

Does Prior Record Matter in the Wealth Effect of Open-Market Share Repurchase Announcement?

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Abstract

This study investigates if prior record of share repurchases matters in the market reaction to the subsequent repurchase announcements. Specifically, we study prior record on actual buybacks and post-announcement stock performance. We find that upon the announcements of share repurchase, stock markets respond more positively to those made by firms that have greater actual repurchases following their previous repurchase plan announcement. Furthermore, the evidence also suggest that firms that delivered better stock performance after prior repurchase announcement experience a stronger market reaction. In addition, financial analysts also show a more favorable revision in both their short-term and long-term earnings forecasts for firms that have better record. The results hold even after controlling other variables that are found important in influencing the market reactions to repurchase announcements.

Keywords: Share Repurchase, Actual Buybacks, Stock Performance

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I. Introduction

Open-market share repurchases have been playing an important role in corporate payout policy. For instance, in 1998, U.S. companies distributed about 45.41% of their earnings through share repurchase (Grullon and Michaely, 2002). In recent years, it has become common for a firm to conduct open market repurchase on a repeated and regular basis (Jagannathan and Stephens, 2003). Prior literature has shown that share repurchases convey positive information on firms' future perspectives, and repurchasing firms experience strong increases surrounding the announcement dates (e.g., Vermaelen, 1981; Comment and Jarrel, 1991; Stephens and Weisbach, 1998). Various reasons have been attributed to the wealth increase, including the signaling of undervaluation (Ofer and Thakeor, 1987; Comment and Jarrel, 1991; Stephens and Weisbach, 1998; Ikenberry, Lakonishok, and Vermaelen, 2000), redistribution of excess cash flow (Denis, Denis and Sarin, 1994), capital structure changes (Opler and Titman, 1996), managerial compensation (Jolls, 1996; Fenn and Liang, 1997), and takeover attempts deterrence (Bagwell, 1991; Hodrick, 1996). Given the recurring nature of share repurchase, an interesting question is how investors respond when the post-announcement behaviors of repurchasing firms fall short of the market's expectation. Will investors take prior experience of share buybacks into consideration in their responses to the subsequent announcements of share repurchase?

This study examines prior experience of share buybacks in actual purchases and post-announcement stock performance. The amount of actual repurchases may convey important information on the managerial motives of share repurchase. For open market share repurchase, announcing firms are not committed to fully complete the repurchase program. The media reports that corporations on average have followed

through on only 20% of their announced buyback programs.⁴ Furthermore, Stephens and Weisbach (1998) find a substantial number of repurchase firms acquire no shares at all in the three years following the announcement of repurchase program. The evidence of incomplete actual repurchases is surprising because without a substantial amount of actual buybacks, it is difficult to achieve the goals of redistribution of excess cash flow, capital structure changes, managerial compensation and takeover attempts deterrence. The failure of complete buyback suggests that share repurchase announcements may be motivated by an attempt to boost share price without intention to actually complete share buybacks. The parishioners have long been speculating on this motive of share repurchase.⁵ Bens, Nagar, Skinner and Wong (2003) and Hribar, Jenkins and Johnson (2004) argue that share repurchases may be motivated by the attempt to increase earnings-per-shares by reducing total shares outstanding, which may help stock performance.

When a share repurchase is motivated by boosting share prices without the intention of actual completion, the amount of actual repurchases can help sort managers into those that signal truthfully and those that signal falsely. If investors are as rational as suggested by the traditional finance, they should be able to learn the motivation of share repurchase from prior experience of similar announcements. Managers who develop reputation on actual repurchase are likely to be believed the next time they make repurchase announcements, while managers who develop reputation for falsely signals may receive a significant discounted response.

In addition to actual repurchases, investors may consider prior experience of stock performance in their value assessment of the subsequent repurchase plan. Prior

⁴ See *Fortune*, Sep.4, 1995 Vol.132, Issue 5; p133

⁵ For example, the *Wall Street Journal* (Mar.7, 1995) reports that “When it comes to stock-buyback, public traded companies show a lot of bark than bite. It’s oh-so-easy for a company to announce a buyback program. And it’s gratifying, no doubt, for a company to watch its share price jump as a result of the announcement. But the open secret on Wall Street is that few companies actually buy anywhere near the amount of stock that they indicate they might.”

literature has shown that undervaluation is the most cited reason for share repurchase (Ofer and Thakeor, 1987; Comment and Jarrel, 1991; Stephens and Weisbach, 1998; Ikenberry, Lakonishok, and Vermaelen, 2000). Chan, Ikenberry and Lee (2004) show that repurchase announcing firms experience an average buy-and-hold yearly return of 26.2% following the announcement date. Given the evidence, when the stock performance after repurchase announcements does not meet market expectation, investors may interpret the disappointing evidence as either managers intentionally send incorrect signals, or they are optimistically biased toward the intrinsic equity value. Consequently, investors may use this information to interpret the signals of the current share repurchase announcements, and become cautious in their responses. To the extent that managers' goals do not change, the record of prior post-announcement stock performance should serve as a useful indicator of the likely consequences of the current share repurchase announcements.

In this paper, we address the question that whether prior experience matters in the value assessment of share repurchase. Specifically, we investigate if the experience in actual share purchases and post-announcement stock performance has important influences on the subsequent announcement effect of share repurchase. We expect the market should have less favorable responses to share repurchase announcements made by firms without poor record of actual repurchases, and stronger reactions to those made by firms that buy back their shares as planned. Similarly, we expect greater announcement effects of share repurchase by firms that delivered better post-announcement stock performance in prior share buybacks. To the best of our knowledge, these hypotheses have never been tested before in the literature.

A sample of recurring share repurchase announcements is collected during 1986-1999 to test this hypothesis. Consistent with prior studies, share repurchase announcements are associated with significantly positive abnormal returns. When we investigate the effect of actual repurchase, the results show that firms with a greater

amount of actual share have a significantly stronger market reaction in the subsequent announcement of share repurchase. The results also indicate markets reward those firms that delivered better stock performance in the prior share repurchases. This conclusion holds even after controlling other important variables in explaining the market reactions to share repurchase announcements.

Additionally, we are also interested in how professionals respond to the recurring events of share repurchase. Do financial analysts distinguish repurchasing firms with good record from those without? Accordingly, we investigate the analysts' earning forecast revision surrounding the announcements of share repurchase. The results show that the record of actual repurchase and post-announcement stock performance are important consideration for financial analysts in their estimate of earnings change. We find both the short-run and long-term earning forecast revision of financial analysts surrounding share repurchase announcements are positively related with the actual amount of share buyback, as well as the post-announcement stock performance of the previous repurchase announcements. The overall evidence provides a strong support for the hypothesis that prior experience matters in the value assessment of the subsequent announcements of share repurchase. Our evidence also suggest that it is difficult for managers to use repurchase announcements merely for boosting share prices, as investors observe and learn from firm's past behavior and accordingly adjust their valuation over time.

The rest of the paper is organized as follows. Section II discusses the data and methodology. Section III presents the empirical results. The conclusion is given in section IV.

II. Data and methodology

Sample selection

Our initial sample of share repurchase is obtained from Securities Data

Corporation (SDC) from 1986 to 1999. To be included in the final sample, repurchasing firms must satisfy the following criteria.

(1) Since this study examines a sequence of share repurchase announcements, we include only those firms that made at least two repurchase announcements during the sample period.

(2) The sample firm must have return data available on the Center for Research in Security Prices (CRSP) database.

(3) The sample firm must have financial information available from Compustat database.

Following these selection criteria, we collect a sample of 3,154 open-market share repurchase announcements made by 1,009 firms during the sample period.

Measuring Abnormal Stock Return

We employ standard event-study methods to examine stock price responses to announcements of share repurchase. To measure the abnormal stock returns to announcements of share repurchases, we follow Brown and Warner (1985) by using the market model to obtain estimates of expected returns. The abnormal return is calculated as the residual from the actual return and an expected return generated by the market model, with parameters estimated over a period from 210 to 60 days before the initial announcements. The value weighted NYSE\AMEX\Nasdaq Index is used for measuring market returns. Daily stock return information is from the CRSP returns files for the US firms. A minimum of 50 daily returns in the estimation period is required for inclusion in the sample. Day 0 is the announcement date of share repurchase that first appears on major newspapers.

Measuring Reacquired Shares

Since the repurchasing firms are not required to publicly disclose the initiation of

open-market repurchase (Bartov, 1991), information of the actual share repurchase can neither be observed at the time of transaction nor directly measured afterwards (Stephens and Weisbach, 1998). To estimate the amount of actual repurchase, previous studies use data of changes in outstanding common shares, dollars spent on repurchasing shares, and the value increase of treasury stocks (Stephens and Weisbach, 1998; Lie, 2005; Chan et al., 2004). In this study, we test our hypothesis by several different measures of actual repurchase. Specifically, we estimate the amount of actual repurchases in the year following repurchase announcements by the following measures: (1) monthly decreases in the firm's shares outstanding reported in CRSP (2) quarterly decreases in the firm's shares outstanding from Compustat, (3) dollars spent on reacquiring securities divided by the minimum share price in a given quarter, and (4) dollar spent on reacquiring securities divided by the average of the three monthly closing prices for the quarter, (5) quarterly increases in the dollar value of the firm's treasury stock divided by the mean of the three monthly closing prices for the quarter, and (6) quarterly increases in the dollar value of the firm's treasury stock divided by the minimum price for the security in a given quarter.⁶

We scale each measure of actual repurchases by the total number of shares outstanding at the time of announcement or the number of shares announced in the repurchase program. Following Chan et al. (2004), we exclude the influence of preferred stock from Compustat item [71] to adjust dollars spent reacquiring firm securities. The actual amount of repurchase is estimated over the first year subsequent to share repurchase announcements.

Sample characteristics

Table 1 reports the distribution of shares repurchase announcements by year and

⁶ Each of these measures, as well as the differences in their construction and potential biases, is discussed in Stephens and Weisbach (1998).

frequency. The results in Panel A show that firms made more repurchase announcements in recent years of the sample period. Panel B suggests that over 50% of the sample firms made two repurchase announcements in the sample period, followed by firms with three announcements (21.90%). The largest number of share repurchase made by any single firm is 14. The mean (median) interval between repurchase announcements is 639 days (368 days).

[Insert table 1 here]

Table 2 presents the abnormal returns surrounding shares repurchase announcements dates. Since we attempt to explore the effect of actual repurchases on the market reactions to repurchase announcements, the first announcement of every sample firms is not included (1,009 observations). To avoid any confounding effect in the case that the consecutive repurchase announcements are too close, we delete the announcements when the consecutive repurchase announcements are made less than 1 year (1,055 observations). The final sample is consisted of 1,090 announcements of share repurchase.

The results in table 2 show that on the announcement day, announcing firms experience an average significant and positive abnormal return of 1.22%. In addition, the median abnormal return on the announcement day is also statistically significant, and 64.22% of sample firms experience positive stock market reaction, indicating that the results are not driven by outlier observations. The strong market reactions continue in day 1 and day 2. Therefore, to capture the market reactions, we use three-day cumulative abnormal returns, CAR (0, 2), as the primary variable of marker response in our analysis. Table 2 reports that the mean CAR (0, 2) is 1.92%, statistically significant at the 1% level. The results are consistent with the evidence reported in prior studies (Asquith and Mullins, 1986; Ikenberry, Lakonishok, and Vermaelen, 1995; D'Mello and Shroff, 2000; Chan et al., 2004).

[Insert table 2 here]

III. Empirical Results

Panel A of table 3 compares the announcement-period abnormal returns based on the amount of actual repurchases measured by the decreases of share outstanding reported in CRSP. The subgroup of large (small) include firms with actual repurchases on the top (bottom) 33% of the sample firms. The results show that the announcement-period abnormal returns are all significantly positive for the three different subgroups. When we compare the magnitude of market reactions across subgroups, we find that the market reactions to repurchase announcements become weaker as the amount of prior actual repurchases declines. The mean (median) abnormal returns is 2.55% (1.76%) for firms with large actual repurchases, and is only 1.44% (1.17%) for those with small actual repurchases. The difference in the mean abnormal returns is significant at the 1% level. The findings support the argument that whether repurchasing firms actually buy back shares is one important consideration of investors in their value assessment on the following repurchase announcements.

[Insert table 3 here]

In Panel B of table 3, we partition the whole sample on the basis of market-adjusted buy-and-hold return (Adj-Market BHR), measured by sample's 6-month BHR minus value-weighted market index's 6-month BHR subsequent the last repurchase plan announcement. The evidence reveals that the announcement-period abnormal returns are all significantly positive for the three different subgroups. When we compare the magnitude of market reactions across subgroups, we find that the market reactions to repurchase announcements are positively related to prior market-adjusted BHR. The mean (median) abnormal returns is only 1.60% (1.27%) for firms with low market-adjusted BHR, and is 2.38% (1.82%) for those with high market-adjusted BHR. The difference is statistically significant at the 5% level. The results suggest that document that prior stock performance is an

important factor of investors in their value assessment on the following repurchases announcements. The evidence supports that markets indeed learn from prior evidence of share repurchase and respond more favorably to repurchase announcements made by firms with better records.

Table 4 presents the effect of actual repurchases and prior stock performance on the market reaction to the subsequent announcements of share repurchase in a regression framework. Model 1 to model 6 shows the empirical results under different measures of actual repurchase. We also include the sequence variable that equals the number of share repurchase announcements made prior to and including the focal announcements. Since prior literature has suggested that some other variables are important in explaining the announcement effect of share repurchase, we try to control their potential effects in the regression analysis (Lehn and Paulsen, 1989; Chan et al., 2004; Zhang, 2005). The prior one year abnormal return represents the one year buy-and-hold returns compounded from 252 days before (or the listing date) up to three days before the announcement for repurchasing firms minus the compounded return of the matching firms over the same period. FCF is the industry median-adjusted free cash flows divided by assets. LEV is calculated by industry median-adjusted ratio of the total debt to total assets at the previous fiscal year-end. Shares announced/out. is the percentage of announced repurchase shares relative to total outstanding shares at month-end prior to the announcement. LSIZE is the natural logarithm of market value of equity and LBM is its logarithm value of the book-to-market ratio, both measured at year-end prior to the announcement.

[Insert table 4 here]

All models in table 4 show consistent evidence that the amount of prior actual repurchases is significantly positively related to the announcement-period abnormal returns of share repurchase. In addition, the previous market-adjusted BHR are significantly positively associated with the announcement-period abnormal returns of

share repurchase.⁷ The evidence suggests that investors consider previous repurchase experience in their valuation of share repurchase announcements. The findings of actual repurchases and market-adjusted BHR are consistent with those in table 3 and 4. The results also show that the sequence of announcements has a significantly negative influence on the announcement-period abnormal returns. The announcements made by more frequent announcers are more expected by investors, and thus generate weaker market responses. As for the control variables, we find that prior one year AR, the percentage of announced repurchase shares to total outstanding shares and firms' size have significant explaining power. These results are similar to the findings of Chan et al. (2004).

To test the robustness of the results, we also run similar regressions by scaling each measure of actual repurchases by the number of shares to be repurchased in the announced program. The results for each measure of actual repurchases are very similar to those in table 4. Additionally, we test the sensitivity of our results by using several different windows in measuring the cumulated actual amount of share repurchase, ranging from 6 months, 18 months and 24 months. We also examine the sensitivity of our results by using several different intervals in measuring the market-adjusted BHR or raw BHR, ranging from 9-month and 12-month. Our conclusion remains unchanged. Furthermore, we test the sensitivity of the conclusion by different event windows of cumulated abnormal returns, including CAR (0,1), CAR (-1, 2) and CAR (2, 2). The results under different windows are essentially the same as those reported above.

Analyst' Earnings Forecast Revisions

Previous studies indicate that financial analyst' earnings forecasts consist of

⁷ We have also used raw buy-and-hold return (BHR) in our regression analyses and the results are qualitatively similar to those reported in Table 4.

valuable information of investors' expectation on the prospects of future cash flow (Givoly and Lakonishok, 1979; Fried and Givoly, 1982). Brous and Kini (1993) further point out that examining analysts' earnings forecasts will improve our understanding of stock market reactions. To provide further evidence for this study, we investigate whether financial analysts also consider the record of actual repurchases when they revise the short-term earnings forecast and long-term growth rate of earnings surrounding the repurchase announcements.

Following Brous (1992) and Brous and Kini (1993), we estimate the monthly revisions of analysts' earnings forecasts for firm i during month t as follows:

$$FR_{i,t} = (F_{i,t} - F_{i,t-1}) / P^*$$

where $F_{i,t}$ is the median of analysts' earnings forecasts for firm i at month t , $F_{i,t-1}$ is the median of analysts' earnings forecasts for firm i at month $t-1$, and P^* is the stock price at the beginning of the year in which the open-market share repurchase program is announced. The data of analysts' forecast revision is from I/B/E/S database.

To estimate the expected earnings forecast revision, we follow the expectation model in Brous (1992) and Brous and Kini (1993).⁸ The expected forecast revision for firm i in month t can be estimated as:

$$E[FR_{i,t}] = k_i + \frac{1}{5} \sum_{s=1}^4 \varepsilon_{i,t-s}$$

The forecastable component (k_i) is the average forecast revision for all months available on I/B/E/S database, except for those from six months before until six months after the share repurchase announcements. The unforecastable component ($\varepsilon_{i,t-s}$) is calculated by the difference between the k_i and the actual monthly forecast revision for firm i in month $t-s$. The abnormal (or unexpected) forecast revision for firm i in month t ($AFR_{i,t}$) can be estimated as the difference between the forecast

⁸ This model takes care of the optimism bias in I/B/E/S as argued in O'Brien (1988), and the serial correlation problem of analyst' forecasts in Brous (1992).

revision($FR_{i,t}$) and the expected forecast revision ($E(FR_{i,t})$):

$$AFR_{i,t} = FR_{i,t} - E(FR_{i,t})$$

Table 5 presents the results of cross-sectional regression on analysts' forecast revision on the current-year earnings per share. The dependent variable is the abnormal forecast revisions (AFR) during the six-month (0, 5) interval. Six different measures of actual repurchases and stock performance are tested. The results in table 5 suggest that each measure of is significantly and positively related with abnormal analysts' current-year earnings forecast revision, suggesting that financial analysts view actual repurchases and stock performance as important messages in their estimation of repurchasing firms' future earnings forecasts. Different from the results in table 4, the sequence variable does not have strong explaining power on analyst forecasts. We also run similar regression analysis when the dependent variable is forecast revisions (FR). We do not report the results, but the results are consistent with those in Table 5.

[Insert table 5 here]

Furthermore, we also calculate the revisions of long-term growth rate of earnings. Similar to Yoon and Starks (1995), we measure forecast revisions from the previous months as the proportional change in the analysts' forecasts of long-term earnings growth. The abnormal forecast revision of analysts' forecasts of long-term earnings growth is computes as the difference in the forecast revision for each month surrounding announced date of share repurchase and the average forecast revision estimated over the estimation period (months -24 to -7 and months 7 to 24). Table 6 shows the results of cross-sectional regression on analysts' forecasts of long-term earnings growth. The dependent variable is the abnormal forecast revision of analysts' long-term growth of future earnings rate during the six-month (0, 5) interval.

The results in table 6 show that each measure of actual repurchases and stock

performance have significantly positive impacts on the abnormal analysts' forecast revision of the long-term earnings growth rate. These results are consistent with those in Table 5.

[Insert table 6 here]

IV. Conclusion

Most of prior studies focus on “good” motives of share repurchase intended for enhancing shareholders wealth. But repurchase-announcing firms are not obliged to complete share buyback plan in an open market share repurchase. Given the evidence of positive that repurchase announcements are associated with positive share price changes, and firms actually buy backs only a small proportion of shares, we wonder if investors take prior record of share repurchase into account in responding to the new repurchase announcement. We investigate the influence of prior record by investigating the experience of actual buybacks and stock performance following prior announcements of share repurchase. We find that upon the announcements of share repurchase, stock markets respond more positively to those made by firms that have greater actual repurchases following their previous repurchase plan announcement. Furthermore, the evidence also suggest that firms that delivered better stock performance after prior repurchase announcement experience a stronger market reaction. In addition, financial analysts also show a more favorable revision in their short-term and long-term earnings forecasts for firms that have better record in their prior share repurchase. The results hold even after controlling other variables that are found important in influencing the market reactions to repurchase announcements. Our results suggest that the experience in prior share repurchases play an important role in the value assessment of repurchase announcements. The findings in this study also imply that share repurchase is not an effective and costless tool for boosting share prices, as investors learn from past experience about the

managerial motives of share repurchase announcements.

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Table 1
Sample Distribution by Year and Frequency

Frequency of share repurchase for a sample of 3,154 announcements by 1009 firms that announced at least two announcements during 1986-1999.

<i>Panel A: Sample Distribution by year</i>					
Year	Number	%	Year	Number	%
1986	34	1.08	1993	125	3.96
1987	33	1.05	1994	303	9.61
1988	59	1.87	1995	361	11.45
1989	120	3.80	1996	484	15.35
1990	188	5.96	1997	373	11.83
1991	76	2.41	1998	492	15.60
1992	130	4.12	1999	376	11.92
Total				3,154	100.00

<i>Panel B: Sample Distribution by frequency</i>		
Number of ann.	Number of firms	Percent of firms
2	518	51.34
3	221	21.90
4	116	11.50
5	58	5.75
6	43	4.26
7	20	1.98
8	13	1.29
9	10	0.99
10	6	0.59
11	2	0.20
13	1	0.10
14	1	0.10
Total	1,009	100.00

Table 2**Abnormal Returns Associated with shares repurchase announcement**

The sample consists of 1,090 announcements of tracking stock from 1986 to 1999. Cumulative abnormal returns are estimated using the standard market model procedure with parameters estimated for the period 210 days to 60 days before the announcement. Day 0 in event time is the date of the publication in which the company's initial announcement appears. "****", "***" and "**" represent 1% , 5% and 10% significance levels using a two-tailed test, respectively.

Period Relative to the Announcement	Mean Abnormal Return (%)	Median Abnormal Return (%)	t-statistic	P-value for Wilcoxon	% of Positive Abnormal Returns	N
-3	-0.19	-0.07	-2.00 **	0.0282	47.52	1090
-2	-0.03	-0.01	-0.32	0.9619	49.54	1090
-1	-0.29	-0.08	-2.60 **	0.0470	47.43	1090
0	1.22	0.81	10.11 ***	0.0000	64.22	1090
1	0.50	0.24	5.02 ***	0.0000	54.50	1090
2	0.20	-0.03	2.34 **	0.3402	48.90	1090
3	0.11	-0.06	1.39	0.5988	48.53	1090
CAR (0,2)	1.92	1.55	12.81 ***	0.0000	66.70	1090

Table 3
Abnormal Returns Classified by the Actual Share Repurchases or Market-Adjusted Buy-and-Hold Return

In each cell, 3 numbers are listed. From top to bottom, these are (i) sample size, (ii) abnormal mean return (%) (iii) abnormal median return (%). Abnormal stock return in the three-day period surrounding announcements of 1,090 shares repurchases by 1,009 firms that announced at least two announcements during 1986-1999. Actual share repurchases are quarterly share repurchases cumulated from CRSP over the first year subsequent the last repurchase plan announcement. Market-Adjusted six-month buy-and-hold return (Adj-Market BHR) is difference between sample's six-month BHR and value-weighted market index's 6-month BHR subsequent the last repurchase plan announcement. "****", "***", And "**" represent 1%, 5%, and 10% significance levels, respectively.

<i>Panel A: Abnormal Returns by Actual share repurchases quintiles</i>		
Actual share repurchases quintiles	Tests of Differences V.S Small	
	361	
Small	1.443****	
	1.170****	
	363	
2	1.746****	
	1.556****	
	366	
Large	2.549****	1.106****
	1.761****	0.591****
<i>Panel B: Abnormal Returns by Market-adjusted BHR quintiles</i>		
Market-adjusted BHR quintiles	Tests of Differences V.S Small	
	356	
Low	1.601****	
	1.269****	
	370	
2	1.765****	
	1.514****	
	364	
High	2.376****	0.775**
	1.822****	0.553**

Table 4
Cross-Sectional Regression Analyses of the Announcement Period Returns of Shares Repurchases

Three-day (0,1,2) announcement-period abnormal return is the dependent variables. Actual share repurchases are quarterly shares repurchases cumulated the first year following the last repurchase plan announcement (results are quantitatively and qualitatively similar for cumulative repurchases over the half year, one and half years and over the entire two years). We scale by total number of shares outstanding at the time of announcement. Crsp-share is measured by CRSP. Compustat-share is calculated by Compustat. Pc/low (Pc/mean) price is measured by repurchase dollars divided by the low (mean) price. TS/low (TS/mean) price is measured by increase in the dollar value of treasury stock divided by low (mean) price. Market-adjusted BHR is measured by sample's 6-month BHR minus value-weighted market index's 6-month BHR following the last repurchase plan announcement. Sequence represents the n (n=1,2,3,4,5) time that a firm announces during the sample period. The control variables are as follows: The prior one year abnormal return represent the prior one year buy-and-hold returns compounded from 252 days before (or the listing date) up to three days before the announcement for repurchasing firms minus the compounded return of the matching firms over the same period; FCF is regarded as industry median-adjusted free cash flows divided by assets; LEV is calculated by industry median -adjusted ratio of the total debt to total assets at the previous fiscal year-end; Shares announced/out. is the percentage of announced repurchases shares relative to total outstanding shares at month-end prior to the announcement; LSIZE is the natural logarithm of market value of equity and LBM is its logged book-to-market ratio, both measured at year-end prior to the announcement. Numbers in parentheses are t-statistics. The number of observations varies across regressions because of data availability. "****", "***", And "*" represent 1%, 5%, and 10% significance levels, respectively.

Announcement abnormal return						
Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	0.062 (4.407)***	0.068 (4.684)***	0.071 (4.286)***	0.071 (4.296)***	0.070 (4.849)***	0.066 (4.547)***
Actual share repurchases						
Crsp-share	0.314 (4.484)***					
Compustat-share		0.063 (2.728)***				
Pc/low price			0.064 (2.163)**			
Pc/mean price				0.066 (2.101)**		
TS/low price					0.083 (2.699)***	
TS/mean price						0.088 (2.696)***
Market-adjusted BHR	0.023 (3.692)***	0.021 (3.291)***	0.023 (3.314)***	0.023 (3.316)***	0.021 (3.367)***	0.021 (3.695)***
Sequence	-0.003 (-2.200)**	-0.003 (-2.140)**	-0.005 (-2.580)**	-0.005 (-2.570)**	-0.004 (-2.360)**	-0.004 (-2.390)**
Prior one year AR	-0.007 (-1.760)*	-0.007 (-1.760)*	-0.007 (-1.550)	-0.007 (-1.550)	-0.008 (-2.120)**	-0.008 (-2.110)**
FCF	0.023 (1.329)	0.014 (0.800)	-0.004 (-0.22)	-0.004 (-0.210)	0.002 (0.095)	0.002 (0.123)
LEV	0.006 (0.612)	0.007 (0.695)	0.004 (0.418)	0.004 (0.414)	0.004 (0.395)	0.004 (0.391)
Shares announced/out.	0.049 (2.617)***	0.060 (3.274)***	0.069 (3.264)***	0.069 (3.273)**	0.064 (3.521)***	0.064 (3.562)***
LSIZE	-0.003 (-3.71)***	-0.003 (-3.91)***	-0.003 (-3.10)***	-0.003 (-3.11)***	-0.004 (-3.970)***	-0.003 (-3.860)***
LBM	-0.006 (-0.63)	-0.008 (-0.92)	-0.011 (-1.10)	-0.011 (-1.100)	-0.010 (-1.100)	-0.009 (-0.980)
ADJRSQ_	0.063	0.051	0.055	0.055	0.055	0.057
n	1084	1026	791	791	1011	1011

Table 5
Cross –Sectional Regression of Analyst’s Adjusted Forecast Revisions of
Current-year Earnings Per Share

The table reports regression analyses of the six-month (0, 5) cumulative abnormal forecast revision (AFR) of current-year earnings. Actual share repurchases are quarterly shares repurchases cumulated the first year following the last repurchase plan announcement (results are quantitatively and qualitatively similar for cumulative repurchases over the half year, one and half years and over the entire two years). Crsp-share is measured by CRSP. Compustat-share is calculated by Compustat. Pc/low (Pc/mean) price is measured by repurchase dollars divided by the low (mean) price. TS/low (TS/mean) price is measured by increase in the dollar value of treasury stock divided by low (mean) price. Market-adjusted BHR is measured by sample’s 6-month BHR minus value-weighted market index’s 6-month BHR following the last repurchase plan announcement. Sequence represents the n (n=1,2,3,4,5) time that a firm announces during the sample period. The control variables are as follows: The prior one year abnormal return represent the prior one year buy-and-hold returns compounded from 252 days before (or the listing date) up to three days before the announcement for repurchasing firms minus the compounded return of the matching firms over the same period; FCF is regarded as industry median-adjusted free cash flows divided by assets; LEV is calculated by industry median -adjusted ratio of the total debt to total assets at the previous fiscal year-end; Shares announced/out. is the percentage of announced repurchases shares relative to total outstanding shares at month-end prior to the announcement; LSIZE is the natural logarithm of market value of equity and LBM is its logged book-to-market ratio, both measured at year-end prior to the announcement. Numbers in parentheses are t-statistics. The number of observations varies across regressions because of data availability. “***”, “**”, And “*” represent 1%, 5%, and 10% significance levels, respectively.

Abnormal Earnings Forecast Revisions of Analysts						
Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	-1.542 (-0.640)	-1.969 (-0.79)	-3.308 (-1.140)	-3.299 (-1.140)	-1.806 (-0.760)	-1.809 (-0.760)
Actual share repurchases						
Crsp-share	29.437 (2.127)**					
Compustat-share		9.304 (2.375)**				
Pc/low price			8.845 (1.650)*			
Pc/mean price				9.408 (1.652)*		
TS/low price					9.333 (1.971)**	
TS/mean price						10.095 (2.002)**
Market-adjusted BHR	2.006 (2.028)**	2.349 (2.303)**	2.570 (2.255)**	2.585 (2.267)**	1.993 (2.048)**	2.000 (2.055)**
Sequence	0.181 (0.795)	0.224 (0.959)	0.208 (0.713)	0.211 (0.721)	0.279 (1.247)	0.279 (1.249)
Prior one year AR	2.994 (4.883)***	2.867 (4.565)***	2.890 (4.125)***	2.891 (4.127)***	2.529 (4.207)***	2.528 (4.205)***
FCF	-2.695 (-0.950)	-2.412 (-0.83)	-0.780 (-0.230)	-0.763 (-0.23)	-1.802 (-0.640)	-1.782 (-0.630)
LEV	0.532 (0.353)	0.781 (0.504)	-0.777 (-0.440)	-0.789 (-0.44)	-0.107 (-0.070)	-0.116 (-0.070)
Shares announced/out.	0.374 (0.114)	0.846 (0.255)	1.642 (0.395)	1.670 (0.402)	1.921 (0.608)	1.939 (0.614)
LSIZE	0.093 (0.641)	0.099 (0.664)	0.195 (1.087)	0.194 (1.082)	0.093 (0.654)	0.093 (0.654)
LBM	-2.854 (-1.900)*	-2.546 (-1.64)*	-3.804 (-2.12)**	-3.808 (-2.12)**	-3.496 (-2.30)**	-3.504 (-2.310)**
ADJRSQ_	0.048	0.049	0.059	0.059	0.051	0.051
n	895	850	662	662	832	832

Table 6
Cross –Sectional Regression of Analyst’s Adjusted Forecast Revisions of Long-term Earnings Growth

The table reports regression analyses of the six-month (0, 5) cumulative abnormal forecast revision of long-term earnings growth. Actual share repurchases are quarterly shares repurchases cumulated the first year following the last repurchase plan announcement (results are quantitatively and qualitatively similar for cumulative repurchases over the half year, one and half years and over the entire two years). Crsp-share is measured by CRSP. Compustat-share is calculated by Compustat. Pc/low (Pc/mean) price is measured by repurchase dollars divided by the low (mean) price. TS/low (TS/mean) price is measured by increase in the dollar value of treasury stock divided by low (mean) price. Market-adjusted BHR is measured by sample’s 6-month BHR minus value-weighted market index’s 6-month BHR following the last repurchase plan announcement. Sequence represents the n (n=1,2,3,4,5) time that a firm announces during the sample period. The control variables are as follows: The prior one year abnormal return represent the prior one year buy-and-hold returns compounded from 252 days before (or the listing date) up to three days before the announcement for repurchasing firms minus the compounded return of the matching firms over the same period; FCF is regarded as industry median-adjusted free cash flows divided by assets; LEV is calculated by industry median -adjusted ratio of the total debt to total assets at the previous fiscal year-end; Shares announced/out. is the percentage of announced repurchases shares relative to total outstanding shares at month-end prior to the announcement; LSIZE is the natural logarithm of market value of equity and LBM is its logged book-to-market ratio, both measured at year-end prior to the announcement. Numbers in parentheses are t-statistics. The number of observations varies across regressions because of data availability. “***”, “**”, And “*” represent 1%, 5%, and 10% significance levels, respectively.

Abnormal Earnings Forecast Revisions of Analysts						
Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	-0.030 (-0.310)	-0.011 (-0.110)	-0.040 (-0.360)	-0.040 (-0.360)	-0.030 (-0.310)	-0.030 (-0.300)
Actual share repurchases						
Crsp-share	1.812 (3.403)***					
Compustat-share		0.294 (1.982)**				
Pc/low price			0.296 (1.686)*			
Pc/mean price				0.315 (1.682)*		
TS/low price					0.357 (1.874)*	
TS/mean price						0.370 (1.819)*
Market-adjusted BHR	0.066 (1.721)*	0.074 (1.876)*	0.076 (1.842)*	0.076 (1.854)*	0.080 (2.142)**	0.080 (2.143)**
Sequence	-0.003 (-0.340)	-0.004 (-0.410)	-0.008 (-0.730)	-0.008 (-0.720)	-0.002 (-0.220)	-0.002 (-0.220)
Prior one year AR	0.004 (0.169)	0.003 (0.120)	0.016 (0.564)	0.016 (0.567)	0.004 (0.163)	0.004 (0.169)
FCF	-0.257 (-2.39)**	-0.240 (-2.170)**	-0.229 (-1.940)*	-0.228 (-1.940)*	-0.203 (-1.910)*	-0.203 (-1.910)*
LEV	0.043 (0.736)	0.057 (0.951)	0.032 (0.509)	0.032 (0.503)	0.026 (0.447)	0.026 (0.449)
Shares announced/out.	-0.081 (-0.580)	-0.077 (-0.540)	-0.092 (-0.630)	-0.091 (-0.620)	0.004 (0.029)	0.005 (0.036)
LSIZE	0.005 (0.800)	0.004 (0.591)	0.006 (0.826)	0.005 (0.822)	0.003 (0.532)	0.003 (0.528)
LBM	-0.111 (-1.880)*	-0.099 (-1.590)	-0.065 (-0.950)	-0.065 (-0.950)	-0.054 (-0.860)	-0.054 (-0.860)
ADJRSQ_	0.020	0.012	0.009	0.009	0.007	0.007
n	815	777	630	630	752	752

