WHAT DRIVES THE DECLINING WEALTH EFFECT OF SUBSEQUENT SHARE REPURCHASE ANNOUNCEMENTS?

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ABSTRACT

Recent academic studies document that open market share repurchase announcements generate significantly lower returns than those reported in earlier studies. We find that the lower announcement return is associated with increasing number of subsequent announcements in the more recent periods. Although the announcement period return from initial announcement is positive, subsequent announcement returns are significantly decreasing. Further, we find that the decreasing returns of subsequent announcements are attributed to firms with negative past repurchase announcement returns. Our multivariate test results are consistent with the notion that the decreasing subsequent repurchase announcement returns are driven by hubris endowed managers.

I. INTRODUCTION

The U.S. stock markets have become less enthusiastic to open market share repurchase announcements over the years (Bonaime, 2012; Yook and Gangopadhyay, 2011). Earlier studies in the open market share repurchase literature document cumulative announcement period abnormal returns of at least 3% (see, for example, Vermaelen, 1981; Ikenberry, Lakonishok, and Vermaelen, 1995).[1] The average cumulative abnormal announcement return, however, is reported to have decreased to 2.59% in 1994, and since 2003 has declined further to only 1.04% in 2005 (Yook and Gangopadhyay, 2011).

What has caused the depletion of open market repurchase announcement returns? One possible explanation is the increasing number of frequent repurchase announcements.[2] Jagannathan and Stephens (2003) find that the market reacts less positively to announcements made by frequent repurchasers than to those made by non-frequent repurchasers. The number of frequent repurchase announcements in their sample, during the period from 1986 to 1996, accounts for about half of their total sample. Since 2003, however, the frequency of

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[1]The main motive for open market share repurchases is mainly either to buy back undervalued stocks (Lakonishok and Vermaelen, 1990; Peyer and Vermaelen, 2005), or to distribute temporary free cash flows, in lieu of dividends, to shareholders (Stephens and Weisbach, 1998; Dittmar, 2000; Skinner, 2008). Other theories used to explain repurchases are: (1) to improve their leverage ratios (Bagwell and Shoven 1989); (2) to discourage takeover attempts (Bagwell, 1991); and (3) to counter the dilution effect of stock option plans (Fenn and Liang, 2001; Kahle, 2002).

[2]Another possible explanation could be due to lower past repurchase completion rates. Bonaime (2012), Mishra, Racine and Luke (2011) and Chang, Chen and Chen (2010) argue that when a firm launches an open market share repurchase program but does not follow it through or repurchase less than the number of shares announced in the program, the market considers the firm as having a bad reputation. Consequently, the market will react less favourably when the firm announces a subsequent open market share repurchase program. Low past completion rates, however, cannot explain why some firms keep repeating open market repurchase programs. If the motivation to repurchase is related to stock undervaluation, which is one of the most common motives to launch an open market repurchase program, a positive market reaction to the repurchase announcement may be sufficient for the announcing firm to not fully follow through on its announced repurchase plan, and therefore may explain its lower repurchase completion rate. Similarly, if a firm's subsequent open market repurchase program is motivated by distributing excess cash flows or stock options, it should not have a low repurchase completion rate.

announcing subsequent open market repurchase programs is reported to have been tripled (Fu and Huang, 2016).[3]

If the market reacts less favorably to subsequent repurchase program announcements, why would some firms keep repeating such a program? The literature suggests that firms that repeat their open market repurchase programs are growth firms and have large cash flows. Ben-David, Graham, and Harvey (2007) argue that hubristic managers are likely to overinvest and overly optimistic about their ability in increasing their firms' values. If these managers believe that their firms' stock prices are less than what they believe should be, they are likely to communicate their (biased) belief about their firms' equity values to the market by launching open market repurchase programs. As empirical evidence in the literature suggests that hubris bias is pervasive among managers,[4] this paper examines whether managerial hubris bias can explain the decreasing magnitude of open market repurchase announcement period returns. Our results are consistent with this conjecture.

We find that, during the sample period from 1996 to 2014, the number of repeat or subsequent open market repurchase announcements has been increasing over the years. On average, the number of repeat announcements in a year accounts for about 68% of total open market repurchase announcements[5]. Consistent with prior studies, firms that repeating their repurchase programs have higher growth opportunities, have more free cash flows, are more profitable, less undervalued, larger and have significantly lower cumulative abnormal

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[3] A similar pattern has also been observed in the Swedish stock market. De Ridder and Rasbrandt (2014) find that repeat repurchasers make two out of three Swedish share repurchase announcements.

[4] The finance literature documents that some managers are prone to self-attribution bias, which leads them to be hubris. Ben-David, Graham, and Harvey (2007) find that among other corporate actions, these managers are more likely to be associated with less efficient investments. Hayward and Hambrick (1997) find that CEO's hubris (or exaggerated self-confidence) is strongly positively associated with the size of premiums paid for acquisitions. Malmendier and Tate (2008) find evidence consistent with the view that hubristic CEOs overestimate their ability to generate returns. Hence, they overpay for target companies and undertake value-destroying mergers. Another managerial trait – CEO narcissism has also been shown to be positively related to the number and size of acquisitions (Chatterjee and Hambrick, 2007). Billett and Qian (2008) and Karolyi et al. (2015) find evidence consistent with hubristic managers explaining the declining returns of serial acquirers. Recent work by Aktas et al., (2016) show that both acquirer and target CEO narcissism affect the characteristics of the takeover process. No prior studies have studied stock repurchases using the lens of managerial hubris.

[5] drops only in 1998 and 1999 to less than half of the total announcements in a year (48% and 45%, respectively)

announcement period returns than those that do not repeat share repurchase announcements (1.83% vs. 3.56%, respectively). It is, therefore, an empirical question why such firms, having high growth opportunities and large cash flows, would keep investing in their own stocks rather than investing in the real sector.

We document firms that repeat open market share repurchase programs experience an average cumulative announcement period abnormal return of 2.51% from their initial announcement. However, when these firms repeat their repurchase programs, the market reacts less favorably to the second announcement, that the cumulative announcement period return drops significantly to 1.77%. The cumulative announcement period return continues to drop further to only 0.89% when firms make five or more open market repurchase announcements. In a further analysis we find that firms with negative past announcement returns are likely to repeat open market repurchase programs and experience decreasing subsequent announcement returns, which is consistent with the notion that managers endowed with hubris are associated with decreasing subsequent announcement returns.

This study sheds light in explaining the declining open market share repurchase announcement returns and attempts to contributes to the literature in several aspects. First, we employ a more recent sample period (from 1996 to 2014) and document that the number of repeat open market share repurchase announcements has significantly increased over the years, suggesting that there is a systematic change in repurchasing behavior during the sample period. Second, the present study is the first to document that, not only the announcement returns of repeat announcements are lower than those of non-repeat announcements, but also that the magnitude of subsequent announcement returns is decreasing significantly. Third, we propose a managerial motivation bias to explain the increasing number of repeat open market share repurchase programs. Our results are consistent with the hubris bias hypothesis that firms with managers endowed with hubris bias

and equipped with excessive cash flows, are more likely to repeat their open market share repurchase programs even though their decisions generate lower subsequent announcement returns.

The rest of the paper is organized as follows. In section 2, we develop and discuss our hypotheses. Section 3 describes our sample and data collection processes. The empirical results are reported in section 4 and section 5 concludes.

II. HYPOTHESIS DEVELOPMENT

The literature documents that repeat repurchasing firms have higher growth opportunities, have more free cash flows, are less undervalued and are larger than those of infrequent repurchasing firms (Jagannathan and Stephens, 2003). Such firm characteristics provide an ideal research setting for examining the managerial hubris hypothesis in subsequent share repurchase programs as, according to the literature, hubristic managers are significantly more responsive to excess cash flows and tend to over-invest by repurchasing their firms' shares (Ben-David et al., 2007; Malmendier and Tate, 2005; Campbell, Gallmeyer, Johnson, Rutherford, & Stanley, 2011).[6] Supported with large amounts of free cash flows, managers may feel confident in their ability to meet the firm's obligations and may also be over-confident in using the excess free cash flows on a subsequent open market repurchase program when they believe their firms' equity value is underpriced, regardless of firms' high growth opportunities and could have invested in real capital projects instead. If a repeat repurchase program is not in the best interest of shareholders, the market would react

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[6] Lehn and Poulsen (1989) find that firms with undistributed free cash flows tend to pay a significant premium for stock repurchases related to going private transactions. Howe, He, and Kao (1992) investigate whether Jensen's (1986) free cash flow theory explains the market reaction to tender offer share repurchases and specially designated dividends where the cash distribution is not expected to be repeated. They find that free cash flows do not explain the announcement returns very well and conclude that their results are inconsistent with Jensen's free cash flow hypothesis but consistent with the information-signaling hypothesis. They offer the entrenchment hypothesis as a possible explanation for their conflicting findings with those of Jensen's.

less favorably to a firm's subsequent announcement. As such, we test the following hypothesis:

H_1: Subsequent open market announcements will experience lower announcement period returns.

Managers may develop a hubris bias when their previous open market repurchase program is successful (learning hubris) and, therefore, may overestimate their ability to repeat their previous success by launching a subsequent repurchase program. On the other hand, managers can also be hubristic if they are already endowed with it. Prior studies in the psychology literature document that people endowed with hubris are likely to ignore negative feedback of their behavior (Snyder, Shenkel & Lowery, 1977; Swann and Read, 1981; Taylor and Gollwitzer, 1995). Thus, managers endowed with hubris are likely to ignore negative feedback from the market (Roll, 1986; Billet and Qian, 2008). Because they are biasedly optimistic about their ability to succeed, even though their firm's past announcement return from the previous program is negative, if they believe that their current stock price is undervalued, they would likely attempt to correct the stock price by repeating a repurchase program. Therefore, we expect that the subsequent announcement returns of such firms to be lower, or even negative. Thus, our second hypothesis is:

H_2: If repeat repurchase announcements are attributed to endowed hubris, then firms with negative past announcement period returns will experience even lower subsequent announcement returns.

Managers with endowed hubris bias may likely repeat a subsequent share repurchase announcement within a shorter period, as they would like to repeat their previous success. The shorter the number of days between a previous and a current announcement, the lower is the expected current announcement period return. Consequently, our third hypothesis is:

H₃: The time between two subsequent announcements is positively related to the announcement period return.

III. DATA

We collect open market share repurchase announcement dates of non-financial and non-utility firms from Thomson Reuters SDC Platinum from January 1996 to September 2014. We obtain price data of these firms from Thomson Reuters Datastream during the sample period. We then compute market-adjusted announcement period abnormal returns with market value-weighted returns obtained from Kenneth French's website[7] as the benchmark. We do not use the market model to estimate abnormal announcement returns as several firms in the sample repeat their announcements in less than a year period, thus would bias the measurement of normal period return.[8] Merging the data obtained from SDC Platinum and Thomson Reuters Datastream reduces our sample size to 3,122 announcement-year observations. To mitigate the effects of outliers, we winsorize these variables at the 1% and 99% levels.

Table 1 shows the number of non-repeat and repeat announcements from 1996 to 2014, their corresponding announcement period returns, and the associated size programs during the sample period. In Panel A of Table 1, the total number of open market share repurchase announcements increases from 227 in 1996 to 405 in 2008 and then declines to 82

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[7] http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html#HistBenchmarks
[8] This methodology is also used in studies on repeat acquisitions such as Karolyi, Liao, and Loureiro (2015) and Billet and Qian (2008).

in 2014. The lowest (highest) total number of announcements is in 2012 (1998) with 36 (405) announcements. The percentage of announcements made by repeat repurchasers decreases from 59% in 1996 to less than half in 1999. Since then, it has increased to, on average, around three-fourths of all repurchase announcements every year in the sample period. Panel B shows that the lowest (highest) 2-day CARs (days 0,+1) is 0.4% (4.7%) in year 2006 (1999). The average 2-day CARs since year 2000 is 1.78% per year, which is much lower than those reported in earlier studies in the open market repurchase literature. The average cumulative announcement abnormal return for the whole sample period is 2.4%. We observe that the size of repurchase programs increases over time with the average smallest (largest) program launched in 2004 (2012). On average, repurchasing firms plan to buy back around 7.56% of their outstanding stocks. The (untabulated) correlation coefficient between the percentage of repeat announcements and announcement returns is negative. These statistics clearly show that open market share repurchase announcements in more recent periods are dominated by repeat repurchase announcements with significantly lower announcement period returns.

<Insert Table 1 about here.>

IV. EMPIRICAL RESULTS

Fu and Huang (2016) report the disappearance of long run abnormal returns following stock repurchase programs from 2003 to 2012. They argue that the U.S. stock markets have become more efficient since 2003 due to several regulatory changes, such as the decimalization of stock prices and the enactment of the Sarbanes-Oxley Act of 2002 (SOX). These are expected to affect not only market and regulatory environments but also reduce managers' incentives to manipulate earnings. We examine whether the lower cumulative announcement period return can be attributed to increased efficiency of the U.S. stock market

since 2003. We split per year announcement period returns based on whether they are the first or subsequent announcements made by the repurchasing firms. The results, as reported in Table 2, show that, on average, subsequent announcement returns are significantly lower than those of initial announcements at the 95% confidence level. These results remain consistent when we split our sample into pre- and post-2003 periods. Our findings suggest that the decline in open market repurchase announcement period returns cannot be explained by the increased efficiency of the U.S. stock market alone, but subsequent announcements may also explain the lower repurchase announcement period returns.

<Insert Table 2 about here.>

Panel A of Table 3 shows the differences of announcement returns sorted by firms that announce only one repurchase during the sample period versus firms that repeat their repurchase announcements. The cumulative abnormal return of open market repurchase programs announced by firms that do not repeat their open market repurchase programs is 3.56% and significantly higher than that of firms that repeat their announcements (1.83%), which is consistent with the findings of Jagannathan and Stephens (2003). In Panel B, announcement returns are sorted based on the order of repeat announcements. On average, repeat repurchasers earn 2.51% from their initial announcements. The average cumulative abnormal return in the second announcements, however, drops significantly to 1.77%. Third announcements experience a further decline in cumulative announcement return to 1.25%. The cumulative announcement return continues to decline when firms announce more open market repurchase programs (0.89%).

<Insert Table 3 about here.>

Table 4 shows the descriptive statistics of the sample sorted by the frequency of announcements made by repurchasing firms. Consistent with prior studies, repeat repurchasing firms are bigger, more profitable, have more free cash flows, have higher

growth opportunities, and are less underpriced than those of non-repeat repurchasing firms (the mean of RUNUP is -7.3% vs. -9.2%, respectively). The less underpricing of repeat repurchasing firms suggests that the motivation of firms that frequently announce open market share repurchase programs may be less attributable to undervaluation but seems to be more consistent with the distribution of excess cash flows. According to the free cash flows hypothesis, when there are no growth opportunities available, managers distribute excess cash to the firm's shareholders to maximize their firm value. These firms, however, have higher and increasing growth opportunities than non-repeat repurchasing firms as indicated by their book-to-market ratios. Thus, instead of investing in the real sectors, these firms choose to invest in the firms' stocks by announcing subsequent repurchase programs., which is inconsistent with the free cash flow hypothesis but is more consistent with the hubris bias hypothesis.

Table 4 also shows that the stock performance of repeat repurchasers prior to subsequent announcements (RUNUP) is negative. The hubris bias hypothesis predicts that when hubristic managers believe their firms' shares are undervalued, they are likely to repurchase shares by repeating their repurchase program. Furthermore, due to their illusory belief that they can repeat their past success of announcing such programs, these managers may also increase the size of their repurchase programs in subsequent announcements. The size of the repurchase program (SIZEPROG) reported in Table 4 is consistent with this conjecture. The size of the programs announced by repeat repurchasers from the initial announcement to subsequent announcements increases from 6.78% of the total outstanding shares to 7.50% in subsequent announcements, and further up to 7.69% for more than three subsequent announcements.

<center><Insert Table 4 about here.></center>

To examine whether hubristic managers are more likely to repeat repurchase programs, we run a logit regression and report the results in Table 5.

$$REPEAT\ ORDER = \alpha + \beta_1 HUBRIS + + \beta_2 RUNUP + \beta_3 SIZE + \beta_4 B/M + \beta_5 \Delta SIZEPROG$$
$$+ \beta_6 LEVERAGE + \beta_7 STDEV + \beta_8 ROA + \beta_9 CASH + Industry\ and\ Year\ Control + \varepsilon$$

(1)

where REPEAT ORDER is a dummy variable of 1 for each repeat repurchase announcement (second, third, and fifth announcement). Hubris bias can be endowed or gained from a positive past experience. We define ENDWHUBRIS (LEARNHUBRIS) as having a value of 1 if a previous repurchase announcement return is negative (positive). RUNUP is the cumulative stock returns from 46 days to 6 days prior to an announcement. SIZE is the natural logarithm of equity market values. B/M is book-to-market ratio. LEVERAGE is leverage ratio defined as total debt to total assets. STDEV is the standard deviation of stock return from 100 days to 46 days prior to an announcement. ΔSIZEPROG is the change in the size of the repurchase program measured as the percentage of shares authorized at an announcement. ROA is return on assets. All of the accounting variables are measured in the quarter before the announcement. In panel A of Table 5, the coefficients on ENDWHUBRIS are positive and significantly related to subsequent repurchase programs. Thus, firms with negative past announcement returns are likely to repeat their share repurchase program. The results are similar for firms with positive past announcement returns (Panel B).

<Insert Table 5 about here.>

Next, we examine announcement returns sorted based on the sign of past announcement returns. Panel A of Table 6 shows that the mean (median) return of the second repurchase announcements of firms that experience a negative announcement return from their initial announcements is 1.59% (1.29%) during the two-day announcement window period. When firms make subsequent announcements, their mean (median) announcement return drops significantly to 0.16% (-0.16%) during the two-day window period. However,

we do not find any evidence of decreasing subsequent announcement returns for firms with positive past announcement returns (Panel B). These results suggest that the decreasing subsequent announcement returns can be attributed to firms experiencing negative past announcement returns that keep repeating their repurchase programs.

<Insert Table 6 about here.>

The results displayed in Tables 4 and 5 suggest that firm characteristics of repeat repurchasers are different from those of non-repeat repurchasers and that they have the propensity to repeat open market share repurchase programs. Hence, we conduct a logit analysis to examine the determinants or the likelihood of these firms to announce a share repurchase program:

$$REPEAT\ REPURCHASE = \alpha + \beta_1 RUNUP + \beta_2 SIZE + \beta_3 B/M + \beta_4 SIZEPROG$$
$$+ \beta_5 LEVERAGE + \beta_6 STDEV + \beta_7 ROA + \beta_8 OPTION + Industry\ and\ Year\ Control + \varepsilon \qquad (2)$$

where REPEAT REPURCHASE is a dummy of 1 for announcements made by repeat repurchasers. The results reported in Table 7 are consistent with the firm characteristics reported in Table 4. RUNUP is positively related to the likelihood to a repeat repurchase, suggesting that repeat repurchasers are not motivated by under-performance. Large firms with large cash flows are more likely to repeat share repurchase programs. Firms repeating repurchase announcements are also likely to increase their program size.

<Insert Table 7 about here.>

Next, we examine if hubris explains the lower subsequent repurchase announcement returns. In this analysis, we control for the probability of repeating a repurchase program measured by the fitted value from the logistic regression reported in Table 7. If the market is able to anticipate that a subsequent repurchase program would be launched by a repeat repurchaser, then we expect that the coefficient of this variable should be significantly related

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to the announcement period return and that the market should not react significantly to subsequent or repeat share repurchase announcements.

We report the results of cross-sectional regressions of share repurchasers' announcement abnormal returns on hubris and control variables in Table 8. Consistent with our second hypothesis, the results show that the decreasing subsequent announcement period returns are attributed to hubris-endowed managers. The coefficients of the probability of repeating a repurchase are not statistically significant, suggesting that the market may fail to anticipate subsequent repurchase announcements. The last column in Table 8 shows that firms that repeat their repurchase announcements within a shorter period experience significantly lower returns, which is consistent with our third hypothesis.

<Insert Table 8 about here.>

IV.1. Robustness tests

Our sample starts from the beginning of 1996. However, there could be a concern that this might not be representative of the start of an initial open market repurchase program. For added robustness, we follow Song and Walkling (2000), Cai et al. (2011) and Aktas et al. (2013) by imposing an initial time lag of two years (1996 and 1997) during which time the repurchasing firms are not active. We include in the sample only those firms that have not undertaken any transaction during the initial dormant period (1996 and 1997). The results are similar to those reported in our analysis.

Additionally, we redefine our measure for repeat repurchasers as firms that announce subsequent open market share repurchase programs within five years of their initial issue. Although this alternative measure may suffer from a sample selection bias due to the restriction, we find that the results are also similar to those already reported. We also consider the average abnormal returns on the announcement day (day 0) and three (-1, +1), four (-

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2,+2), and ten (-5,+5) days of return window periods in our analysis. We find that the results remain the same.

In this study, we examine managerial hubris at the firm level for several reasons. First, the most popular proxy for hubris at the CEO level is the option-related measure developed by Malmendier and Tate (2005). However, according to Malmendier and Tate (2015), Execucomp data prior to 2006 cannot be used to calculate this measure, while noting that our sample period runs from 1996 to 2014. Second, a recent study by Bayat, et al. (2016) suggests that this option-based measure does not accurately measure hubris at the CEO level; rather, it measures firm characteristics. They find that CEOs who are considered hubristic according to the option-based measure are not considered as hubristic when they change their affiliation. As prior studies suggest that hubristic managers with large cash flows tend to over-invest, therefore, we consider hubristic managers as those in firms that have the highest investments. Following Campbell et al. (2011), we measure a firm's industry-adjusted investments as the difference between the firm's capital expenditures scaled by its beginning of year gross property, plant, and equipment (PPE) and the average industry investment based on 2-digit SIC codes. We downloaded these variables from the Research Insight database and matched the variables to our final sample. We then create quintiles based on the industry-adjusted investments and examine only those firms that belong to the highest quintile (the largest investments) as they are considered to have hubris bias. The matching procedure and examining only the highest quintile, however, reduce the number of observations quite significantly. We re-run the regression models and find qualitatively similar results. We find that the endowed hubris variable is significantly and negatively associated with announcement period cumulative returns.

We also use two additional proxies for hubris bias. First, we use a dummy variable of 1 for subsequent announcements as hubristic managers are expected to repeat a repurchase

program. Due to hubris, however, their firms are expected to experience lower subsequent announcement returns. Second, we consider the number of past repurchase announcements in our analysis. A manager who has experience in launching more than one share repurchase program can develop hubris bias and feel more confident in repeating a program but result in negative announcement returns. The results are similar to those reported earlier. Both proxy variables are negatively related to the announcement period returns; however, only the coefficient of the dummy variable is statistically significant.

V. SUMMARY AND CONCLUDING REMARKS

We examine open market share repurchase announcements during the period between January 1996 and September 2014. We document that repeat announcements, which generate decreasing announcement returns, dominate the number of open market share repurchase announcements in the later period. We also find that the decreasing announcement returns are attributed to announcements made by firms experiencing negative past repurchase announcement returns. This finding is consistent with the notion that managers endowed with hubris drive the declining wealth of repeat repurchasing firms' shareholders.

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Table 1. Sample Distribution and Market Adjusted Returns

Panel A. Number of Repurchases

YEAR	ONLY ONE	REPEAT	TOTAL	% REPEAT
1996	94	133	227	59%
1997	122	128	250	51%
1998	211	194	405	48%
1999	147	122	269	45%
2000	96	112	208	54%
2001	43	82	125	66%
2002	57	109	166	66%
2003	23	79	102	77%
2004	25	132	157	84%
2005	47	156	203	77%
2006	47	147	194	76%
2007	41	142	183	78%
2008	32	92	124	74%
2009	12	59	71	83%
2010	30	97	127	76%
2011	28	106	134	79%
2012	12	24	36	67%
2013	16	43	59	73%
2014	36	46	82	56%

Panel B. Cumulative Abnormal Announcement Returns

YEAR	CAR (0,+1)	SIZE OF PROGRAM (%) (SIZEPROG)
1996	0.024	6.656
1997	0.020	6.538
1998	0.030	7.358
1999	0.047	7.917
2000	0.045	7.631
2001	0.023	7.413
2002	0.040	6.617
2003	0.016	6.826
2004	0.013	6.465
2005	0.019	7.010
2006	0.004	7.459
2007	0.022	8.649
2008	0.025	8.025
2009	0.020	7.441
2010	0.015	8.753
2011	0.010	8.201
2012	0.020	9.407
2013	0.008	8.177
2014	0.014	7.055

ONLY ONE refers to firms that announce only one repurchase during the sample period. REPEAT is firms that announce to repurchase the first time and will repeat during the sample period. SIZEPROG is percent of shares authorized at initial authorization date.

Table 2. First and Subsequent Market-adjusted Announcement Returns

PERIOD	First announcement	Subsequent announcements	Difference
Average Total period	0.026***	0.016***	0.010**
Average 1996-2002	0.037***	0.022***	0.015**
Average 2003-2014	0.020***	0.013***	0.007**

Cumulative market-adjusted returns (0,+1) from first and subsequent open market share repurchase announcements.

***, **, * denote statistical significance at the 1%, 5% and 10%, respectively.

Table 3. Cumulative Abnormal Announcement Returns (0,+1)

Panel A. Only one repurchase vs. repeat repurchases

ONLY ONE	REPEAT	Difference
3.56%***	1.83%***	-1.73%***

Panel B. Cumulative announcement abnormal returns of repeat repurchasers

Initial announcement	Second announcement	Difference
2.51%***	1.77%***	-0.73%**

Second announcement	Third announcement	Difference
1.77%***	1.25%***	-0.53%*

Third announcement	≥ 5 announcements	Difference
1.25%***	0.89%***	-0.36%

Abnormal returns are measured as market-adjusted return. ONLY ONE is firms that announce one repurchase during the sample period. REPEAT is firms that announce to repurchase the first time and will repeat during the sample period. Initial announcement is the first announcement made by repeat repurchasers. Second announcement is the second announcement made by repeat repurchasers. Third announcement is the third announcement made by repeat repurchasers.

,* denote statistical significance at 5% and 1%, respectively.

Table 4. Descriptive Statistics

Mean values	Total	ONLY ONE	Repeat Repurchasers		
			Initial Announcement	≥ 2 Announcements	≥ 3 Announcements
CASHFLOW	0.120	0.092	0.133	0.137	0.140
B/M	0.561	0.671	0.519	0.492	0.436
DIVYIELD	0.008	0.005	0.007	0.009	0.011
LEVERAGE	0.178	0.180	0.172	0.179	0.183
SIZE ($000)	741,760	273,773	770,361	1,654,712	2,770,892
ΔSALES	0.022	0.018	0.035	0.019	0.023
ROA	0.049	0.016	0.064	0.068	0.079
ROA+1	0.048	0.009	0.068	0.069	0.076
RUNUP	-0.063	-0.092	-0.073	-0.035	-0.024
STDEV	0.028	0.034	0.028	0.023	0.020
SIZEPROG	7.420	7.702	6.780	7.496	7.689

ONLY ONE refers to firms that announce only one repurchase during the sample period. Initial announcement is the first announcement made by repeat repurchasers. Second announcement is the second announcement made by repeat repurchasers. Third announcement is the third announcement made by repeat repurchasers. CASHFLOW is measured as Cashflows/Total Assets. B/M is book to market ratio. DIVYIELD is dividend/market value of equity at time t-1. LEVERAGE is Total Debt/Total Assets. SIZE is the natural logarithm of market value of equity in the quarter prior to announcement quarter. ΔSALES is Change in Sales/Total Assets. ROA is Return on Assets. All accounting variables are measured in the quarter prior to the announcement quarter. RUNUP is cumulative market adjusted return measured from -46 to -6. STDEV is the standard deviation of market-adjusted return measured from day -100 to -46. SIZEPROG is the size of the repurchase program, measured as percentage of shares authorized at announcement.

TABLE 5

Hubris and Subsequent Repurchase Announcements

Panel A. Firms with negative past announcement returns (ENDOWED HUBRIS)

	Second announcement	p-value	Third announcement	p-value	Fifth announcement	p-value
ENDWHUBRIS	1.513***	(0.000)	1.271***	(0.000)	0.435**	(0.018)
RUNUP	0.486*	(0.079)	1.110***	(0.002)	0.184	(0.788)
SIZE	0.002	(0.957)	0.227***	(0.000)	0.214***	(0.001)
B/M	0.150	(0.266)	-0.191	(0.316)	-0.298	(0.415)
LEVERAGE	-0.082	(0.801)	-0.214	(0.571)	-0.594	(0.333)
STDEV	-8.956**	(0.029)	-8.846	(0.101)	-42.240***	(0.001)
ΔSIZEPROG	0.013	(0.324)	0.029**	(0.031)	-0.016	(0.399)
ROA	0.224	(0.445)	0.863	(0.047)	1.492	(0.090)
OPTION	0.515	(0.656)				
Intercept	-0.962	(0.532)	-3.587**	(0.010)	-4.589***	(0.008)
Industry effect	Y		Y		Y	
Year effect	Y		Y		Y	
LR chi2	349.10		968.99		393.72	
Pseudo R2	0.1124		0.3060		0.2811	
Number of obs.	2,990		2,905		2,164	

Panel B. Firms with positive past announcement returns (LEARNING HUBRIS)

LEARNHUBRIS	2.060***	(0.000)	0.879***	(0.000)	0.269	(0.189)
RUNUP	0.281	(0.326)	0.933***	(0.009)	0.231	(0.735)
SIZE	0.046	(0.177)	0.253***	(0.000)	0.224***	(0.000)
B/M	0.178	(0.209)	-0.112	(0.546)	-0.220	(0.545)
LEVERAGE	0.009	(0.980)	-0.222	(0.551)	-0.602	(0.327)
STDEV	-8.659**	(0.048)	-8.976	(0.098)	-43.154***	(0.001)
ΔSIZEPROG	0.024	(0.078)	0.036***	(0.007)	-0.015	(0.427)
ROA	0.068	(0.829)	0.929**	(0.046)	1.518*	(0.090)
OPTION	-0.061	(0.962)				
Intercept	-0.860	(0.546)	-5.805***	(0.000)	-5.033*	(0.079)
Industry effect	Y		Y		Y	
Year effect	Y		Y		Y	
LR chi2	481.99		910.10		389.99	
Pseudo R2	0.1552		0.2874		0.2784	
Number of obs.	2,990		2,905		2,164	

Logit analysis of repeat repurchasers. The dependent variable is one for a repeat repurchase made by repeat repurchasers. ENDWHUBRIS is one if past repurchase announcement return is negative. LEARNHUBRIS is one if past repurchase announcement return is positive. RUNUP is cumulative market adjusted return measured from -46 to -6. SIZE is the natural logarithm of market value of equity in the quarter prior to announcement quarter. B/M is book to market ratio. LEVERAGE is Total Debt/Total Assets. STDEV is the standard deviation of market-adjusted return measured from day -100 to -46. ΔSIZEPROG is the change in program size. ROA is Return on Assets. OPTION is a dummy variable of one if the motivation to conduct a share repurchase program is related to stock options. *p*-values are in parentheses.
***, **, * denote statistical significance at the 1%, 5% and 10%, respectively.

Table 6. Announcement Returns Sorted By Past Announcements Returns

Panel A. Negative past announcement returns

	CAR (0, +1)		
	2nd announcement	>2 announcements	Difference
Mean	1.59%	0.16%	-1.43%***
Median	1.29%	-0.16%	-1.45%†

Panel B. Positive past announcement returns

	CAR (0,+1)		
	2nd announcement	>2 announcements	Difference
Mean	1.39%	2.12%	0.74%**
Median	0.90%	1.50%	0.60%†

*** and ** denote statistical significance at the 1% land 5% levels respectively.

†denotes significance at the 1% level, based on Wilcoxon *p*-values for the median.

Table 7. The Determinants of Repeat Repurchases

	Coeff	(p-values)
RUNUP	0.600***	(0.001)
CASHFLOW	3.629***	(0.000)
SIZE	0.287***	(0.000)
B/M	0.226*	(0.061)
ΔSIZEPROG	0.038***	(0.006)
LEVERAGE	-0.123	(0.670)
STDEV	-7.744**	(0.026)
ROA	-0.014	(0.959)
OPTION	0.492	(0.614)
INTERCEPT	-3.168**	(0.029)
Year effect	Y	
Industry effect	Y	
LR chi2	616.11	
Pseudo R2	0.1599	
Number of obs.	2981	

Logit analysis of the determinants of repurchasing made by repeat repurchasers. The dependent variable is one for repurchases made by repeat repurchasers. RUNUP is cumulative market adjusted return measured from -46 to -6. CASHFLOW is measured as Cashflows/Total Assets. SIZE is the natural logarithm of market value of equity in the quarter prior to announcement quarter. B/M is book to market ratio. ΔSIZEPROG is the change in program size. LEVERAGE is Total Debt/Total Assets. STDEV is the standard deviation of market-adjusted return measured from day -100 to -46. ROA is Return on Assets. OPTION is a dummy variable of one if the motivation to conduct a share repurchase program is related to stock options. *p*-values are in parentheses.

***, **, * denote statistical significance at the 1%, 5% and 10%, respectively.

Table 8. Regressions of Repeat Repurchasers' Abnormal Returns

	(1)	(p-values)	(2)	(p-values)	(3)	(p-values)
ENDWHUBRIS	-0.008**	(0.037)				
LEARNHUBRIS			-0.02	(0.57)		
TBD (x10,000)					0.0288*	(0.083)
RUNUP	-0.031***	(0.000)	-0.031***	(0.000)	-0.01768	(0.125)
SIZE	-0.002	(0.306)	-0.002	(0.294)	-0.00173	(0.393)
B/M	0.003	(0.394)	0.003	(0.394)	0.002276	(0.672)
LEVERAGE	-0.018	(0.042)	-0.018**	(0.043)	-0.00916	(0.399)
STDEV	0.627***	(0.000)	0.625***	(0.000)	0.485303***	(0.003)
ΔSIZEPROG	0.001*	(0.055)	0.001*	(0.063)	0.000679*	(0.066)
OPTION	-0.026	(0.421)	-0.025	(0.434)	-0.08596	(0.111)
CASHFLOW	0.029	(0.280)	0.030	(0.266)	0.054924*	(0.091)
Pr(Repeat repurchase)	-0.026	(0.420)	-0.027	(0.391)	0.002167	(0.954)
INTERCEPT	0.033	(0.462)	0.031	(0.498)	-0.13531**	(0.022)
Year effect	Y		Y		Y	
Industry effect	Y		Y		Y	
Adj. R2	0.0679		0.0666		0.0214	
Number of obs.	2,972		2,972		1,311	

The dependent variable is cumulative abnormal return (0,+1). ENDWHUBRIS is one if past repurchase announcement return is negative. LEARNHUBRIS is one if past repurchase announcement return is positive. TBD is the number of days between two announcements. RUNUP is cumulative market adjusted return measured from -46 to -6. SIZE is the natural logarithm of market value of equity in the quarter prior to announcement quarter. B/M is book to market ratio. LEVERAGE is Total Debt/Total Assets. STDEV is the standard deviation of market-adjusted return measured from day -100 to -46. ΔSIZEPROG is the change in program size. OPTION is a dummy variable of one if the motivation to conduct a share repurchase program is related to stock options. CASHFLOW is measured as Cashflows/Total Assets. Pr (Repeat repurchase) is the estimated probability of a repeat repurchase based on the logit results presented in Table 7.
*,**,*** denote statistical significance at 10%, 5% and 1%, respectively.