)	15.2* (7.2)	8.0 (7.3)	14.2 (7.3)		-0.4 (7.5)	0.22	43
	Return t to t+5	1.6 (6.7)	-9.6 (5.5)	11.3 (7.5)	-0.7 (16.3)	13.5 (8.2)	7.6 (9.2)	18.2 (9.)		0.3 (8.9)	0.27	43
	Return t to t+6	1.0 (7.8)	-11.6 (6.9)	10.8 (9.2)	-2.5 (21.1)	11.6 (11.)	6.6 (10.9)	16.7 (11.3)		3.3 (11.2)	0.18	45
	Return t to t+7	-6.4 (6.8)	-11.7 (6.4)	13.9 (8.3)	-15.9 (19.1)	2.6 (10.2)	-1.4 (10.2)	5.0 (10.5)		14.4 (10.3)	0.17	46
	Return t to t+8	-0.7 (8.8)	-12.8 (8.1)	10.4 (10.2)	6.2 (23.2)	8.1 (11.9)	2.1 (12.5)	12.4 (12.6)		8.9 (12.6)	0.14	43
	Return t to t+9	-1.1 (8.8)	-12.3 (8.1)	9.2 (10.3)	-2.8 (23.7)	13.8 (12.3)	8.9 (13.)	12.3 (12.9)		6.0 (13.1)	0.12	45
	Return t to t+10	0.5 (8.3)	-13.5 (7.8)	4.5 (10.2)		6.0 (20.2)	1.4 (20.1)	7.9 (20.5)	-5.3 (23.5)	10.4 (20.2)	0.1	47
Total	Return t to t+1	0.0 (0.5)	-0.3 (0.4)	-0.5 (0.6)	1.3 (2.3)	1.1 (1.1)	0.0 (0.8)	-1.1 (0.8)	-1.0 (0.7)	1.6 1.6*	0.01	1449
	Return t to t+2	-0.3 (0.5)	0.5 (0.5)	-0.5 (0.6)	-1.4 (2.5)	1.8 (1.2)	-1.0 (0.9)	-1.5 (0.8)	-1.7* (0.8)	2.6** (0.8)	0.01	1448
	Return t to t+3	-0.5 (0.6)	0.5 (0.5)	-0.3 (0.7)	-0.7 (2.7)	2.5 (1.3)	0.1 (0.9)	-0.6 (0.9)	-1.0 (0.9)	2.4* (0.8)	0.01	1451
	Return t to t+4	0.0 (0.6)	1.0 (0.6)	0.1 (0.7)	-1.9 (3.)	2.7 (1.5)	-1.3 (1.1)	-1.5 (1.)	-1.3 (1.)	2.1* (0.9)	0.01	1438
	Return t to t+5	-0.7 (0.6)	0.7 (0.6)	0.5 (0.7)	-2.2 (3.)	4.0** (1.4)	-0.6 (1.1)	-1.5 (1.)	-0.8 (1.)	2.6** (.9)	0.02	1435
	Return t to t+6	-0.4 (0.7)	0.5 (0.6)	1.1 (0.8)	-3.4 (3.2)	3.1* (1.5)	-1.5 (1.1)	-2.4* (1.1)	-2.0 (1.)	3.5** (1.)	0.02	1449
	Return t to t+7	-0.3 (0.6)	0.3 (0.6)	0.4 (0.7)	-3.3 (3.)	2.0 (1.5)	-0.9 (1.1)	-2.3* (1.)	-2.3* (1.)	3.8 (0.9)	0.02	1442
	Return t to t+8	-0.1 (0.7)	0.2 (0.6)	0.2 (0.8)	-0.1 (3.3)	2.2 (1.5)	-0.2 (1.1)	-2.0 (1.1)	-1.8 (1.1)	3.6** (1.)	0.01	1433
	Return t to t+9	-0.2 (0.7)	0.4 (0.7)	-0.6 (0.8)	-4.0 (3.5)	1.7 (1.7)	-1.7 (1.2)	-3.8** (1.2)	-3.1** (1.1)	5.2** (1.1)	0.02	1434
	Return t to t+10	0.1 (0.8)	0.8 (0.7)	-0.2 (0.9)	-4.2 (3.7)	0.3 (1.8)	-2.2 (1.3)	-4.1** (1.3)	-2.9* (1.2)	5.1** (1.1)	0.01	1441

Excess return of TSE, OSE, NSE, OTC is relative to TOPIX, Osaka 250, Nagoya 25, and JASDAQ, respectively.

**: significance at 99% level, *: significance at 95% level

Table 12: Regression Analysis of Long-term Excess Stock Returns after Repurchase Announcements

(Excess Returns, %)

(standard errors in parentheses)

		Was the purpose of the repurchase to provide shares for stock options?	Was this the firm's first repurchase announcement?	Did the firm repurchase any shares?	Year Effects					intercept	R^2	No of Obs.
					1996	1997	1998	1999	2000			
TSE	Return t to t+20	0.7	0.5	-0.4	-5.4	1.1	-3.3*	-8.2**	-2.9	6.6**	0.04	1199
		(0.9)	(0.8)	(1.1)	(4.6)	(2.2)	(1.5)	(1.5)	(1.4)	(1.3)		
	Return t to t+125	-0.6	2.8	0.3	-17.4	-10.6	-16.5**	-23.4**	-5.1	19.8**	0.06	1193
		(2.3)	(2.1)	(2.7)	(11.5)	(5.6)	(3.8)	(3.7)	(3.4)	(3.3)		
	Return t to t+250	-1.9	-3.3	3.9	-17.3	-14.8	-25.1**	-22.4**	-1.3	28.7**	0.06	1201
		(3.3)	(3.)	(4.)	(16.7)	(8.)	(5.5)	(5.3)	(5.)	(4.7)		
OSE	Return t to t+20	5.2	3.3	6.4	-12.7	-0.5	-4.2	0.3	-4.0	1.7	0.08	133
		(3.4)	(2.8)	(3.5)	(15.4)	(7.4)	(5.4)	(5.2)	(5.3)	(4.9)		
	Return t to t+125	5.4	6.1	6.4	-12.8	-17.7	-12.8	-25.4**	-12.3	12.3	0.12	139
		(6.3)	(5.1)	(5.8)	(27.7)	(13.5)	(9.2)	(9.2)	(9.3)	(8.6)		
	Return t to t+250	8.2	7.3	21.4*	-17.9	-22.3	-0.9	-31.9	-5.4	6.6	0.15	133
		(11.1)	(8.7)	(9.8)	(47.6)	(22.6)	(16.5)	(16.5)	(16.6)	(15.6)		
NSE	Return t to t+20	-5.7	-2.5	-1.0		-27.1	3.5	-3.4	-2.3	7.2	0.28	39
		(4.7)	(3.9)	(4.9)		(12.8)	(9.1)	(9.)	(8.3)	(8.6)		
	Return t to t+125	-3.6	0.9	-10.4		-32.4	-42.4*	-58.6**	-37.2	49.5**	0.31	42
		(9.2)	(7.8)	(9.5)		(22.9)	(18.2)	(17.1)	(16.5)	(15.9)		
	Return t to t+250	-10.5	2.1	-24.2		-40.4	-19.1	-63.6*	-23.2	53.9*	0.3	42
		(21.7)	(12.4)	(13.2)		(37.5)	(29.)	(27.6)	(27.)	(25.9)		
OTC	Return t to t+20	11.9	-24.8	31.1		18.6	30.0	23.4	-2.9	-1.1	0.23	44
		(15.5)	(12.9)	(17.5)		(33.)	(32.2)	(33.6)	(1.4)	(32.6)		
	Return t to t+125	56.6	-65.7	84.8		34.6	63.8	159.7	-21.6	-19.6	0.28	42
		(52.2)	(46.1)	(63.2)		(125.9)	(118.8)	(122.4)	(139.6)	(120.6)		
	Return t to t+250	98.2	11.4	48.8		5.0	215.4	77.8	-41.1	-61.9	0.27	49
		(69.1)	(60.8)	(88.5)		(171.8)	(166.1)	(170.)	(193.2)	(168.4)		
Total	Return t to t+20	1.5	0.2	1.0	-4.7	0.7	-2.2	-6.1**	-2.8	5.8**	0.02	1415
		(1.0)	(0.9)	(1.1)	(4.5)	(2.2)	(1.6)	(1.5)	(1.5)	(1.4)		
	Return t to t+125	4.1	1.9	3.9	-17.3	-12.7*	-13.4**	20.0**	-6.2	17.9**	0.03	1416
		(2.6)	(2.4)	(3.)	(12.3)	(6.1)	(4.3)	(4.2)	(4.)	(3.8)		
	Return t to t+250	4.8	-4.2	5.3	-17.6	-18.0*	-10.9	-22.9**	-3.0	26.7**	0.03	1425
		(3.9)	(3.5)	(4.5)	(18.5)	(9.)	(6.5)	(6.3)	(6.)	(5.7)		

Excess return of TSE, OSE, NSE, OTC is relative to TOPIX, Osaka 250, Nagoya 25, and JASDAQ, respectively.

**: significance at 99% level, *: significance at 95% level

Table 13: Regression Analysis of Short-term Excess Stock Returns before Repurchase Announcements

(Excess Returns, %)

(standard errors in parentheses)

		Was the purpose of the repurchase to provide shares for stock options?	Was this the firm's first repurchase announcement?	Did the firm repurchase any shares?	Year Effects					intercept	R^2	No of Obs.
					1996	1997	1998	1999	2000			
TSE	Return t-2 to t-1	0.2	0.4	-0.6	-0.7	-1.0	-1.3	-1.0	-1.3	0.7	0.003	1186
		(0.5)	(0.5)	(0.6)	(2.6)	(1.3)	(0.9)	(0.8)	(0.8)	(0.7)		
	Return t-3 to t-1	0.4	-0.2	-2.2**	-0.3	-2.6*	-2.2*	-1.4	-1.7*	1.7*	0.02	1187
		(0.5)	(0.5)	(0.6)	(2.6)	(1.2)	(0.9)	(0.8)	(0.8)	(0.7)		
	Return t-4 to t-1	1.6*	0.4	-0.6	0.0	-3.6*	-2.1*	-1.3	-1.1	0.6	0.01	1188
		(0.6)	(0.5)	(0.7)	(3.0)	(1.4)	(1.0)	(0.9)	(0.9)	(0.8)		
	Return t-5 to t-1	1.7*	0.0	-0.4	0.6	-1.3	-0.5	-0.7	0.2	-0.5	0.01	1180
		(0.7)	(0.6)	(0.8)	(3.2)	(1.6)	(1.1)	(1.0)	(1.0)	(0.9)		
	Return t-6 to t-1	0.9	0.3	-1.5	-4.1	-3.5*	-1.2	-2.0	-0.3	0.2	0.01	1185
		(0.7)	(0.6)	(0.8)	(3.5)	(1.7)	(1.2)	(1.1)	(1.1)	(1.0)		
	Return t-7 to t-1	1.5	-0.5	-1.4	-4.0	-1.6	-0.9	-3.3*	-0.2	0.6	0.02	1183
		(0.8)	(0.7)	(0.9)	(3.8)	(1.8)	(1.2)	(1.2)	(1.1)	(1.1)		
	Return t-8 to t-1	1.5	-0.2	-1.0	-0.4	-1.5	-1.1	-1.9	-0.3	-0.2	0.01	1190
		(0.8)	(0.8)	(1.0)	(4.1)	(2.0)	(1.4)	(1.3)	(1.2)	(1.2)		
	Return t-9 to t-1	2.9**	0.2	-0.1	-3.8	-4.8*	-1.7	-1.3	0.3	-0.6	0.02	1187
		(0.8)	(0.7)	(1.0)	(4.0)	(1.9)	(1.3)	(1.3)	(1.2)	(1.1)		
	Return t-10 to t-1	4.0**	-0.3	-1.3	-2.2	-5.0**	-2.9*	-3.2*	-2.0	1.3	0.03	1184
		(0.8)	(0.7)	(1.0)	(4.0)	(1.9)	(1.3)	(1.3)	(1.2)	(1.1)		
OSE	Return t-2 to t-1	2.1*	-1.1	-1.1	2.6	-1.1	1.6	1.2	0.8	-1.1	0.07	142
		(1.0)	(0.8)	(1.0)	(4.5)	(2.1)	(1.6)	(1.5)	(1.5)	(1.4)		
	Return t-3 to t-1	1.4	-1.9	-1.9	5.3	-0.7	0.2	0.2	0.4	0.3	0.05	132
		(1.4)	(1.1)	(1.3)	(6.0)	(2.9)	(2.2)	(2.2)	(2.1)	(2.0)		
	Return t-4 to t-1	0.3	-2.4	-1.7	3.0	0.6	0.9	1.6	1.5	0.5	0.05	130
		(1.6)	(1.3)	(1.6)	(7.1)	(3.4)	(2.7)	(2.7)	(2.6)	(2.5)		
	Return t-5 to t-1	1.1	-2.6*	-2.2	3.7	3.2	0.3	2.0	0.5	0.7	0.06	138
		(1.7)	(1.3)	(1.6)	(7.3)	(3.6)	(2.5)	(2.5)	(2.5)	(2.3)		
	Return t-6 to t-1	-1.1	-0.6	-3.2	5.0	1.8	-0.6	1.1	1.1	1.3	0.04	133
		(2.1)	(1.5)	(1.9)	(8.7)	(4.8)	(3.8)	(3.8)	(3.7)	(3.6)		
	Return t-7 to t-1	-0.3	-0.4	-2.6	4.6	-0.8	0.7	2.3	2.2	-0.3	0.04	138
		(1.9)	(1.5)	(1.8)	(8.5)	(3.9)	(3.1)	(3.1)	(3.0)	(2.9)		
	Return t-8 to t-1	0.2	0.3	-2.1	4.1	3.3	0.8	2.9	1.8	-1.0	0.02	133
		(2.0)	(1.6)	(1.9)	(8.9)	(4.6)	(3.6)	(3.5)	(3.5)	(3.4)		
	Return t-9 to t-1	1.1	-2.4	-2.0	5.2	1.3	0.2	1.4	1.9	0.2	0.04	131
		(2.2)	(1.8)	(2.0)	(9.7)	(5.2)	(4.2)	(4.2)	(4.1)	(4.0)		
	Return t-10 to t-1	-0.7	-1.0	-3.2	3.5	0.9	-1.1	-0.7	1.1	2.0	0.04	128
		(2.0)	(1.6)	(2.0)	(8.9)	(4.4)	(3.3)	(3.2)	(3.2)	(3.0)		
NSE	Return t-2 to t-1	-1.3	-4.2	-0.3		4.5	12.1	9.1	5.0	-3.1	0.14	35
		(6.1)	(4.3)	(4.8)		(15.3)	(10.8)	(10.2)	(10.5)	(9.7)		
	Return t-3 to t-1	-1.2	-3.8	1.3		9.3	8.0	5.1	2.3	-3.8	0.1	33
		(6.6)	(3.5)	(4.8)		(12.5)	(10.1)	(10.0)	(9.4)	(9.8)		
	Return t-4 to t-1	-6.9	2.6	2.5			8.7	11.6	6.8	-6.9	0.13	40
		(5.0)	(3.6)	(4.0)			(8.0)	(7.8)	(7.4)	(7.1)		
	Return t-5 to t-1	0.4	1.3	-0.8		0.4	-11.7	-6.5	-9.2	9.0	0.11	36
		(4.6)	(3.8)	(4.5)		(14.4)	(10.2)	(10.5)	(10.6)	(10.4)		
	Return t-6 to t-1	-2.3	-2.4	2.0		4.6	-1.0	-1.8	-6.7	7.5	0.07	33
		(5.7)	(5.4)	(6.5)		(17.1)	(11.9)	(12.4)	(12.9)	(12.4)		
	Return t-7 to t-1	-0.2	-2.0	2.5		5.3	-5.2	1.7	-5.5	3.2	0.13	38
		(5.0)	(4.0)	(4.8)		(13.5)	(8.5)	(8.5)	(8.3)	(8.2)		
	Return t-8 to t-1	8.0	0.3	-0.7		3.9	-5.2	-3.4	-7.5	2.9	0.12	39
		(5.5)	(3.6)	(4.5)		(12.3)	(7.8)	(7.7)	(7.6)	(7.5)		
	Return t-9 to t-1	1.5	-1.1	-3.7		-0.3	-11.2	-7.9	-14.0	12.2	0.15	32
		(5.8)	(4.3)	(6.5)		(16.9)	(11.8)	(12.0)	(12.1)	(11.8)		
	Return t-10 to t-1	2.1	-1.3	6.8		-24.8	-6.7	-2.0	-5.9	5.6	0.13	38
		(5.2)	(3.9)	(5.6)		(15.0)	(8.9)	(8.6)	(9.0)	(8.2)		

Excess return of TSE, OSE, NSE, OTC is relative to TOPIX, Osaka 250, Nagoya 25, and JASDAQ, respectively.

**: significance at 99% level, *: significance at 95% level

Table 13: Regression Analysis of Short-term Excess Stock Returns before Repurchase Announcements

(Excess Returns, %)

(standard errors in parentheses)

		Was the purpose of the repurchase to provide shares for stock options?	Was this the firm's first repurchase announcement?	Did the firm repurchase any shares?	Year Effects					intercept	R^2	No of Obs.
					1996	1997	1998	1999	2000			
OTC	Return t-2 to t-1	-1.3 (3.1)	0.6 (2.6)	-7.6 (3.8)		-3.7 (6.9)	-6.8 (6.6)	-5.6 (6.8)	-3.4 (7.8)	6.6 (6.7)	0.16	44
	Return t-3 to t-1	1.8 (2.4)	-4.0 (2.2)	1.5 (2.9)	-0.1 (5.9)	3.1 (3.1)	0.4 (3.4)	2.4 (3.1)		1.6 (3.3)	0.16	40
	Return t-4 to t-1	3.8 (3.4)	-5.4 (3.0)	-0.1 (3.7)	-0.3 (7.8)	3.4 (4.3)	0.5 (4.6)	7.0 (4.1)		1.8 (4.4)	0.32	35
	Return t-5 to t-1	15.6* (6.7)	-12.0* (5.4)	3.7 (7.7)		1.0 (14.6)	4.3 (13.6)	8.1 (13.9)	-9.8 (16.2)	1.6 (13.7)	0.31	40
	Return t-6 to t-1	7.7 (5.4)	-11.7* (4.5)	8.5 (6.3)		10.6 (11.4)	7.7 (11.1)	12.7 (11.2)	-2.7 (13.2)	-3.0 (11.1)	0.34	38
	Return t-7 to t-1	6.5 (4.8)	-5.9 (4.1)	4.6 (5.5)		3.6 (9.9)	7.7 (9.5)	16.4 (10.0)	-4.3 (11.4)	-4.3 (9.6)	0.43	37
	Return t-8 to t-1	9.3 (6.2)	-11.9* (5.2)	6.6 (6.9)		-0.3 (13.0)	3.1 (12.1)	4.8 (12.6)	-9.5 (14.7)	4.2 (12.4)	0.30	36
	Return t-9 to t-1	-2.3 (6.5)	-6.2 (5.1)	6.6 (7.5)		2.6 (14.1)	3.7 (13.2)	14.6 (13.5)	3.7 (15.7)	-0.3 (13.3)	0.20	41
	Return t-10 to t-1	10.5 (6.6)	-6.5 (5.1)	-7.8 (6.8)	21.4 (14.4)	0.4 (7.2)	9.3 (9.3)	14.9 (7.5)		-4.9 (8.6)	0.28	35
Total	Return t-2 to t-1	0.2 (0.5)	0.2 (0.4)	-0.9 (0.6)	-0.4 (2.2)	-0.8 (1.1)	-0.9 (0.8)	-0.8 (0.8)	-1.1 (0.7)	0.8 (0.7)	0.003	1407
	Return t-3 to t-1	0.5 (0.5)	-0.5 (0.4)	-2.0** (0.6)	0.1 (2.2)	-1.9 (1.1)	-1.8* (0.8)	-1.2 (0.8)	-1.5* (0.7)	1.6* (0.7)	0.02	1392
	Return t-4 to t-1	1.5** (0.5)	0.0 (0.5)	-0.5 (0.6)	-0.4 (2.5)	-2.7* (1.3)	-1.5 (0.9)	-0.5 (0.9)	-0.7 (0.8)	0.5 (0.8)	0.01	1393
	Return t-5 to t-1	2.0** (0.6)	-0.4 (0.5)	-0.3 (0.7)	-0.2 (2.8)	-0.6 (1.4)	-0.4 (1.0)	0.1 (1.0)	0.2 (0.9)	-0.4 (0.9)	0.01	1394
	Return t-6 to t-1	0.9 (0.7)	0.1 (0.6)	-1.2 (0.8)	-3.6 (3.1)	-2.2 (1.5)	-0.8 (1.1)	-1.0 (1.1)	-0.2 (1.0)	0.3 (1.0)	0.01	1389
	Return t-7 to t-1	1.4 (0.7)	-0.6 (0.6)	-1.1 (0.8)	-3.4 (3.2)	-1.6 (1.6)	-0.7 (1.1)	-1.9 (1.1)	-0.1 (1.0)	0.5 (1.0)	0.01	1369
	Return t-8 to t-1	1.7* (0.8)	-0.3 (0.7)	-0.8 (0.9)	0.1 (3.5)	-0.9 (1.7)	-0.8 (1.2)	-0.9 (1.2)	-0.3 (1.2)	-0.3 (1.1)	0.01	1398
	Return t-9 to t-1	2.5** (0.7)	-0.2 (0.7)	-0.2 (0.9)	-2.4 (3.4)	-4.0* (1.7)	-1.3 (1.2)	-0.5 (1.2)	0.3 (1.1)	-0.4 (1.1)	0.02	1397
	Return t-10 to t-1	3.6** (0.7)	-0.6 (0.7)	-1.3 (0.8)	-1.0 (3.4)	-4.9* (1.7)	-2.5* (1.2)	-2.5* (1.2)	-1.8 (1.1)	1.4 (1.0)	0.03	1385

Excess return of TSE, OSE, NSE, OTC is relative to TOPIX, Osaka 250, Nagoya 25, and JASDAQ, respectively.

**: significance at 99% level, *: significance at 95% level

Table 13: Regression Analysis of Long-term Excess Stock Returns before Repurchase Announcements

(Excess Returns, %)

(standard errors in parentheses)

		Was the purpose of the repurchase to provide shares for stock options?	Was this the firm's first repurchase announcement?	Did the firm repurchase any shares?	Year Effects					intercept	R^2	No of Obs.
					1996	1997	1998	1999	2000			
TSE	Return t-20 to t-1	5.5**	-0.8	1.1	0.4	-1.9	-3.4*	-1.4	-1.0	0.2	0.03	1198
		(1.0)	(0.9)	(1.2)	(5.0)	(2.4)	(1.6)	(1.6)	(1.5)	(1.4)		
	Return t-125 to 5-1	13.1**	-0.7	3.9	9.8	-6.7	-3.6	-8.5	-11.9*	0.9	0.02	1170
		(3.2)	(2.9)	(3.7)	(15.6)	(7.6)	(5.2)	(5.1)	(4.7)	(4.5)		
	Return t-250 to t-1	23.1**	-3.0	10.4	12.9	-19.6	-23.7**	-23.5**	-40.2**	10.3	0.06	1162
		(4.6)	(4.2)	(5.5)	(23.9)	(11.0)	(7.6)	(7.4)	(6.9)	(6.5)		
OSE	Return t-20 to t-1	3.8	-1.5	-4.7	12.0	0.4	-1.2	2.0	-2.5	1.9	0.05	128
		(3.2)	(2.5)	(3.3)	(14.1)	(6.8)	(5.4)	(5.4)	(5.4)	(5.1)		
	Return t-125 to 5-1	-5.5	-2.1	2.2	-0.6	-9.3	-3.2	-3.6	-15.4	2.2	0.08	130
		(5.7)	(4.3)	(5.0)	(23.8)	(11.0)	(8.5)	(8.3)	(8.2)	(7.6)		
	Return t-250 to t-1	10.0	-5.2	2.3	60.6*	-12.5	-11.9	-0.8	-35.1**	0.3	0.33	126
		(6.8)	(5.3)	(6.3)	(29.1)	(13.7)	(11.2)	(11.3)	(11.)	(10.7)		
NSE	Return t-20 to t-1	7.0	-1.8	-0.8		-4.3	-3.5	-1.0	-5.9	3.5	0.10	41
		(5.2)	(3.9)	(4.7)		(13.0)	(7.2)	(7.0)	(6.7)	(6.5)		
	Return t-125 to 5-1	13.4	-25.3*	-10.5		17.3	8.2	-12.2	-10.5	15.8	0.25	37
		(12.8)	(9.)	(10.3)		(27.1)	(15.0)	(14.9)	(14.5)	(13.5)		
	Return t-250 to t-1	1.7	-18.0	3.2			-28.3	-34.3	-53.6*	28.1	0.23	33
		(16.3)	(12.1)	(14.6)			(24.4)	(24.8)	(23.5)	(23.6)		
OTC	Return t-20 to t-1	26.9	-13.1	4.3	27.2	11.0	14.6	29.0*		-12.8	0.43	40
		(8.9)*	(7.0)	(10.1)	(21.2)	(11.2)	(12.1)	(11.2)		(11.9)		
	Return t-125 to 5-1	6.6	-22.5	-15.4	63.5	2.9	42.2*	95.9**		-21.6	0.67	38
		(14.3)	(11.4)	(17.7)	(34.4)	(17.9)	(19.4)	(18.4)		(18.2)		
	Return t-250 to t-1	8.3	-52.2**	-8.4		-43.0	-42.3	14.1	39.6	50.4	0.65	39
		(16.5)	(14.7)	(19.4)		(44.4)	(43.1)	(43.9)	(48.3)	(43.6)		
Total	Return t-20 to t-1	6.2**	-1.0	0.9	1.9	-2.3	-3.0	-0.4	-1.3	0.2	0.04	1407
		(0.9)	(0.8)	(1.1)	(4.4)	(2.2)	(1.5)	(1.5)	(1.4)	(1.3)		
	Return t-125 to 5-1	11.0**	-2.0	3.0	8.1	-11.0	-2.6	-6.1	-12.4**	1.7	0.02	1375
		(2.9)	(2.5)	(3.2)	(13.1)	(6.5)	(4.6)	(4.5)	(4.3)	(4.0)		
	Return t-250 to t-1	23.0**	-4.6	8.8	13.4	-25.9**	23.2**	-21.2**	-39.8**	10.6	0.06	1360
		(4.1)	(3.7)	(4.7)	(20.4)	(9.3)	(6.7)	(6.6)	(6.2)	(5.9)		

Excess return of TSE, OSE, NSE, OTC is relative to TOPIX, Osaka 250, Nagoya 25, and JASDAQ, respectively.

**: significance at 99%, *: significance at 95%

Table 14: Regression Analysis of Short-term Excess Stock Returns after Repurchase Announcements

(standard errors in parentheses)

		Fraction of Shares to be Repurchased	R^2	The number of observations
TSE	Return t to t+1	0.01 (.10)	0.000	1188
	Return t to t+2	0.2** (.08)	0.006	1197
	Return t to t+3	0.3** (.09)	0.01	1199
	Return t to t+4	0.12 (.10)	0.001	1189
	Return t to t+5	0.14 (.07)	0.001	1185
	Return t to t+6	0.07 (.10)	0.001	1192
	Return t to t+7	0.16 (.10)	0.002	1190
	Return t to t+8	0.05 (.10)	0.0002	1196
	Return t to t+9	0.08 (.11)	0.0004	1197
	Return t to t+10	0.03 (.12)	0.0001	1200
OSE	Return t to t+1	0.4* (.18)	0.03	128
	Return t to t+2	0.16 (.27)	0.003	117
	Return t to t+3	0.21 (.30)	0.004	118
	Return t to t+4	(.36) (.34)	0.01	118
	Return t to t+5	0.12 (.33)	0.001	120
	Return t to t+6	0.29 (.34)	0.006	122
	Return t to t+7	0.24 (.31)	0.005	119
	Return t to t+8	0.10 (.37)	0.0006	113
	Return t to t+9	0.18 (.40)	0.002	112
	Return t to t+10	0.10 (.44)	0.001	112
NSE	Return t to t+1	0.80 (.60)	0.041	43
	Return t to t+2	-0.12 (.42)	0.002	44
	Return t to t+3	-0.29 (.60)	0.005	44
	Return t to t+4	-0.03 (.69)	0.00	46
	Return t to t+5	0.37 (.59)	0.01	45
	Return t to t+6	0.62 (.83)	0.01	50
	Return t to t+7	0.57 (.73)	0.01	45
	Return t to t+8	1.64 (.90)	0.08	39
	Return t to t+9	1.01 (.74)	0.05	38
	Return t to t+10	0.70 (.92)	0.015	39
OTC	Return t to t+1	0.08 (.31)	0.001	47
	Return t to t+2	0.04 (.58)	0.0001	47
	Return t to t+3	0.16 (.61)	0.002	47
	Return t to t+4	0.29 (.67)	0.004	43
	Return t to t+5	0.10 (.91)	0.003	43
	Return t to t+6	-(.51) (1.02)	0.006	45
	Return t to t+7	-(.72) (.92)	0.014	46
	Return t to t+8	-(.38) (1.26)	0.002	43
	Return t to t+9	-(.63) (1.10)	0.007	45
	Return t to t+10	-(.67) (1.10)	0.008	47
Total	Return t to t+1	0.05 (.07)	0.004	1406
	Return t to t+2	0.21** (.08)	0.005	1405
	Return t to t+3	0.33** (.08)	0.01	1408
	Return t to t+4	0.16 (.09)	0.002	1396
	Return t to t+5	0.23 (.08)	0.002	1393
	Return t to t+6	0.10 (.10)	0.001	1409
	Return t to t+7	0.16 (.09)	0.002	1400
	Return t to t+8	0.06 (.10)	0.001	1391
	Return t to t+9	0.09 (.11)	0.001	1392
	Return t to t+10	0.03 (.12)	0.000	1398

Excess return of TSE, OSE, NSE, OTC is relative to TOPIX, Osaka 250, Nagoya 25, and JASDAQ, respectively.
**: significance at 99% level, *: significance at 95% level

Table 14: Regression Analysis of Short-term Excess Stock Returns after Repurchase Announcements

(standard errors in parentheses)

		Fraction of Shares to be Repurchased	R^2	The number of observations
TSE	Return t to t+20	0.04 (.1)	0.001	1189
	Return t to t+125	-0.4 (.3)	0.001	1181
	Return t to t+250	0.5 (.5)	0.0008	1188
OSE	Return t to t+20	0.5 (.5)	0.008	104
	Return t to t+125	-0.4 (1.)	0.008	110
	Return t to t+250	-0.4 (1.6)	0.001	106
NSE	Return t to t+20	-0.01 (1.1)	0.00	37
	Return t to t+125	-1.1 (2.5)	0.005	39
	Return t to t+250	-3.2 (3.4)	0.02	41
OTC	Return t to t+20	-0.5 (2.2)	0.001	44
	Return t to t+125	-1.1 (8.7)	0.001	42
	Return t to t+250	-3.8 (10.)	0.003	49
Total	Return t to t+20	0.1 (.1)	0.001	1374
	Return t to t+125	-0.4 (.4)	0.001	1372
	Return t to t+250	0.3 (.6)	0.0002	1384

Excess return of TSE, OSE, NSE, OTC is relative to TOPIX, Osaka 250, Nagoya 25, and JASDAQ, respectively.
**: significance at 99% level, *: significance at 95% level

Table 15: Regression Analysis of the Time to Complete a Repurchase Program Upon Post-Announcements Excess Returns from 1995 to 4/2001

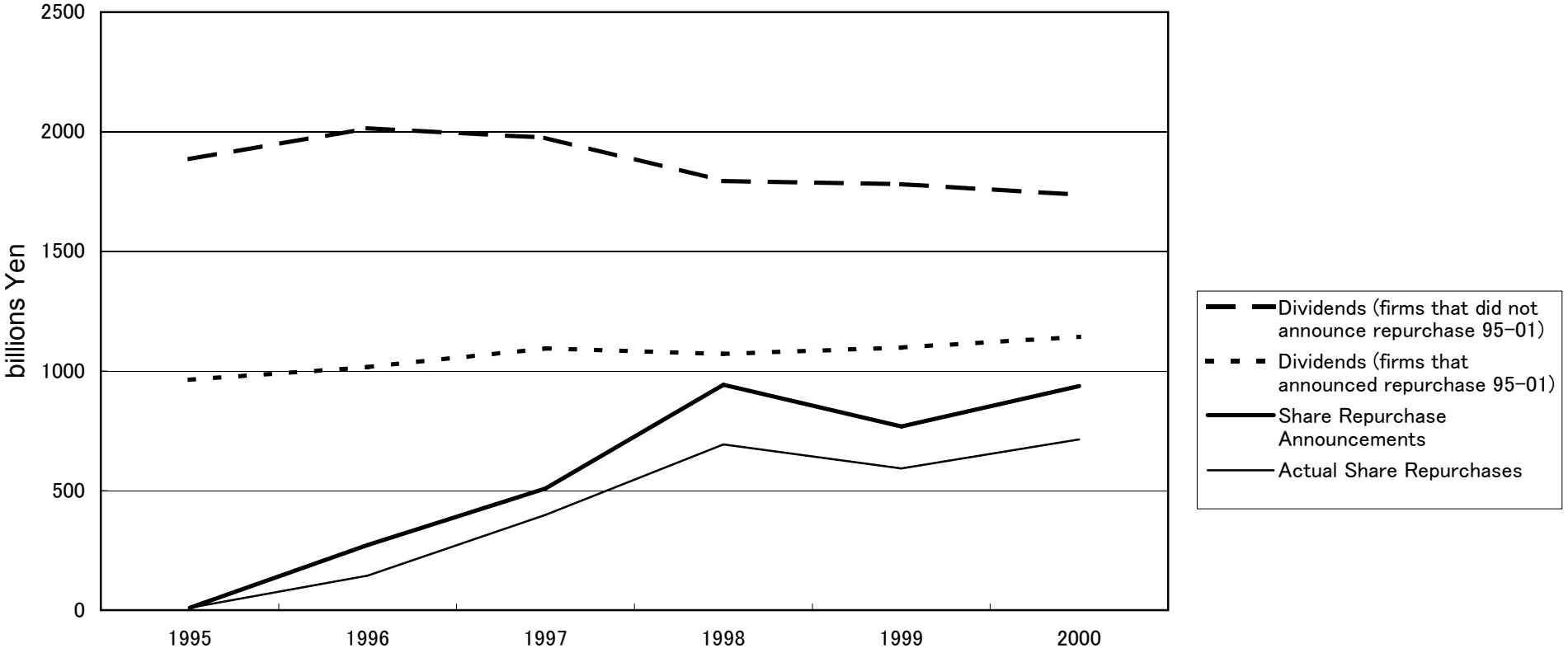
(time to completion as a fraction of a year, conditional on repurchasing some shares)

(standard errors in parentheses)

	Return t to t+5	Return t+6 to t+20	Return t+21 to t+125	Return t+126 to t+250	Year Effects					Intercept	R^2	No. of Obs.
					1996	1997	1998	1999	2000			
TSE	21.8 (13.1)	-2.6 (10.8)	-0.2 (4.2)	-1.6 (4.2)	2100.0 (1679.6)	4879.6** (756.7)	4559.834** (572.3)	3668.8** (556.1)	1623.5** (529.4)	47.0 (494.3)	0.117	939
OSE	-41.2 (66.4)	-44.7 (49.3)	-14.9 (23.1)	-46.5* (18.6)		1238.7 (3360.)	5490.0* (2703.6)	1551.8 (2772.7)	1453.5 -(2716.3)	309.3 (2557.3)	0.197	58
NSE	-95.9 (.)	843.7 (.)	-418.6 (.)	-37.6 (.)				5055.4 (.)		5224.0 (.)	1.000	6
OTC	83.5 (115.6)	36.4 (63.2)	28.2 (31.4)	9.1 (29.8)			-1185.1 (3641.6)	-3534.8 (5376.3)	-3578.1 (3410.3)	4193.3 (2591.1)	0.058	20
Total	24.2 (12.7)	-3.0 (10.2)	1.5 (4.)	-0.6 (3.9)	2108.1 (1678.1)	4554.3** (720.3)	4661.9** (554.2)	3593.2** (543.6)	1563.8** (520.7)	20.6 (486.3)	0.119	1023

Regression is based on repurchase announcements from 1995 to 3/2000.
**: significance at 99% level, *: significance at 95% level

Figure 1:
Dividends and Share Repurchases for Japanese Firms



736 firms announced a share repurchase program over the period 1995 to April 2001. Firms report the actual number of shares repurchased for a given program when it is completed. We multiply the ratio of (actual number of shares repurchased / number of shares in announcement) by the total value of shares to be repurchased listed in the announcement to obtain an estimate for the value of shares actually repurchased.

Figure 2: Stock Returns Before and After
Share Repurchase Announcements for Japanese Firms