Excess Funds and Agency Problems: An Empirical Study of Incremental Cash Disbursements

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This study investigates the excess funds hypothesis using samples of special dividends, regular dividend increases, and self-tender offers. All three types of firms tend to have funds in excess of industry norms before the events. The excess funds are largely nonrecurring for special dividend and self-tender offer firms and recurring for regular dividend increase firms. The analysis of the stock price reaction suggests that large incremental disbursements mitigate the agency problem associated with excess funds. In particular, the stock price reaction is positively related to excess funds for self-tender offers and large special dividends, but not for regular dividend increases (which tend to be smaller) or small special dividends.

Several studies document significant positive returns around announcements of cash disbursements [Pettit (1972), Aharony and Swary (1980), Masulis (1980), Dann (1981), Vermaelen (1981), Asquith and Mullins (1983), and Brickley (1983)]. At least two potential sources of these positive returns have been offered in the literature. First, the signaling hypothesis suggests that disbursements signal favorable information about the firm's future cash flows [Bhattacharya (1979), John and Williams (1985), and Miller and Rock (1985)]. This hypothesis assumes that managers possess valuable information about future cash flows that is not available to the public. Several studies provide support for the signaling hypothesis in the context of special dividends [Brickley (1983)], regular dividend increases [Ofer and Siegel (1987) and Healy and Palepu (1988)], and self-tender offers [Vermaelen (1981) and Dann, Masulis, and Mayers (1991)]. Second, the excess funds hypothesis asserts that disbursements may mitigate agency problems between managers and shareholders [Easterbrook (1984), Jensen (1986), and Lang and Litzenberger (1989)]. Specifically, a cash disbursement reduces funds available to managers, thereby preventing managers from investing in negative net present value (NPV) projects.

The evidence in favor of the excess funds hypothesis is scant. Lang and Litzenberger (1989) find that the abnormal returns around announcements of regular dividend increases are positively related to a

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firm's potential to overinvest, as measured by Tobin's Q, and interpret this as evidence in support of the excess funds hypothesis. However, Denis, Denis, and Sarin (1994) and Yoon and Starks (1995) question this interpretation. Since equity values equal the present value of future dividends, investors expect low dividend yield firms to increase their dividends at a faster rate than high dividend yield firms. Therefore dividend increases by high dividend yield firms, which generally also have a low Tobin's Q, are more surprising and are thus associated with stronger stock price reactions. Indeed, neither Denis, Denis, and Sarin (1994) nor Yoon and Starks (1995) find any relation between abnormal returns around dividend increase announcements and Tobin's Q after controlling for the size of the dividend change and dividend yield.

The mixed evidence on the excess funds hypothesis in the context of regular dividend changes appears to be attributable to the confounding effects of dividend increase expectations and investment opportunities. In contrast, there is no obvious link between Tobin's Q and expectations about either special dividends or share repurchases. Therefore studies of special dividends and share repurchases may offer cleaner tests of the excess funds hypothesis. However, Howe, He, and Kao (1992) find no evidence in support of the excess funds hypothesis in a study of special dividends and self-tender offers.

This study reexamines the excess funds hypothesis in the context of special dividends, regular dividend increases, and self-tender offers. While special dividends and self-tender offers are largely one-time cash disbursements, regular dividend increases typically lead to a permanently higher dividend level [Brickley (1983)]. This difference has important implications. Firms that have experienced a nonrecurring accumulation of excess cash, for example, due to asset sales, should pay out this excess cash through a special dividend or a self-tender offer rather than through an increase in the regular dividend, since the latter would also "commit" the firm to pay higher future dividends. Conversely, firms that generate excess cash flow from normal operations can more effectively curb current and future overinvestment by increasing the regular dividend than by paying a one-time special dividend or conducting a self-tender offer. Despite these two dimensions of excess funds, both Howe, He, and Kao's (1992) study of special dividends and self-tender offers and Denis, Denis, and Sarin's (1994) study of regular dividend changes employ the firm's cash flow as the only measure of excess funds.

The sample used in this study consists of 570 special dividends, 7,417 regular dividend increases, and 207 self-tender offers. Consistent with prior studies, I find a significant positive market reaction around the announcements of these incremental cash disbursements. The mean announcement period returns are 3.5%, 1.3%, and 8.0% for special

dividends, regular dividend increases, and self-tender offers, respectively.

Next, I examine the cash flows and cash levels in the years around the announcements to determine the need for the sample firms to disburse funds. Firms that announce special dividends, regular dividend increases, and self-tender offers all tend to have higher levels of undistributed cash flow prior to the events than their respective industry medians. However, the industry-adjusted cash flow is higher both before and after the event for firms that increase regular dividends than for firms that pay special dividends or conduct self-tender offers. Furthermore, all types of firms tend to increase their cash levels during the years before the event, and have cash levels above the industry levels immediately prior to the event, although these tendencies are weaker for firms that increase regular dividends. In short, while firms that employ one-time cash disbursements (special dividends and self-tender offers) have accumulated more cash prior to the event than firms that increase regular dividends, they typically generate less cash flow both before and after the event.

Finally, I relate the announcement period returns to cash level and cash flow measures. The announcement period returns around special dividends are unrelated to cash flows, consistent with Howe, He, and Kao (1992). However, the returns are positively related to cash levels, and this relation is stronger for firms with poor investment opportunities, as indicated by a Tobin's Q of less than one. Of interest, the positive relation between announcement period returns and cash levels is statistically significant only for large special dividends.[1] The announcement period returns around regular dividend increases, which generally constitute much smaller disbursements than special dividends, are not related to either cash flows or cash levels. Finally, the announcement period returns around self-tender offers are unrelated to cash flows, but related to cash levels. In particular, the returns and cash levels are significantly more positively related for firms with a low Tobin's Q than for firms with a high Tobin's Q. Overall, I interpret these findings to suggest that large incremental disbursements, that is, self-tender offers and large special dividends, effectively curb overinvestment, while the evidence for small incremental disbursements is inconclusive.

There is at least one other interpretation of the stock price evidence for self-tender offers. Managers may view a share repurchase as an alternative to real investments. If so, they are likely to repurchase shares when they perceive them to be undervalued by the market.

[1] Large special dividends are defined as those dividends scaled by the market value of equity that exceed the sample median.

Hence the positive stock price reaction may simply reflect a signal regarding the current share price. Of course, the signaling and agency explanations are not mutually exclusive. Further, while the evidence does not refute this signaling notion, the observed link between the stock price reaction, investment opportunities as proxied by Tobin's Q, and cash levels seems more consistent with agency theory. Agency theory predicts a positive relation between the stock price reaction and cash levels for low Q firms, and no relation for high Q firms, and these predictions are supported by the data. In contrast, the signaling hypothesis offers no clear prediction regarding the relation between the stock price reaction and cash levels. I also conclude that defensive self-tender offers do not explain the findings, since the results are similar if defensive self-tender offers are excluded from the analysis.

The remainder of the article proceeds as follows. The next section gives an overview of related literature. Section 2 describes the sample. Section 3 presents the empirical results. Section 4 summarizes and concludes.

1. Related Literature

1.1 Excess funds and agency theory

The interests of the claimholders and the managers of a corporation often do not coincide. For instance, Jensen (1986) argues that managers have incentives to expand the corporation beyond its optimal size because (1) this increases the resources under managerial control and (2) executive compensation is positively related to firm size. Consequently, if the corporation has substantial excess funds, managers will often invest in negative-NPV projects. This overinvestment problem can be mitigated by reducing excess funds. Easterbrook (1984, pp. 657–658) suggests that "dividends may keep firms in the capital market, where monitoring of managers is available at a lower cost, and may be useful in adjusting the level of risk taken by managers and the different classes of investors."

Using a sample of 429 regular dividend changes between 1979 and 1984, Lang and Litzenberger (1989) find evidence in support of the excess funds theory. They report that announcement period returns are significantly higher for firms with less favorable investment opportunities, as indicated by a low Tobin's Q. In contrast, Howe, He, and Kao (1992) report that the market's reaction to 55 self-tender offers and 60 special dividends announced between 1979 and 1989 is unrelated to Tobin's Q. They also develop more refined tests in which they regress the announcement period returns against the firms' preevent cash flow and an interaction term between Tobin's Q and cash flow. Such tests

may better capture the extent to which managers in the sample firms are likely to waste excess funds. However, even the refined tests fail to uncover a relation between announcement period returns and the firm's potential to overinvest. Furthermore, Denis, Denis, and Sarin (1994) argue that the negative relation between Tobin's Q and the stock price reaction to regular dividend changes may be due to a negative relation between dividend yield and Tobin's Q. Using a sample of 6,777 dividend changes between 1962 and 1988, they find support for this argument. Yoon and Starks (1995) report similar results using a sample of 4,179 dividend changes between 1969 and 1988. Following Howe, He, and Kao (1992), Denis, Denis, and Sarin also study the relation between announcement period returns and cash flow, but again they find no support for the excess funds hypothesis. Finally, both Denis, Denis, and Sarin, and Yoon and Starks find that capital expenditures increase following dividend increases and decrease following dividend decreases regardless of the level of Tobin's Q.[2] In sum, the literature offers little evidence that cash disbursements effectively deter managerial overinvestment.

1.2 Special dividends versus regular dividend increases

Brickley (1983) examines a sample of 165 special dividends and 100 regular dividend increases between 1969 and 1979, where special dividends are defined as dividends that are labeled by management as "extra," "special," or "year-end" and are not preceded by other special dividends in the prior 2 years. He finds that, ceteris paribus, the market reaction to special dividend announcements is smaller than that to regular dividend increase announcements, suggesting that regular dividend increases convey more positive information than do special dividends. Further, the dividend yield following regular dividend increases is larger than that following special dividends. Finally, while both firms that increase regular dividends and those that pay special dividends experience increases in earnings during the fiscal year of the event, only firms that increase regular dividends experience an increase during the year following the event. These results are all consistent with the idea that regular dividend increases convey a stronger signal about future prospects than do special dividends. In addition, the results suggest that regular dividends are more "sticky" than are special dividends.

Like special dividends, self-tender offers are one-time disbursements of cash. Consequently, special dividends and self-tender offers should

[2] Although capital expenditures increase following dividend increases, this does not necessarily mean that dividend increases fail to curtail investments. Investments may take other forms, such as business acquisitions, that are not included in capital expenditures. More importantly, we do not know what the investment levels would have been in the absence of dividend increases, and thus we cannot assess the true impact of dividend increases.

be used to disburse *nonrecurring* accumulations of excess funds, while regular dividend increases should be used to disburse *recurring* accumulations of excess funds (i.e., excess current and future cash flow).

2. Sample

2.1 Sample construction

The samples of special dividends and increases of regular quarterly dividends are constructed by first identifying all such events on the CRSP tapes between 1978 and 1993. For the special dividends, I require that the firms did not pay any other special dividends in the 2-year period prior to the declaration date [following Brickley (1983) and Howe, He, and Kao (1992)]. For the regular dividend increases, I require that the increase in consecutive quarterly dividends exceeds 10% and that no other type of distribution was made between the two quarterly dividends [following Denis, Denis, and Sarin (1994)]. The initial sample of self-tender offers covers the period between September 1981 and December 1994 and is taken from Lie and McConnell (1998). For all types of incremental disbursements, I require that (1) the firm is not a financial company, (2) CRSP provides sufficient return data to estimate abnormal returns, and (3) Compustat provides information on cash and cash flow for the firm. These requirements leave final samples of 570 special dividends, 7,417 regular dividend increases, and 207 self-tender offers.

2.2 Sample description

Table 1 provides descriptive statistics for the samples. The mean (median) market value of equity is \$466 million (\$49 million) for firms that pay special dividends, \$1,240 million (\$218 million) for firms that increase regular dividends, and \$1,103 million (\$304 million) for firms that conduct self-tender offers. To make the market values comparable over time, the market value of the firm's equity is divided by the level of the S&P 500 Index at the time of the announcement. The index-adjusted market value of equity also indicates that firms that pay special dividends are considerably smaller than those that increase regular dividends or conduct self-tender offers. As yet another measure of firm size, the book value of assets confirms that firms that pay special dividends typically are smaller than the other sample firms.

The mean (median) ratio of special dividends to the market value of equity is 0.062 (0.011). The corresponding figure in Howe, He, and Kao (1992) is 0.023 (0.014). Moreover, the mean (median) ratio of regular dividend increases to the market value of equity is 0.0015 (0.0011). The mean change is identical to that reported in Denis, Denis, and Sarin

Table 1
Descriptive statistics

	Special dividends		*Regular dividend increases*		*Self-tender offers*	
	Mean	Median	Mean	Median	Mean	Median
Market value of equity	466	49	1,240	218	1,103	304
Index-adjusted market value of equity	2.265	0.255	5.743	1.291	4.419	1.107
Book value of assets	602	73	1,257	239	1,751	356
Special dividend/equity value or dividend change/equity value	0.0624	0.0111	0.0015	0.0011		
Fraction of shares sought					0.207	0.182
Tender premium					0.161	0.145
Announcement period return	0.035	0.016	0.013	0.008	0.080	0.066

Descriptive statistics for the samples of special dividends, regular dividend increases, and self-tender offers. *Market value of equity* is the market value of equity in millions of dollars 5 days prior to the announcement date. *Index-adjusted market value of equity* is the market value of equity divided by the level of the S&P 500 Index on the same day. *Book value of assets* is the book value of assets in millions of dollars at the end of the fiscal year preceding the announcement. *Special dividend / equity value* is the special dividend scaled by the market value of equity 5 days prior to the announcement date. *Dividend change / equity value* is the change in regular dividend scaled by the market value of equity 5 days prior to the announcement date. *Fraction of shares sought* is the number of shares sought scaled by the number of outstanding shares prior to the offer. *Tender premium* is the premium paid over the closing price 5 days prior to the announcement. *Announcement period return* is the abnormal return during the announcement period.

(1994). Special dividends generally constitute much larger incremental disbursements than do increases in dividends, not considering the effect of special dividends and regular dividend increases on future dividends.

The mean (median) tender premium for the sample of self-tender offers is 0.161 (0.145), compared to 0.225 (0.194) and 0.168 (0.141) in Dann (1981) and Comment and Jarrell (1991), respectively. Further, the mean (median) fraction of shares sought is 0.207 (0.182), compared to 0.153 (0.126) in Dann and 0.173 (0.150) in Comment and Jarrell. If we compare the fraction of shares sought for self-tender offers to the ratio of special dividends or increases in regular dividends to the market value of equity, it is evident that self-tender offers are dramatically larger disbursements than either special dividends or regular dividend increases.

2.3 Abnormal returns

I employ a conventional event-study methodology to compute abnormal returns. The following stationary one-factor market model is assumed to represent the return generating process,

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it},$$

where R_{it} is the return on security i on day t, R_{mt} is the return on the market index on day t, and ε_{it} is a random error term. I estimate the market model over the 250 trading days ending 10 days before the

announcement, using the CRSP daily equally weighted index as a proxy for the market index. The abnormal stock return for security i on day t is defined as

$$AR_{it} = R_{it} - \left(\hat{\alpha}_i + \hat{\beta}_i R_{mt}\right),$$

where $\hat{\alpha}$ and $\hat{\beta}$ are the ordinary least squares estimates of security i's market model parameters.

For special dividends and regular dividend increases, the announcement date is defined as the declaration date provided by CRSP, and the announcement period is defined as the period from the day before the announcement date through the second day after the announcement date. I include the one day before and two days after the announcement date in the announcement period because the abnormal returns on these days are significantly different from zero, suggesting that they contain valuable information. For self-tender offers, the announcement date is identified in the *Wall Street Journal* or the *Dow Jones News Retrieval Service*, and the announcement period return is defined as the period from three days before the announcement date through the third day after the announcement date, following Comment and Jarrell (1991).[3]

For the special dividends, the mean (median) abnormal return over the announcement period is 3.5% (1.6%). In comparison, Brickley (1983) and Howe, He, and Kao (1992) report mean announcement period returns of 2.1% and 3.4%, respectively. For the regular dividend increases, the mean (median) announcement period return is 1.3% (0.8%), compared to a mean of 1.25% reported by Denis, Denis, and Sarin (1994). Finally, for the self-tender offers, the mean (median) announcement period return is 8.0% (6.6%), compared to 7.5% in Howe, He, and Kao (1992) and 8.4% in Comment and Jarrell (1991).

3. Results

3.1 Cash flows around the events

I first investigate the cash flows around the announcements of incremental cash disbursements and compare these to industry benchmarks. Table 2 presents the undistributed cash flow scaled by assets around special dividend announcements (panel A), regular dividend increases (panel B), and self-tender offers (panel C). Following Lehn and Poulsen

[3] I also experimented with different announcement periods for the three samples, but the general tenor of the results is the same. For example, using a shorter announcement period for the self-tender offers yields lower explanatory power in the cross-sectional regressions of the announcement period returns, but the coefficients of interest remain statistically significant.

Table 2
Undistributed cash flow

	Levels							Changes		
Year	−3	−2	−1	0	1	2	3	−3 to −1	−1 to 1	1 to 3
					Panel A: Special dividends					
Unadjusted										
Mean	0.062[a]	0.062[a]	0.064[a]	0.009	0.056[a]	0.046[a]	0.049[a]	0.002	−0.008[b]	−0.008[b]
Median	0.062[a]	0.061[a]	0.065[a]	0.055[a]	0.060[a]	0.054[a]	0.052[a]	0.005[b]	−0.007[a]	−0.003
Industry adjusted										
Mean	0.020[a]	0.016[a]	0.018[a]	−0.040[a]	0.011[a]	0.003	0.008	−0.004	−0.009	−0.003
Median	0.008[a]	0.009[a]	0.013[a]	0.001	0.007[a]	0.008[a]	0.003[b]	0.004	−0.004	−0.004
No. of sample firms	532	555	570	543	515	492	445	532	515	444
					Panel B: Regular dividend increases					
Unadjusted										
Mean	0.084[a]	0.087[a]	0.091[a]	0.090[a]	0.082[a]	0.075[a]	0.072[a]	0.007[a]	−0.009[a]	−0.010[a]
Median	0.083[a]	0.086[a]	0.089[a]	0.090[a]	0.084[a]	0.078[a]	0.075[a]	0.004[a]	−0.004[a]	−0.006[a]
Industry adjusted										
Mean	0.030[a]	0.031[a]	0.033[a]	0.033[a]	0.029[a]	0.026[a]	0.024[a]	0.007[a]	−0.004[a]	−0.005[a]
Median	0.023[a]	0.024[a]	0.027[a]	0.028[a]	0.024[a]	0.022[a]	0.019[a]	0.005[a]	−0.001[a]	−0.004[a]
No. of sample firms	5,426	6,465	7,417	7,252	6,960	6,681	6,261	5,426	6,960	6,246
					Panel C: Self-tender offers					
Unadjusted										
Mean	0.060[a]	0.067[a]	0.069[a]	0.069[a]	0.067[a]	0.041[a]	0.062[a]	0.009	−0.003	−0.007
Median	0.072[a]	0.069[a]	0.073[a]	0.073[a]	0.069[a]	0.062[a]	0.070[a]	0.003	−0.006	−0.004
Industry adjusted										
Mean	0.013	0.021[a]	0.024[a]	0.021[a]	0.021[b]	−0.003	0.013[b]	0.011	−0.003	−0.011
Median	0.018[a]	0.019[a]	0.021[a]	0.022[a]	0.022[a]	0.009	0.018[a]	0.003	−0.003	−0.006
No. of sample firms	200	205	207	197	179	169	156	200	179	153

Mean and median levels and changes of undistributed cash flow scaled by total assets in the years around announcements of special dividends, regular dividend increases, and self-tender offers. Year 0 is defined as the fiscal year of the announcement. *T*-tests and Wilcoxon signed-rank tests are used to test the hypotheses that the means and medians are equal to zero, respectively. Industry-adjusted figures are the paired differences between the sample firms and their industry medians. [a] and [b] denote significance at the 1% and 5% levels, respectively.

(1989), Howe, He, and Kao (1992), and Denis, Denis, and Sarin (1994), undistributed cash flow is defined as operating income before depreciation minus interest expenses, taxes, and dividends. The special dividend firms typically generate cash flow of 6% to 7% of assets in the years before the announcement, and this is 1% to 2% higher than the medians for their respective industries. In the following years, cash flow decreases slightly, such that it is barely above the industry norm. The regular dividend increase firms typically generate cash flow scaled by assets of 9% before the announcement, and this is 3% higher than the medians for their respective industries. Despite the increase in regular dividends, and a corresponding decrease in undistributed cash flow over the next years, cash flow continues to be between 2% and 3% above the industry medians in the years following the announcement. Lastly, the self-tender offer firms generate a preannouncement cash flow of 7% of assets, which is roughly 2% higher than the industry peers. Cash flow seems fairly stable over the next couple of years, before it drops to levels closer to the industry norm.

A potential weakness associated with the undistributed cash flow measure developed by Lehn and Poulsen (1989) is that it ignores cash

disbursements through share repurchases. To alleviate this, I developed a cash flow measure that incorporates the value of shares repurchased by the firm. Using this measure yields somewhat lower industry-adjusted cash flows than those reported in Table 2 for all three samples, suggesting that the sample firms typically repurchase more shares than their industry peers. For example, the revised mean (median) industry-adjusted cash flow in year -1 is 0.013 (0.012) for special dividends, 0.029 (0.026) for regular dividend increases, and 0.015 (0.016) for self-tender offers. More importantly, the cash flow in years 0 and 1 for firms that conduct self-tender offers is considerably lower than that reported in Table 2, reflecting the value of the self-tender offers. In particular, the revised mean (median) industry-adjusted cash flow for self-tender offer firms is -0.142 (-0.105) in year 0 and -0.019 (0.005) in year 1.

In sum, the evidence presented thus far suggests that firms that disburse cash typically generate more cash flow than their industry norms before the disbursement year. Further, firms that increase regular dividends generate more cash flow prior to the event than do firms that pay special dividends or conduct self-tender offers. In addition, regular dividend firms continue to generate more cash flow than the other sample firms for at least 3 years after the event.

3.2 Cash levels around the events

Previous empirical studies of the excess funds hypothesis in the context of incremental cash disbursements focus on undistributed cash flow as the indicator of excess funds. However, firms may have accumulated substantial cash levels despite low cash flows from normal operations. These cash accumulations may arise from strong operating cash flows in the past or recent extraordinary cash flows, for example, liquidation of assets.

Table 3 presents the cash and cash equivalents scaled by assets around special dividend announcements (panel A), regular dividend increases (panel B), and self-tender offers (panel C). In the year preceding special dividends, firms have a mean (median) cash level of 14.6% (8.8%) while the industry-adjusted mean (median), that is, the difference between the cash levels of the sample firms and the median cash levels of their respective industries, is 7.9% (3.4%). The numbers further indicate a significant increase in cash levels prior to the event year, followed by a decline after the event year. Overall the cash levels of special dividend firms appear to reach a peak immediately prior to the event, at which point the cash levels are substantially above the industry norm. These accumulations of cash may host agency problems. Alternatively, because special dividend firms tend to be small, they may require above average cash levels to conduct their ordinary business.

Table 3
Cash and cash equivalents

	Levels							Changes		
Year	−3	−2	−1	0	1	2	3	−3 to −1	−1 to 1	1 to 3
					Panel A: Special dividends					
Unadjusted										
Mean	0.127[a]	0.127[a]	0.146[a]	0.146[a]	0.135[a]	0.130[a]	0.126[a]	0.021[a]	−0.009[b]	−0.007
Median	0.076[a]	0.079[a]	0.088[a]	0.088[a]	0.078[a]	0.076[a]	0.069[a]	0.005[a]	−0.003	−0.002
Industry adjusted										
Mean	0.060[a]	0.060[a]	0.079[a]	0.081[a]	0.070[a]	0.065[a]	0.057[a]	0.020[a]	−0.008	−0.009
Median	0.017[a]	0.017[a]	0.034[a]	0.038[a]	0.024[a]	0.023[a]	0.014[a]	0.011[a]	0.001	−0.004
No. of sample firms	536	560	570	545	517	494	445	536	517	445
					Panel B: Regular dividend increases					
Unadjusted										
Mean	0.096[a]	0.098[a]	0.100[a]	0.098[a]	0.091[a]	0.090[a]	0.089[a]	0.006[a]	−0.009[a]	−0.002[a]
Median	0.062[a]	0.062[a]	0.064[a]	0.060[a]	0.055[a]	0.052[a]	0.050[a]	0.001[a]	−0.005[a]	−0.002[a]
Industry adjusted										
Mean	0.027[a]	0.029[a]	0.032[a]	0.030[a]	0.024[a]	0.020[a]	0.018[a]	0.005[a]	−0.008[a]	−0.006[a]
Median	0.003[a]	0.004[a]	0.007[a]	0.004[a]	0.001[a]	−0.001[a]	−0.002[a]	0.003[a]	−0.004[a]	−0.003[a]
No. of sample firms	5,439	6,474	7,417	7,257	6,975	6,702	6,276	5,439	6,975	6,273
					Panel C: Self-tender offers					
Unadjusted										
Mean	0.107[a]	0.120[a]	0.126[a]	0.109[a]	0.088[a]	0.080[a]	0.083[a]	0.017[b]	−0.033[a]	−0.001
Median	0.060[a]	0.065[a]	0.071[a]	0.051[a]	0.043[a]	0.036[a]	0.038[a]	0.005[b]	−0.022[a]	−0.002
Industry adjusted										
Mean	0.042[a]	0.054[a]	0.056[a]	0.040[a]	0.024[a]	0.017[b]	0.022[b]	0.013	−0.028[a]	0.001
Median	0.007[a]	0.010[a]	0.020[a]	−0.002	−0.007	−0.007	−0.008	0.004	−0.020[a]	0.003
No. of sample firms	200	206	207	199	181	170	158	200	181	157

Mean and median levels and changes of cash and cash equivalents scaled by total assets in the years around announcements of special dividends, regular dividend increases, and self-tender offers. Year 0 is defined as the fiscal year of the announcement. *T*-tests and Wilcoxon signed-rank tests are used to test the hypotheses that the means and medians are equal to zero, respectively. Industry-adjusted figures are the paired differences between the sample firms and their industry medians. [a] and [b] denote significance at the 1% and 5% levels, respectively.

Panel B of Table 3 indicates that the general cash level trend for firms that increase regular dividends is similar to that reported for special dividend firms, although notably less pronounced. The mean (median) cash level is 10.0% (6.4%) in the year prior to the announcement, and the industry-adjusted mean (median) is 3.2% (0.7%). Further, there is a modest and statistically significant increase in the cash level in the prior years, followed by decreases in the subsequent years. These results suggest that while firms that increase regular dividends may have agency problems associated with excess cash accumulations, any such problems are less severe than for firms that pay special dividends.

Finally, panel C shows that the mean (median) cash level for firms that conduct self-tender offers is 12.6% (7.1%) prior to the announcement year, which is 5.6% (2.0%) higher than the industry median. The panel further indicates a substantial reduction in the cash levels from year −1 to year 1, such that only the mean cash level, but not the median cash level, is above the industry norm from year 1 onward.

The decreases in cash levels after special dividends and self-tender offers are surprisingly moderate when compared to the size of these

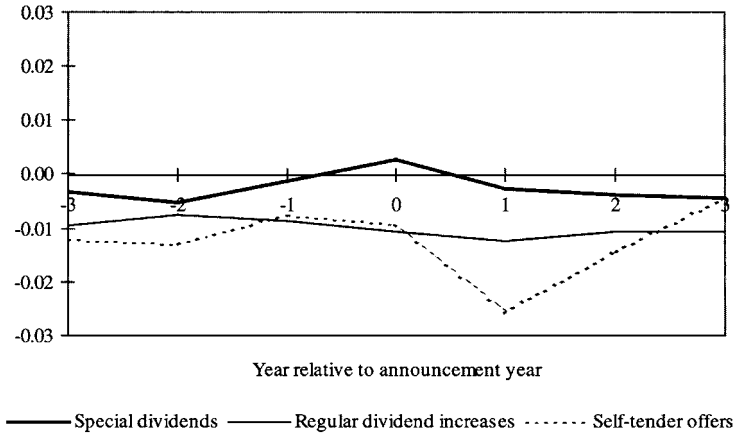

Figure 1
Mean levels of extraordinary cash flows
Extraordinary cash flow is defined as sales of property, plant, and equipment minus business acquisitions scaled by total assets. Year 0 is the fiscal year of the announcement. The medians are zero for all three types and for all years.

disbursements. The mean (median) decrease between years -1 and 1 is only -0.009 (-0.003) for special dividend firms and -0.033 (-0.022) for self-tender offer firms. The decreases during the announcement year are even smaller, but are not necessarily representative since the actual payout often takes place after the fiscal year of the announcement. The observed decreases may, however, underestimate the true effect of the disbursements on excess funds for at least two reasons. First, the effect on cash levels may be partially disguised. In particular, the effect may be contaminated by an opposite effect from either ordinary cash flows (as suggested by the results in Table 2) or extraordinary cash flows immediately before the event. Figure 1 shows the mean extraordinary cash flows for the sample firms, where extraordinary cash flows are defined as sales of plant, property, and equipment minus business acquisitions, scaled by total assets (capital expenditures are not included in this measure). The extraordinary cash flows tend to peak during the announcement years for firms that pay special dividends, but their levels are rather modest. Further, they are only positive during the announcement year for special dividend firms. (The medians are zero for all three types and for all 7 years.) In comparison, the mean of the industry medians hovers between 0.004 and 0.006 for all years and for all three samples, and the median hovers between 0.001 and 0.002.[4] The second

[4] I identified 37 announcements of asset sales in the days around the special dividend announcements. Most of these announcements refer to sales of assets that commenced at an earlier point in time, and many of them are completed by the time of the special dividend announcement. Excluding these observations has no material impact on the regression results reported later.

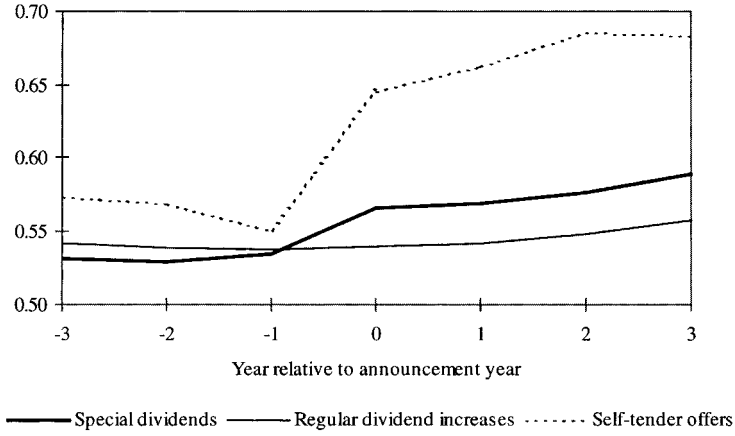

Figure 2
Mean debt ratios
The debt ratio is defined as total liabilities scaled by total assets less cash and cash equivalents. Year 0 is the fiscal year of the announcement. Median ratios exhibit a similar pattern.

reason why the effect on excess funds may be underestimated is that disbursements may be partially financed with new debt. Figure 2 shows that the mean debt ratios indeed tend to increase around disbursements. The debt ratio is defined as total liabilities scaled by total assets less cash and cash equivalents. I subtract the cash level from total assets to exclude the effect of cash reductions associated with the dividends and self-tender offers on the debt ratios. Although the increase is most pronounced for firms that conduct self-tender offers, all three samples exhibit a statistically significant increase at the 0.01 level from year -1 to year 1. The median ratios exhibit a similar pattern and are not presented here. As a comparison, the mean of the industry medians is between 0.60 and 0.63 for all years and for all samples, while the median is between 0.59 and 0.63.[5]

Taken together, the evidence indicates that firms that pay special dividends, increase regular dividends, or conduct self-tender offers all

[5] I also adjusted total assets for net sales (sales of property, plant, and equipment minus acquisitions), but the debt ratio patterns (not reported here) remain similar. Finally, I examined the ratio of the change in liabilities from year -1 to year 0 to the value of the cash disbursement to get a sense of the portion of the disbursement that was financed with debt. Of course, total debt may change for other reasons during the relevant period. The ratio is therefore noisy, especially for small disbursements, for which the numerator can be much larger than the denominator. The median ratio equals 0.54 for self-tender offers, indicating that a little more than 50% of the typical self-tender offer is financed with debt. Further, the median ratio is 4.01 for special dividends, indicating that it contains too much noise to be interpreted as the fraction of the disbursement that is debt financed. I did not calculate this ratio for regular dividend increases, since the increases only represent a small portion of the dividends paid during the period.

tend to have funds in excess of their industry norms. However, the source of the excess funds appears to differ among the types of firms. The excess funds are mostly nonrecurring for firms that pay special dividends or conduct self-tender offers, transactions that can be viewed as one-time cash disbursements. Conversely, the excess funds are mostly recurring for firms that increase regular dividends.

3.3 Determinants of the abnormal returns

As noted earlier, the mean announcement period returns for special dividends, regular dividend increases, and self-tender offers are 3.5%, 1.3%, and 8.0%, respectively, suggesting that the capital market perceives such announcements as favorable news. In this section I examine whether firms with potentially large agency problems associated with excess funds before the announcement also experience larger announcement period returns than do firms with small agency problems.

3.3.1 Special dividends. Table 4 presents cross-sectional regressions of the announcement period returns around special dividends. The regression specifications include three control variables: the special dividend as a fraction of market value of equity, the index-adjusted market value of equity, and the dividend yield. The size of the dividend is included in the regression models because Denis, Denis, and Sarin (1994) and Yoon and Starks (1995) document that the magnitude of dividend changes is positively related to announcement period returns. Adjusted market value of equity is included because Yoon and Starks find that firm size is negatively related to announcement period returns for dividend changes. Finally, dividend yield is included to control for potential tax effects and the surprise content of dividend announcements (Yoon and Starks and Denis, Denis, and Sarin). Only the coefficient on the fraction of special dividend is statistically significant at conventional levels. This coefficient is approximately 0.17, with p-values below .01.

The excess funds hypothesis posits that shareholders of firms with both low investment opportunities and considerable excess funds should benefit the most from special dividends. Regression model 4a includes a variable for cash flow and an interaction variable between cash flow and an indicator variable that equals one if Tobin's Q, as measured in McConnell and Servaes (1990), is less than one (*Low Q*).[6] I use Tobin's Q as a proxy for the firm's investment opportunities and *Low Q* as an indicator of firms with poor investment opportunities. Consistent with

[6] Following McConnell and Servaes (1990) and Servaes (1991), the measure of Tobin's Q is computed using the Lindenberg and Ross (1981) algorithm and the specific assumptions of Hall, et al. (1988).

Table 4
Regression of announcement period returns for all disbursements

	Special dividends		Dividend increases		Self-tender offers	
	4a	4b	4c	4d	4e	4f
Intercept	0.032	0.009	−0.001	0.000	−0.004	−0.001
	(0.000)	(0.134)	(0.561)	(0.732)	(0.797)	(0.941)
Special dividend/equity value or dividend change/equity value	0.176	0.163	2.904	2.880		
	(0.000)	(0.000)	(0.000)	(0.000)		
Index-adjusted market value of equity	−0.186	−0.129	−0.107	−0.102	−0.872	−0.658
	(0.342)	(0.499)	(0.002)	(0.004)	(0.175)	(0.296)
Dividend yield	−0.127	−0.081	0.353	0.330		
	(0.363)	(0.543)	(0.000)	(0.000)		
Dutch auction					0.026	0.027
					(0.013)	(0.009)
Fraction of shares sought					−0.061	−0.077
					(0.122)	(0.046)
Tender premium					0.540	0.543
					(0.000)	(0.000)
Cash flow	−0.083		0.011		−0.013	
	(0.121)		(0.419)		(0.882)	
Low Q × cash flow	0.019		−0.016		0.124	
	(0.806)		(0.240)		(0.272)	
Cash		0.070		0.003		−0.082
		(0.006)		(0.655)		(0.062)
Low Q × cash		0.113		0.006		0.188
		(0.001)		(0.531)		(0.000)
Adjusted R^2	0.084	0.134	0.040	0.040	0.410	0.443
Number of observations	570	570	7,417	7,417	207	207

Cross-sectional regression of the abnormal announcement period returns for special dividends, regular dividend increases, and self-tender offers. *Special dividend / equity value* is the special dividend scaled by the market value of equity 5 days prior to the announcement date. *Dividend change / equity value* is the change in regular dividend scaled by the market value of equity 5 days prior to the announcement date. *Index-adjusted market value of equity* is defined as the market value of equity (in billions) divided by the level of the S&P 500 Index 5 days prior to the announcement. *Dividend yield* is the total dividend payments during the year prior to the announcement divided by the market value of equity 5 days prior to the announcement. *Dutch auction* is an indicator variable that equals one if the self-tender offer is a Dutch auction. *Fraction of shares sought* is the number of shares sought scaled by the number of outstanding shares prior to the offer. *Tender premium* is the premium paid over the closing price 5 days prior to the announcement. *Cash flow* is the operating income before depreciation minus interest expenses, taxes, preferred dividends, and common dividends, all scaled by total assets. *Cash* is cash and cash equivalents scaled by total assets. *Low Q* is an indicator variable that equals one if Tobin's Q is less than one, where Tobin's Q is estimated using the procedure in McConnell and Servaes (1990). (p-values are given in parentheses.)

the results reported in Howe, He, and Kao (1992), the coefficients on these variables are statistically insignificant. Consequently, the relatively small sample size of 60 special dividends does not appear to explain the lack of statistical significance in Howe, He, and Kao.[7]

The evidence discussed in Sections 3.1 and 3.2, however, suggests that the major source of excess funds in special dividend firms is the

[7] To test for robustness, I also included the *Low Q* indicator variable in the regression specifications. The coefficient on this variable is statistically insignificant, and the inclusion of this variable has a trivial impact on the other coefficients.

cash level rather than the cash flow. Therefore model 4b replaces cash flow with cash level as a proxy for excess funds. The results show that announcement period returns are higher when the cash level prior to the event is high, as indicated by the positive coefficient associated with the cash variable ($p < .01$). Furthermore, the coefficient on the interaction variable between the cash level and *Low Q* is positive and statistically significant at the .01 level, suggesting that the positive relation between preannouncement cash levels and announcement period returns is stronger when the firm's investment opportunities are low. These relations are also robust to the inclusion of the *Low Q* indicator variable (not reported), although the statistical significance drops somewhat due to multicollinearity among the independent variables. In other words, the market responds particularly favorably to special dividend announcements when the announcing firm has potentially large agency problems, as indicated by substantial cash levels but poor investment opportunities, that may be mitigated by a reduction of the cash level.

3.3.2 Regular dividend increases. Models 4c and 4d for regular dividend increases are analogous to models 4a and 4b. The coefficient on the dividend change scaled by equity value is statistically significant ($p < .01$), and it is more than 15 times larger than the corresponding coefficient for special dividends, perhaps reflecting the permanent nature of regular dividend increases relative to special dividends. Further, the coefficient on dividend yield is positive and statistically significant at the .01 level, consistent with Bajaj and Vijh (1990) and Denis, Denis, and Sarin (1994). The fact that the dividend yield is statistically significant only for regular dividend increases and not for special dividends is consistent with the notion that dividend yield is a proxy for the surprise content in a regular dividend increase announcement, but not in a special dividend announcement. In particular, while low dividend yield firms are more likely to increase their regular dividends than high dividend yield firms, it is not clear that low dividend yield firms are more or less likely to pay a special dividend than high dividend yield firms. In contrast, the results seem inconsistent with Bajaj and Vijh's argument that the positive relation between dividend yield and the stock price reaction to announcements of regular dividend changes is attributable to the existence of dividend clienteles, as this argument would predict a similar relation between dividend yield and the stock price reaction to special dividend announcements.

The coefficients on cash flow and the interaction variable between cash flow and *Low Q* in model 4c are statistically insignificant. While the coefficient on the indicator variable is marginally significant with a p-value of .06 (not reported) when *Low Q* is included in the regression specification, the negative sign of the coefficient is contrary to the

excess funds hypothesis. Although these results are consistent with the results of Denis, Denis, and Sarin (1994), they are still surprising. The cash flows generated by these firms suggest that managers have the potential to invest in unprofitable projects. The evidence suggests that the market does not perceive the regular dividend increases to effectively reduce overinvestment, perhaps because the incremental disbursements are too small relative to the excess funds or because the firms that increase regular dividends already distribute cash to mitigate overinvestment.

The coefficients on the cash level and the interaction variable between the cash level and *Low Q* are also statistically insignificant (model 4d). These results are in stark contrast to the corresponding coefficients for the special dividend firms. This difference in results may be attributable to the low cash levels carried by regular dividend increase firms relative to those carried by special dividend firms or the small incremental disbursements associated with regular dividend increases relative to special dividends.

3.3.3 Self-tender offers. Lastly, models 4e and 4f show cross-sectional regressions of the announcement period returns for the self-tender offer sample. The control variables include the fraction of shares sought, the tender premium, the index-adjusted market value of equity, and a dummy that equals one if the self-tender offer takes the form of a Dutch auction. Consistent with Comment and Jarrell (1991), the most significant control variable is the tender premium. The coefficient on this variable is roughly 0.54 with a p-value of less than .001.

Similar to the results for special dividends and regular dividend increases, the coefficients on cash flow and the interaction variable between cash flow and *Low Q* are statistically insignificant for self-tender offers. Most importantly, the coefficient on the interaction variable between the cash level and *Low Q* is positive and statistically significant. Model 4f indicates that this coefficient equals 0.19 with a p-value less than .001. Consequently, the abnormal returns around self-tender offer announcements and cash levels are more positively related for firms with poor investment opportunities than for firms with good investment opportunities.[8]

Overall, the evidence suggests that special dividends and self-tender offers are perceived by the stock market to reduce agency problems associated with excess cash. In particular, the stock market reaction is

[8] If the *Low Q* variable is included in model 4e, the coefficient on this variable is positive and statistically significant at the .01 level, and the coefficients on the cash flow and the interaction variable between cash flow and *Low Q* change to 0.183 ($p = .07$) and -0.275 ($p = .09$), respectively. In contrast, if the *Low Q* variable is included in model 4f, the coefficient on this variable is statistically insignificant, and the other coefficients change only marginally.

most favorable if firms announcing special dividends or self-tender offers have large cash levels coupled with poor investment opportunities. In contrast, there is no evidence to indicate that the stock market perceives increases in regular dividends to mitigate the same agency problems.

3.4 Small versus large incremental disbursements

As noted earlier in Section 2.2, the means (medians) of special dividends and increases in regular dividends as fractions of the market value of equity are 6.24% (1.11%) and 0.15% (0.11%), respectively, while the mean (median) fraction of shares sought in self-tender offers is 20.7% (18.2%). Some of these incremental disbursements seem too small relative to the levels of excess funds documented in Sections 3.1 and 3.2 to have a consequential effect on future investments, raising the possibility that there are alternate motives behind these events. For example, managers may employ small incremental cash disbursements to call attention to the firm rather than to mitigate agency problems [see Grinblatt, Masulis, and Titman (1984) for a discussion of this argument in the context of stock splits and stock dividends]. More attention may increase the stock price because it induces investors to reassess the future cash flows of the company [Grinblatt, Masulis, and Titman (1984)], because the stock's liquidity increases [Amihud and Mendelson (1986)], or because of higher "investor recognition" [Merton (1987)]. To investigate the possibility that only large incremental disbursements effectively mitigate agency problems, I partition each of the samples of special dividends, regular dividend increases, and self-tender offers into halves according to their size, and replicate the above analyses.

3.4.1 Special dividends. The mean (median) ratio of small special dividends to the market value of equity is 0.006 (0.005), while the mean (median) ratio of large special dividends to the market value of equity is 0.120 (0.036). Consequently, even large special dividends typically represent smaller payouts than do self-tender offers (see Table 1). The mean (median) announcement period returns are 1.18% (0.56%) and 5.86% (3.27%), for small and large special dividends, respectively. The cash flows reveal a similar trend for small and large special dividends, while the trend for cash levels is stronger for large ones. For example, the mean (median) industry-adjusted cash level in year -1 is 0.056 (0.021) and 0.103 (0.049) for small and large dividends, respectively, while the mean (median) change in cash levels from year -1 to year 1 is 0.008 (0.000) and -0.026 (-0.005) for small and large dividends, respectively.

In the cross-sectional regressions of announcement period returns (Table 5), the coefficient on the size of the special dividend is statisti-

Table 5
Regression of announcement period returns for special dividends

	Small special dividends		Large special dividends	
	5a	5b	5c	5d
Intercept	−0.008	−0.009	0.055	0.020
	(0.296)	(0.222)	(0.000)	(0.059)
Special dividend/equity value	3.680	3.810	0.151	0.130
	(0.000)	(0.000)	(0.000)	(0.000)
Index-adjusted market value of equity	−0.070	−0.080	−2.673	−1.859
	(0.548)	(0.495)	(0.032)	(0.121)
Dividend yield	0.033	0.031	−0.175	−0.090
	(0.811)	(0.822)	(0.427)	(0.665)
Cash flow	0.029		−0.237	
	(0.474)		(0.039)	
Low $Q \times$ Cash flow	−0.091		0.232	
	(0.162)		(0.117)	
Cash		0.070		0.076
		(0.676)		(0.053)
Low $Q \times$ Cash		0.113		0.162
		(0.132)		(0.001)
Adjusted R^2	0.042	0.043	0.069	0.135
Number of observations	287	287	283	283

Cross-sectional regression of the abnormal returns from the day before to 2 days after announcements of special dividends. A special dividend is defined as large if the special dividend scaled by market value of equity exceeds the sample median; otherwise it is defined as small. *Special dividend / equity value* is the special dividend scaled by the market value of equity 5 days prior to the announcement date. *Index-adjusted market value of equity* is defined as the market value of equity (in billions) divided by the level of the S&P 500 Index 5 days prior to the announcement. *Dividend yield* is the total dividend payments during the year prior to the announcement divided by the market value of equity 5 days prior to the announcement. *Cash flow* is the operating income before depreciation minus interest expenses, taxes, preferred dividends, and common dividends, all scaled by total assets. *Cash* is cash and cash equivalents scaled by total assets. *Low Q* is an indicator variable that equals one if Tobin's *Q* is less than one, where Tobin's *Q* is estimated using the procedure in McConnell and Servaes (1990). (*p*-values are given in parentheses.)

cally significant for both subsamples ($p < .01$), but it is roughly 3.75 for small dividends and only 0.14 for large dividends. More interesting for the purposes of this study, the coefficients on the cash level and the interaction variable between the cash level and *Low Q* are positive and of roughly similar magnitude for small and large special dividends, but they are statistically significant only for the large special dividends. This suggests that the market perceives large special dividends to mitigate agency problems associated with excess cash levels, while the evidence on small special dividends is inconclusive.

3.4.2 Regular dividend increases. The mean (median) announcement period returns are 0.65% (0.31%) and 1.92% (1.29%), respectively, for small and large increases in regular dividends. Both the industry-adjusted cash level and cash flow reveal few differences between the two samples. Of interest, Table 6 indicates that the coefficients on dividend yield and dividend change are statistically insignificant for the small

Table 6
Regression of announcement period returns for regular dividend increases

	Small dividend changes		Large dividend changes	
	6a	6b	6c	6d
Intercept	−0.001	0.001	0.001	0.000
	(0.680)	(0.593)	(0.618)	(0.561)
Dividend change/equity value	5.673	5.139	2.758	2.765
	(0.169)	(0.213)	(0.000)	(0.000)
Index-adjusted market value of equity	−0.097	−0.089	−0.105	−0.103
	(0.063)	(0.085)	(0.029)	(0.032)
Dividend yield	0.137	0.103	0.348	0.345
	(0.271)	(0.400)	(0.000)	(0.000)
Cash flow	0.021		0.001	
	(0.232)		(0.976)	
Low $Q \times$ Cash flow	−0.010		−0.024	
	(0.633)		(0.207)	
Cash		0.001		0.005
		(0.881)		(0.556)
Low $Q \times$ Cash		0.009		0.001
		(0.600)		(0.935)
Adjusted R^2	0.002	0.002	0.043	0.043
Number of observations	3,730	3,730	3,687	3,687

Cross-sectional regression of the abnormal returns from the day before to 2 days after announcements of regular dividend increases. A dividend increase is defined as large if the dividend increase scaled by market value of equity exceeds the sample median; otherwise it is defined as small. *Dividend change / equity value* is the change in regular dividend scaled by the market value of equity 5 days prior to the announcement date. *Index-adjusted market value of equity* is defined as the market value of equity divided (in billions) by the level of the S&P 500 Index 5 days prior to the announcement. *Dividend yield* is the total dividend payments during the year prior to the announcement divided by the market value of equity 5 days prior to the announcement. *Cash flow* is the operating income before depreciation minus interest expenses, taxes, preferred dividends, and common dividends, all scaled by total assets. *Cash* is cash and cash equivalents scaled by total assets. *Low Q* is an indicator variable that equals one if Tobin's Q is less than one, where Tobin's Q is estimated using the procedure in McConnell and Servaes (1990). (p-values are given in parentheses.)

dividend change sample, but highly significant for the large dividend change sample. In fact, the adjusted R^2 is roughly 4.3% for the sample of large dividend changes, but only 0.2% for the sample of smaller dividend changes. These results question further the hypothesis of Bajaj and Vijh (1990) that the negative relation between dividend yield and the stock price reaction to dividend changes is attributable to the existence of dividend clienteles (see also Section 3.3.2). In particular, the dividend clientele hypothesis does not explain why such a relation only exists for large dividend changes. Lastly, the coefficients on cash levels and cash flows are statistically insignificant for both subsamples.[9]

[9] As noted earlier, the ratio of regular dividend increases to equity value tends to be considerably less than the ratio of special dividends to equity value and the fraction of shares sought in self-tender offers. In fact, the 99th percentile for the ratio of regular dividend increases to equity value is smaller than the median ratio of special dividends to equity value. Therefore I also partitioned the sample of regular dividend increases into two samples using the 90th percentile as the cutoff. However, the relation between the stock price reaction and excess funds measures are still similar for the two subsamples.

3.4.3 Self-tender offers. The mean (median) announcement period returns are 7.8% (6.1%) and 8.1% (7.3%), respectively, for small and large self-tender offers. The preevent industry-adjusted cash levels are higher for large than for small self-tender offers (means are 5.9% and 2.3% in year -1 for large and small self-tender offers, respectively), while the preevent industry-adjusted cash flows are slightly larger for small offers (means are 1.9% and 2.9% in year -1 for large and small self-tender offers, respectively). The cross-sectional regressions of the announcement period returns reveal fairly similar results for the two samples (Table 7). Most importantly, both samples indicate that the coefficient on the interaction variable between the cash level and *Low Q* is positive and statistically significant at the .01 level. Of interest, the coefficient on the interaction variable between cash flow and *Low Q* is positive with a *p*-value of .01 for the sample of small self-tender offers, although this coefficient is statistically insignificant for both the sample of large self-tender offers and the overall sample.

Table 7
Regression of announcement period returns for self-tender offers

	Small self-tender offers		Large self-tender offers	
	7a	7b	7c	7d
Intercept	−0.021	−0.035	−0.055	−0.050
	(0.225)	(0.061)	(0.092)	(0.105)
Dutch auction	0.000	0.000	0.055	0.064
	(0.995)	(0.972)	(0.006)	(0.001)
Fraction of shares sought	0.264	0.243	0.015	0.169
	(0.028)	(0.043)	(0.838)	(0.809)
Tender premium	0.578	0.575	0.562	0.567
	(0.000)	(0.000)	(0.000)	(0.000)
Index-adjusted market value of equity	−0.420	−0.260	−1.027	−0.315
	(0.397)	(0.600)	(0.175)	(0.843)
Cash flow	−0.159		0.186	
	(0.024)		(0.299)	
Low $Q \times$ Cash flow	0.248		0.014	
	(0.010)		(0.951)	
Cash		0.009		−0.152
		(0.842)		(0.032)
Low $Q \times$ Cash		0.208		0.250
		(0.003)		(0.002)
Adjusted R^2	0.574	0.580	0.391	0.443
Number of observations	104	104	103	103

Cross-sectional regression of the abnormal returns from 3 days before to 3 days after announcements of self-tender offers. A self-tender offer is defined as large if the fraction of shares sought exceeds the sample median; otherwise it is defined as small. *Dutch auction* is an indicator variable that equals one if the self-tender offer is a Dutch auction. *Fraction of shares sought* is the number of shares sought scaled by the number of outstanding shares prior to the offer. *Tender premium* is the premium paid over the closing price 5 days prior to the announcement. *Index-adjusted market value of equity* is defined as the market value of equity (in billions) divided by the level of the S&P 500 Index 5 days prior to the announcement. *Cash flow* is the operating income before depreciation minus interest expenses, taxes, preferred dividends, and common dividends, all scaled by total assets. *Cash* is cash and cash equivalents scaled by total assets. *Low Q* is an indicator variable that equals one if Tobin's *Q* is less than one, where Tobin's *Q* is estimated using the procedure in McConnell and Servaes (1990). (*p*-values are given in parentheses.)

3.5 Alternative agency control mechanisms

While disbursing excess cash may reduce the agency problem between managers and shareholders, there may be alternative means of controlling this problem. Jensen and Meckling (1976) argue that the agency problem is less severe when managers hold a large fraction of the outstanding shares in the company. If managers hold a small fraction, they work less vigorously or consume excessive perquisites because they bear a relatively small portion of the resulting costs. However, as suggested by Morck, Schleifer, and Vishny (1988) and Stulz (1988), there is also a potential downside to high managerial holdings. In particular, high managerial holdings can entrench management from the discipline of the market for corporate control, thereby enabling managers to better act in their own interest. Moreover, an effective board may induce managers to behave in the shareholders' interests. The empirical results of Weisbach (1988), Rosenstein and Wyatt (1990), Byrd and Hickman (1992), Lee et al. (1992), and Brickley, Coles, and Terry (1994) indicate that the presence of outsiders on the board improves the board's effectiveness. Lastly, Schleifer and Vishny (1986) argue that outside blockholders may provide an additional monitoring mechanism. Denis, Denis, and Sarin (1997b) report evidence in favor of this argument.

If effective control mechanisms prevent managers from wasting excess funds on poor projects, the relation between the stock price reaction to announcements of incremental cash disbursements and the interaction variable between cash levels and the *Low Q* indicator should be stronger for firms with poor control mechanisms. I test this hypothesis for the subsamples of self-tender offers and large special dividends. I use four indicators of poor control mechanisms. My first two indicators are *Insider holdings* $< 5\%$ and *Insider holdings* $> 25\%$, which equal one if the holdings by officers and directors are less than 5% and more than 25%, respectively. If the fraction of the firm's shares held by officers and directors is less than 5% or more than 25% [as used by, for example, Morck, Schleifer, and Vishny (1988) and Denis, Denis, and Sarin (1997b)], the interests of the managers may not be sufficiently aligned with those of the shareholders or the managers may be entrenched from external threats. My last two indicators, *Outsiders on board* $< 50\%$ and *No outside blockholder*, equal one if the fraction of outside directors on the board is less than 50% and if there are no holders of at least 5% of the firm's shares who are unrelated to management, respectively.[10]

[10] I define outside directors as directors who are not employed by the company or otherwise affiliated with the company (such as lawyers, investment bankers, and consultants). I also used cutoffs other than 50% for outside directors, including 40% and 60%, but the results are similar.

Table 8
Regression of announcement period returns for large special dividends and self-tender offers

	Large special dividends		Self-tender offers	
	8a	8b	8c	8d
Intercept	0.016	0.012	−0.003	−0.004
	(0.153)	(0.591)	(0.866)	(0.818)
Special dividend/equity value	0.128	0.134		
	(0.000)	(0.000)		
Index-adjusted market value of equity	−0.159	−0.130	−0.715	−0.095
	(0.200)	(0.345)	(0.262)	(0.894)
Dutch auction			0.029	0.031
			(0.006)	(0.003)
Fraction of shares sought			−0.078	−0.067
			(0.055)	(0.106)
Tender premium			0.537	0.529
			(0.000)	(0.000)
Cash	0.087	0.090	−0.076	−0.090
	(0.049)	(0.047)	(0.093)	(0.051)
Low $Q \times$ Cash	0.087	0.105	0.294	0.298
	(0.580)	(0.547)	(0.006)	(0.009)
Low $Q \times$ Cash $\times$ Insider holdings $< 5\%$	−0.018	−0.011	−0.072	0.108
	(0.924)	(0.961)	(0.615)	(0.523)
Low $Q \times$ Cash $\times$ Insider holdings $> 25\%$	0.165	0.116	0.035	0.065
	(0.269)	(0.504)	(0.688)	(0.500)
Low $Q \times$ Cash $\times$ Outsiders on board $< 50\%$	−0.063	−0.055	−0.161	−0.197
	(0.495)	(0.614)	(0.172)	(0.131)
Low $Q \times$ Cash $\times$ No outside blockholder	−0.085	−0.046	0.054	0.048
	(0.401)	(0.701)	(0.547)	(0.647)
Insider holdings $< 5\%$		−0.004		−0.028
		(0.878)		(0.062)
Insider holdings $> 25\%$		0.014		−0.007
		(0.516)		(0.653)
Outsiders on board $< 50\%$		−0.003		0.013
		(0.884)		(0.326)
No outside blockholder		−0.013		0.002
		(0.516)		(0.895)
Adjusted R^2	0.143	0.131	0.437	0.442
Number of observations	229	229	204	204

Cross-sectional regression of the abnormal announcement period returns for large special dividends and self-tender offers. *Special dividend / equity value* is the special dividend scaled by the market value of equity 5 days prior to the announcement date. *Index-adjusted market value of equity* is defined as the market value of equity (in billions) divided by the level of the S&P 500 Index 5 days prior to the announcement. *Dutch auction* is an indicator variable that equals one if the self-tender offer is a Dutch auction. *Fraction of shares sought* is the number of shares sought scaled by the number of outstanding shares prior to the offer. *Tender premium* is the premium paid over the closing price 5 days prior to the announcement. *Cash* is cash and cash equivalents scaled by total assets. *Low Q* is an indicator variable that equals one if Tobin's *Q* is less than one, where Tobin's *Q* is estimated using the procedure in McConnell and Servaes (1990). *Insider holdings < 5%* and *Insider Holdings > 25%* are indicator variables that equal one if the holdings by officers and directors are less than 5% and more than 25%, respectively. *Outsiders on board < 50%* is an indicator variable that equals one if the fraction of independent outside directors on the board is less than 50%. *No outside blockholder* is an indicator variable that equals one if there are no holders of at least 5% of the firm's shares who are unrelated to management. (*p*-values are given in parentheses.)

Table 8 presents the regression results when I include the indicators for poor control mechanisms. All models include three-way interaction terms between the *Low Q* indicator, cash level, and each of the four indicators to test whether the relation between the stock price reaction and the interaction of *Low Q* and *Cash* is stronger for firms with poor

control mechanisms. If so, the coefficients on the three-way interaction terms should be positive. Models 8b and 8d also include the four indicators by themselves to allow for shifts in the intercepts and to test for robustness. The signs of the coefficients are mixed, and none of the coefficients are statistically significant. Consequently, there is no evidence to indicate that the market is less concerned about excess cash levels if the firm has effective control mechanisms in place. I find these results to be puzzling. Perhaps the samples are too small or too noisy to capture the underlying effects, or perhaps there is some offsetting effect yet to be identified.

3.6 Long-term stock returns

The excess funds hypothesis suggests that disbursements of funds may improve current and future investment decisions. In an efficient market, these improvements will be capitalized in the stock price immediately upon the announcement of the disbursement. However, recent empirical studies indicate that the stock price continues to drift upward for several years after announcements of self-tender offers [Lakonishok and Vermaelen (1990)], open market repurchases [Ikenberry, Lakonishok, and Vermaelen (1995)], and regular dividend increases [Michaely, Thaler, and Womack (1995) and Benartzi, Michaely, and Thaler (1997)]. This raises the possibility that the stock price does not immediately capture the full value of the improvement in investment decisions.

I estimate the abnormal stock returns over the period starting 10 days after and ending 3 years after the announcement. The abnormal stock return is estimated as the difference between the buy-and-hold return for the sample firm and the buy-and-hold return for a control firm. The control firm is a firm with similar market value of equity and book-to-market ratio as the sample firm. In particular, I first identify all firms with a market value of equity between 70% and 130% of the market value of equity of the sample firm prior to the announcement. From this set of firms, I choose the firm with the book-to-market ratio closest to that of the sample firm. According to Barber and Lyon (1997), this procedure for estimating abnormal long-term stock returns yields well-specified test statistics.

The mean 3-year abnormal stock returns are 6.5% ($p = .47$), 7.6% ($p < .01$), and 10.3% ($p = .25$) following special dividends, regular dividend increases, and self-tender offers, respectively. In comparison, Benartzi, Michaely, and Thaler (1997) find a 3-year abnormal stock return of 8.0% for a sample of regular dividend increases, while Lakonishok and Vermaelen (1990) find a 2-year abnormal stock return of roughly 9% for a sample of self-tender offers. Next, I estimate the regressions in Tables 4–7 using the long-term stock returns as the dependent variable. For the special dividend sample, the only variable that is statistically significant at the .10 level is the cash level. The

coefficient on this variable is positive and has a p-value of roughly .04. For the regular dividend increases, the coefficient on dividend yield is roughly 3 with a p-value less than .01, and the coefficient on index-adjusted market value of equity is roughly -2.5 with a p-value of .05. The other coefficients are statistically insignificant. Finally, for the self-tender offers, none of the independent variables explain a significant portion of the cross-sectional variation in long-term returns. In sum, there is scarce evidence that any improvement in investment decisions that results from the incremental disbursement is not completely capitalized at the time of announcement.

3.7 Robustness of the results

3.7.1 Excess cash measure. The use of cash levels as a measure of excess cash is somewhat naïve, since all firms need a certain level of cash. The required or "appropriate" cash level may vary greatly across firms, depending on, for example, investment opportunities, access to other sources of funds, competition, and bankruptcy costs [Harford (1997) and Opler et al. (1997)]. To determine the excess cash level for the sample firms, I regress individual firms' cash levels against their cash flow, market-to-book ratio, market value of equity, and the standard deviation of cash flows for the firms in the same two-digit industry. Next, I predict the appropriate cash level for individual firms using the estimated coefficients. Finally, I estimate the excess cash levels as the difference between the actual levels and the appropriate levels.[11] The correlation between the raw cash levels and the measure of excess cash exceeds 0.9. In light of this high correlation, it is not surprising that using the excess cash levels in the regression specification in place of the actual cash levels yields similar results for all types of incremental cash disbursements as those results reported earlier.

3.7.2 Defensive self-tender offers. Several studies suggest that self-tender offers can be used as a defense against takeover attempts [Bagnoli, Gordon, and Lipman (1989), Harris and Raviv (1988), Stulz (1988), and Bagwell (1991)]. It is conceivable that defensive self-tender offers are driving some of the earlier results. However, the conclusions would not necessarily be weakened, as the market for corporate control may simply identify and reduce potential agency problems [Denis, Denis, and Sarin (1997a)].

I define a self-tender offer to be defensive if the announcement stated that the motivation for the transaction was to deter a takeover, or

[11] This measure of excess cash suffers from several potential weaknesses. The procedure to estimate the excess cash levels implicitly assumes that firms, on average, hold optimal levels of cash. If, for example, managers systematically hold excessive amounts of cash as an insurance against financial distress, the excess cash measure may be biased. Further, because the procedure requires several steps to implement and depends on many exogenous variables, the excess cash measure is exposed to numerous sources of noise.

if there were takeover rumors in the *Wall Street Journal* or the *Dow Jones News Retrieval Service* during the 3 months prior to the announcement. Using this definition, 33 self-tender offers are classified as defensive. Next, I run regression models 4e and 4f from Table 4 separately for defensive and nondefensive self-tender offers. The results are similar for the two types. The coefficients on cash flow and the interaction between *Low Q* and cash flow are statistically insignificant for both subsamples. More importantly, the coefficient on the interaction between *Low Q* and the cash level is roughly 0.18 for both subsamples, but due to different sample sizes it is statistically significant only for the nondefensive subsample.

I also reestimate the regressions in Tables 7 and 8 without the defensive self-tender offers. The results are similar to those reported. The only difference of interest is that the coefficient on *Insider holdings* $< 5\%$ is not statistically different from zero at the .10 significance level when defensive self-tender offers are excluded. Overall there is no evidence to indicate that the earlier results are primarily attributable to defensive self-tender offers.

3.7.3 Changes in earnings and signaling. Several authors have developed signaling models that may explain the abnormal announcement returns around incremental cash disbursements [Bhattacharya (1979), John and Williams (1985), and Miller and Rock (1985)]. These models all imply that incremental cash disbursements convey favorable information about the expected cash flows of the firm. Several studies find empirical support for these signaling models [Vermaelen (1981), Ofer and Siegel (1987), Healy and Palepu (1988), and Dann, Masulis, and Mayers (1991)]. To control for any signaling effects, I first estimate the impact of the incremental cash disbursements on changes in future operating performance. Second, I include the changes in future operating performance in the cross-sectional regressions of the announcement period returns.

I measure operating performance as operating income scaled by operating assets (henceforth ROA), where operating assets are estimated as the book value of assets minus cash and marketable securities. I compare the operating performance of the sample firms to that of a sample of control firms. The control firms are required to have a similar SIC code and ROA in the fiscal year prior to the event as the original sample firms.[12] The results indicate that all sets of firms improve their

[12] For each sample firm, I identify firms with the same two-digit SIC code and ROA within 90% to 110% of the sample firm's ROA. Of the firms that meet these initial criteria, the firm with the ROA closest to that of the sample firm is chosen as the control firm. If no firms meet the initial criteria, I replicate the procedure using first a one-digit SIC code and the ROA filter, then just the ROA filter, and finally I disregard the initial criteria. See Barber and Lyon (1996) for a detailed discussion of this procedure.

operating performance during the fiscal year of the announcement relative to the control firms, and no change in performance-adjusted ROA occurs during the years after the announcements. Next, I include the changes in ROA over the periods from year -1 to year 1 and from year -1 to year 2 in the regression specifications in Table 4. The results indicate weak relations between the stock price reaction to incremental cash disbursement announcements and changes in ROA. Of particular interest for this study, the inclusion of the changes in ROA in the regression specifications has little impact on the other coefficients.

4. Conclusion

This study examines the excess funds hypothesis using large samples of special dividends, regular dividend increases, and self-tender offers. First, I assess the potential of the sample firms to overinvest by investigating the firms' levels of excess funds around the events. The results indicate that all three types of firms tend to have funds in excess of industry norms before the announcement. Such excess funds are mostly nonrecurring for firms that pay special dividends or conduct self-tender offers, and recurring for firms that increase the regular dividend. Next, I relate the stock price reaction to announcements of incremental cash disbursements to the firms' excess funds and the firms' investment opportunities, as measured by Tobin's Q. Cross-sectional regressions reveal that the stock price reaction is significantly related to excess funds and investment opportunities for self-tender offers and large special dividends.

There are two major implications of this study. First, my results are consistent with the notion that disbursements of funds can enhance shareholder value by curbing potential overinvestment by managers. Consequently, conflicts of interest between managers and shareholders may partially explain why firms disburse funds. Second, small and large disbursements may be fundamentally different. There is no evidence to suggest that small special dividends and regular dividend increases (which typically are very small relative to special dividends) affect the overinvestment problem. It is possible that small dividends, regardless of their label, are used for reasons unrelated to agency issues, for example, to call attention to the firm. Hence researchers should control for the size of the cash disbursement as they further explore the motivation for and wealth consequences of such transactions.

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