Issuing Debt to Pay Dividends

James S. Ang and Stephen J. Ciccone

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Dividend payments and debt issuances both potentially represent tools that managers can use to send signals to the market. This study examines the performance of distressed firms simultaneously sending the dividend and debt signal. Firms with annual net losses after an annual net profit are selected for the sample. The results are consistent with dividend payments sending a relative, ambiguous signal. Firms that increase or maintain their dividends show superior financial performance to those reducing or eliminating dividends. Surprisingly, firms maintaining their dividend outperform firms increasing their dividend. Debt has little effect on the strength of the signal.

I. Introduction

The payment of cash dividends has long been considered a positive signal about future firm performance (e.g., Miller and Modigliani, 1959). Likewise, issuing debt to raise new capital is also believed to be a positive event (e.g., Masulis, 1983; Myers, 1984). Because of the contractual nature of debt obligations, some believe that issuing debt represents a stronger commitment to pay out future cash versus dividends and, therefore, sends an even stronger signal (e.g., Jensen, 1989).

Recent studies have shown that dividends paid during periods of distress may be more meaningful than dividends paid during good periods (e.g., DeAngelo, DeAngelo, Skinner, 1992; Joos and Plesko, 2004). However, utilizing debt to pay dividends may provide an additional signal, potentially a stronger one than if dividends are paid without using debt.

The purpose of this study is to examine dividend payments and debt increases in periods of financial distress. Net income is used to determine distress. All firms with an annual net loss after a year with an annual net profit are selected. The testing then proceeds along two-steps. First, the dividend signal is examined alone. As dividends are paid from retained earnings, their payment in a period when no new retained earnings are generated has the potential to send a powerful signal. The second step adds debt to the analysis. Firms using debt to pay dividends may send an even more powerful signal.

The testing examines six years: two years prior to the loss, the year of the loss, and the three subsequent years. Several performance measures are examined including financial and stock return performance metrics, the dividend payment history, and the amount of debt issued.

Several findings are important. For one, dividend-paying firms are reluctant to stop their dividend payments in a loss year. Only about 15% of firms paying dividends in the year prior to the loss eliminate their dividends in the loss year, which interestingly is about the same percentage of firms that increase their dividend. About

45% of firms maintain the same dividend level in the loss year. A little over 1% of all eligible sample firms initiate a dividend in the loss year. Once dividends are eliminated, they are rarely paid again in the post period. Only about 11% of eliminating firms pay a dividend in any of the three subsequent years.

In terms of financial performance, firms maintaining or increasing their dividend perform best in the three subsequent years. These firms are more likely to return to profitability, are more likely to continue their dividend payments, and are less likely to be delisted than firms reducing or firms eliminating their dividends. Surprisingly, firms maintaining dividends do noticeably better than firms increasing dividends.

In the event year, all firms experience negative stock returns. However, firms increasing or maintaining their dividends show superior stock performance. This return superiority vanishes over the subsequent three years.

Firms initiating dividends do not perform particularly well. Their financial performance is about as good as firms reducing dividends. Their event year stock returns are relatively good, but they underperform in the three-year post period.

Almost 40% of firms issuing dividends in the loss year increase their debt-to-equity ratio by more than 10%. These firms perform very similarly to firms not increasing their debt, and there is no relation between issuing debt and future performance after controlling for dividend policy.

Overall, the results suggest that dividends provide a signal to the market, but the signal is a relative signal. Firms maintaining or increasing dividends perform better than firms reducing or eliminating their dividend, but their performance is unimpressive on an absolute level. Increases in debt have virtually no effect on the strength of the signal.

This paper is organized as follows. Section II discusses the relevant literature. Section III describes the data and the empirical methods used. Section IV presents and discusses the results. Section V concludes.

II. Literature Review

In their famous arguments, Miller and Modigliani (1958, 1961) argue that under certain strict assumptions including no taxes, no transactions costs, and no information asymmetry, dividend policy and capital structure are irrelevant to firm value. However, reasons for both are provided once the assumptions are relaxed. For example, assuming that information asymmetry does exist, dividends and debt contain information, and firms might send positive signals through dividend increases or debt issuances.

As dividends and debt each represent a method by which firms pay cash to their investors, the theories surrounding both are similar. The following paragraphs review the related literature, examining dividends first.

A. Dividends

The initiation of a dividend policy is usually considered to be a positive event in the history of a corporation. Indeed, firms paying their first dividend see their stock price increase by an average of over 3% (Asquith and Mullins, 1983; Michaely, Thaler, and Womack, 1995). The reasons why this event is positive are subject to debate. The earliest theories relied on signaling and the earlier studies, such as Asquith and Mullins (1983), usually posed no other rationale for their findings. Maintaining a dividend policy required subsequent positive cash flows, and the initiation of such a policy implied that firm managers believed they would have those cash flows in the future. Thus, managers could communicate information about future earnings through dividends better than they could otherwise.

Signaling theory has a long history. Miller and Modigliani (1959) were among the first to state that dividends might contain information about future earnings.[1] Later studies theoretically examined this issue in detail reaching the same conclusion (e.g.,

[1] Miller and Modigliani (1959) state, "In particular, whenever corporations follow a policy of stabilizing dividends … dividends will contain considerable information about X_0 [future earnings], possibly even more than X [current earnings]."

Bhattacharya, 1979; John and Williams, 1985; Miller and Rock, 1985). Of course, if dividends do serve as portents, then future earnings should be consistent with the signal. As a result, many studies exploring dividends as a signal focus on the predictive value dividend changes have on future earnings. Unfortunately for signaling theory, the empirical evidence is mixed.

Several studies do support signaling theory. Kalay (1980) contends that "forced" dividend reductions caused by a lack of cash contain no information because the reduction is not at management's discretion and, therefore, does not reflect management's opinion about future earnings. However, he finds that only 5% of dividend reductions are forced and attributes the other 95% primarily to the ability of managers to foresee the future. Brickley (1983) uses a sample of firms increasing their dividend by more than 20% and finds that earnings increase significantly in the year of and the year after the dividend increase. Yoon and Starks (1995) observe that firms increasing dividends tend to simultaneously increase their capital expenditures, consistent with dividend changes predicting future cash flows. Brook, Charlton, and Hendershott (1998) reveal that firms anticipating large, permanent cash flow increases tend to increase dividends beforehand. Nissim and Ziv (2001) use an earnings model that adjusts for measurement error and omitted variables and show that dividend changes do indicate future earnings changes.

Other studies do not support signaling theory. Watts (1973) is one of the first to argue against signaling. He contends that future earnings are related to unexpected changes in dividends, but the relationship is weak enough to render the information content of dividends trivial. Healy and Palepu (1988) find that firms initiating dividends show an increase in earnings in the following two years. However, dividend signals are not necessarily accurate; firms omitting dividends also show an increase in earnings over the next several years. DeAngelo, DeAngelo, and Skinner (1996) observe no relation between dividend changes and future earnings. They attribute their results to managerial over-optimism and a relatively minor cash commitment when increasing

dividends. Benartzi, Michaely, and Thaler (1997) find that firms increasing dividends do show increased earnings, but these increases are not unexpected based on past earnings growth rates. They also find that dividend-decreasing firms tend to show earnings increases soon after the dividend reduction. DeAngelo, DeAngelo, and Skinner (2000) demonstrate that special dividends, once important, have virtually disappeared in recent times, thus casting doubt on signaling motivations. Grullon, Michaely, Benartzi, and Thaler (2005) show that after considering non-linear patterns in earnings trends, future earnings changes are unrelated to dividend changes.

A few studies evaluate dividend payments during periods of financial distress and find results consistent with signaling. DeAngelo, DeAngelo, and Skinner (1992) explore firms with established dividend policies that suddenly have earnings losses. They find that about 50% of such firms reduce their dividend payment. In comparison, only about 1% of firms with profits reduce their dividend. They further show that loss firms that do not reduce their dividend experience better future earnings versus loss firms that do reduce their dividend. Joos and Plesko (2004) examine firms with losses and negative cash flows that increase their dividends and find that the dividends signal future profitability.

B. Debt

As the capital structure irrelevancy arguments of Miller and Modigliani (1958) did not explain practice, researchers sought other explanations. Two main branches of thought regarding capital structure developed: static tradeoff and pecking order.

The static tradeoff theory was the original retort to capital structure irrelevance (e.g., Miller and Modigliani, 1963; Robichek and Myers, 1966; Baxter, 1967; Brennan and Schwartz, 1978). In this framework, firms target an optimal capital structure based on tax advantages and financial distress disadvantages. Firms are thought to strive toward their target and can signal their future prospects by changing their

structure. Adding more debt increases firm value through the market's perception of higher tax shields or lower bankruptcy costs (e.g., Ross, 1977).

Empirical tests confirm that changing the capital structure to include more debt increases stock price. For example, Masulis (1983) reveals that firms issuing debt to retire common stock increase an average of almost 15% during the announcement period. In contrast, firms issuing common stock to retire debt lose almost 10% of their market value.

The pecking order theory, firmly established by Myers (1984) and Myers and Majluf (1984), arose as an alternative to the static tradeoff theory. In the pecking order, firms prefer internal to external financing and debt to equity. In contrast to the static tradeoff theory, no optimal capital structure is targeted. Similar to the signaling models of static tradeoff theory, information asymmetry is assumed. Debt issuances imply management believes the stock is undervalued; equity issuances imply management believes the stock is overvalued.

Recent empirical evidence has focused on which theory better explains practice. Shyam-Sunder and Myers (1999) test static tradeoff and pecking order by examining the financing deficit. Their results are inconsistent with pecking order. Fama and French (2002) find mixed results for both theories. Frank and Goyal (2003) find that the pecking order is more appropriate for larger firms in earlier time periods. In the 1990s, as more small firms appeared, the pecking order theory became less important overall. Fama and French (2005) take a different approach. Rather than examining debt issuances, they focus on equity issuances and contend that equity issuances and equity repurchases occur too often for pecking order to dominate capital structure decisions.

III. Data and Empirical Methods

All financial, dividend, and debt data is obtained from the COMPUSTAT annual files. Dividends are defined as cash dividends payable to common stockholders,

COMPUSTAT item #21. Debt is defined as Total Liabilities, captured by COMPUSTAT item #181. As is consistent with related studies, financial firms (SIC codes 6000-6999) and utilities (SIC codes 4900-4959) are excluded from the sample.

The sample selection is based on earnings (COMPUSTAT item #172). The sample selection process starts with all firms that have annual net losses after one year of annual net profits (item #172 < 0 in year *t*; item #172 > 0 in year *t-1*). A net loss is important because it is often believed to foretell a dividend reduction (e.g., DeAngelo, DeAngelo, and Skinner, 1992; Joos and Plesko, 2004). This sample can be subdivided into firms initiating dividends, increasing dividends, maintaining dividends, reducing dividends, eliminating dividends, and paying no dividends in either year. A dividend increase occurs when the absolute dividends are greater than 110% of the dividends paid in the previous year. A dividend reduction occurs when a dividend is paid but absolute dividends are less than 90% of the dividends paid in the previous year. Any firms paying dividends within a range of 90% to 110% of the previous year's dividends are considered to be maintaining dividends. A dividend elimination occurs when no dividends are paid after a year in which dividends were paid.

A debt increase is defined as when the debt-to-equity ratio increases by more than 10% versus the previous year. Debt is defined as total liabilities (item #181). Equity is defined as total equity minus retained earnings (item #216 – item #36). The conclusions remain valid if increases in debt are defined using long-term debt (item #9) to equity ratio or absolute increases in liabilities or long-term debt.

After identifying sample firms, performance is evaluated during the two years prior to, the year of, and the three years after the year of the net loss. The variables evaluated are related to financial and stock return performance. Various control variables are included in the analysis. To measure growth prospects Tobin's Q is utilized. Consistent with previous studies, a proxy for Tobin's Q is defined as market

value of assets divided by book value of assets.[2] Market value of assets is computed as stock price times common shares outstanding plus book value of assets minus book value of common equity and deferred taxes. Size defined as price times shares is also used as a control variable. The testing utilizes a variety of portfolio sorts and regression models as described in the results section.

The final sample includes 9438 firm-year observations that had a net profit in year *t-1* followed by a net loss in year *t*. Of these, 7408 paid no dividends in either year and 2030 paid a dividend in at least one of those two years.

IV. Results

The discussion of the results follows a two-step process. The first set of analyses examines firms paying dividends, regardless of changes in debt levels. The second set adds debt to the analyses.

A. Dividends as Signals of Financial Performance

After all firms with net losses in year *t* are selected, firms are sorted into six categories based on their dividend level in year *t*: 1) firms initiating dividends, 2) firms increasing dividends, 3) firms maintaining dividends, 4) firms reducing dividends, 5) firms eliminating dividends, and 6) firms not paying dividends in either year *t* or year *t-1*.

Table 1 presents summary statistics. Over three-quarters of firms with losses did not pay dividends in the previous year. However, once a dividend policy is started, the policy is not given up easily. During the loss year, about as many firms increase their dividend as eliminate it. Only a quarter of the firms pay a reduced dividend, while about 60% maintain or increase their dividend level.

[2] For example, Fama and French (2005), Lamont and Polk (2002), Whited (2001), Jayaratne and Morgan (2000), and Opler and Titman (1993) define Tobin's Q in this manner.

Dividend policies appear related to firm size. Firms that increase, maintain, or reduce their dividend are the largest firms in the sample, while firms that pay no dividends or eliminate dividends are the smallest. Thus, size is an important control variable as firms sending a dividend signal, even a reduced one, receive any benefits associated with being a large firm.

Apart from size, dividend-paying firms in year *t* tend to be value firms. They have higher book-to-market ratios and lower Q's. Dividend paying firms also tend to have greater retained earnings, although surprisingly lower levels of cash. Firms paying no dividends have the highest level of cash-to-assets. Firms maintaining dividends have the lowest level.

Table 2 examines various performance measures during the event period including return on assets (ROA), several earnings- and dividend-related statistics, and the percent of firms delisting in the post-event period. Evaluating these performance measures provides important clues about dividend signaling hypotheses. For consistency with dividend signals, future ROA should be superior for firms paying dividends during periods of financial distress. In addition, firms paying dividends should have different levels of performance when comparing across categories. For example, firms increasing dividends are expected to perform better than firms maintaining dividends.

In year *t-1*, the highest mean ROA is found in firms not paying dividends in that year: firms initiating dividends and firms not paying dividends. The similarity of their ROAs is convenient because their performance in year *t* and beyond can be compared with both groups starting from the same base. Consistent with the signaling hypothesis, firms initiating dividends perform better in subsequent years than firms paying no dividends. By year *t+2*, most initiating firms have profits. In contrast, the profit in year *t-1* for firms paying no dividends is an anomaly. After their loss in year *t*, firms paying no dividends continue to have mean and medians ROAs that are negative for the rest of the event period. However, despite their relative superiority, the

performance of initiating firms is unimpressive in an absolute sense. Although the median ROA is positive in years *t+2* and *t+3*, the mean ROA of initiating firms never returns to profitability. In addition, initiating firms struggle to maintain their dividend policy: less than 40% pay a dividend in year *t+1* and this number declines in year *t+2* and *t+3*. Thus, it appears the dividend signal sent by initiating firms is rather ambiguous. They signal better performance than their peers not initiating dividends, but they do not necessarily signal "good" performance in the future. Interestingly, the performance of dividend initiating firms is similar to dividend reducing firms.

A critical comparison is made among firms with dividend policies in year *t-1*. During the loss year, these firms have the option to eliminate their dividend, although as mentioned before, few do. Instead, firms are about as likely to increase their dividend as they are to eliminate it.

Firms increasing their dividend do well, but they are not the best performing firms. That distinction belongs to firms maintaining their dividend. These firms have the highest mean ROA in the three years subsequent to year *t* and the highest median ROA in years *t+2* and *t+3*. Maintaining firms also have the highest proportion of firms with positive earnings and are the most likely to continue to maintain their dividend policy with over three-quarters paying dividends in each of the three subsequent years. They are also the least likely to delist.

The order of performance for the increasing, reducing, and eliminating firms is as expected under the signaling hypothesis. Firms increasing their dividends do better than firms reducing their dividends (although the performance gap closes by year *t+3*), who do better than firms eliminating their dividends. The performance of eliminating firms is similar to the performance of the "No Dividend" subsample.

Overall, we are left with two curiosities. One, firms that initiate dividends do about as well as firms that reduce dividends. Two, firms that maintain dividends do better than firms that increase dividends. In addition, the signal is not absolute, but relative. It does not necessarily indicate future performance will be as good as past

performance. Even among the maintaining firms, the best performing subsample, less than 50% have earnings in year *t+3* that are greater than earnings in year *t-1*.

Table 3 presents the results of a logistical regression analysis. Although many approaches can be employed, the analysis presented utilizes several dummy variables as the dependent variables. In the various regressions, the dependent variables equal one if a firm has positive earnings in years t+1, t+2, and t+3, positive earnings in all three years, and a delisting. Independent variables include the control variables size, Tobin's Q, retained earnings-to-assets, and cash-to-assets.

Five dividend policy dummy variables are included. They are set equal to one as applicable when a firm initiates, increases, maintains, reduces, or eliminates its dividend. Thus, the intercept captures firms not paying dividends.

The coefficients of the control variables suggest that larger, value firms are more profitable and have fewer delistings. Additionally, firms with higher levels of retained earnings and lower levels of cash are more profitable. Firms with higher levels of both retained earnings and cash have fewer delistings.

When examining profitability, the dividend policy dummy variable coefficients indicate that firms increasing or maintaining dividends perform better in terms of positive earnings than firms not paying dividends. This superior performance continues for all three years subsequent to the event year. No other dividend variables are significant with the exception of the dividend reduction variable in year *t+3*, which is positively significant.

When examining delistings, firms maintaining dividends have significantly fewer delistings than firms not paying dividends. All other dividend dummy variable coefficients are insignificant.

When comparing across dividend policy dummy variables, relative patterns emerge (not tabulated). For example, the coefficients of firms maintaining dividends are always statistically different from those of firms reducing or eliminating dividends and almost always statistically different from those of firms increasing dividends (exception

is year *t+1* earnings). The coefficients of firms reducing dividends are not statistically different from those of firms eliminating dividends except when examining year *t+3* earnings.

B. Dividends and Stock Returns

Table 4 presents raw stock returns by the dividend policy subsamples. As year *t* is the event year, stock return performance is evaluated in a loss year simultaneously with dividend policy. Stock performance three years subsequent to the event year and two years prior to the event year are also evaluated.

In the year prior to the event year, firms initiating or increasing dividends are the best performing firms. They are also the only firms with median returns that are positive.

All firms experience negative returns during the event year. However, firms that initiate, increase, or maintain dividends show relatively superior performance. The performance of these firms is similar and the ranking changes depending on whether the mean or median is used.

The worst performers are firms that eliminate dividends. The median return of these firms is about -40%. Firms that reduce dividends and do not pay dividends also experience poor performance, with median returns near -25% for these subsamples.

In the following three years, return performance is not easily defined. Firms increasing, maintaining, and reducing dividends perform well, all having positive median cumulative returns over the three years. Firms initiating, reducing, eliminating, and not paying dividends show considerable variance. For example, in the initiating firm subsample, the median cumulative return in years *t+1*, *t+2*, and *t+3* of -19.84% is much lower than the mean return of 19.58%.

Table 5 presents the results of a regression analysis using stock returns as dependent variables. Different returns are used including returns in year *t*, year *t+1*, year *t+2*, year *t+3*, and years *t+1* through *t+3*. The regression controls for size, book-to-

market ratio, and prior year stock return. The five dividend policy dummy variables are used as in Table 3. The intercept includes the effects of the "No Dividend" subsample.

The results show that the control variables influence stock returns. Smaller firms and value firms perform better as expected. Firms with higher prior year stock returns underperform.

All dividend policy variables are significant in year *t* with the exception of "Dividend Initiation." Consistent with signaling, firms increasing and maintaining their dividend policy perform better than firms not paying dividends. Firms reducing and eliminating dividends do significantly worse than firms not paying dividends. These conditions hold even when current year ROA is included in the regression.

After year *t*, the results show that the firms paying dividends in year *t* perform relatively poorly compared to firms not paying dividends. For example, when examining cumulative returns from years *t+1* through year *t+3*, the dividend policy variable coefficients are negative for initiating, increasing, and maintaining firms, indicating underperformance versus the "No Dividend" subsample.

C. Dividends and Debt as Signals of Financial Performance

Table 6 presents summary statistics by debt and dividend policy. The dividend policy variables are the same as in the previous discussion. A debt increase is defined as when the debt-to-equity ratio increases by more than 10% from year *t-1* to year *t*. Firms increasing debt comprise about 40% of the sample, and all dividend policy subsamples remain individually close to that figure.

Firms increasing debt have lower year *t-1* debt-to-equity levels. Although there are slight differences in the other measures (for example, firms increasing debt are slightly smaller), the differences appear primarily related to dividend policy rather than debt levels changes. For example, as in Table 1, firms eliminating or not paying dividends are the smallest firms.

Table 7 reports several financial performance measures separating firms by dividend and debt policy. The results suggest that firms issuing debt to pay dividends do not outperform firms not increasing their debt. Across all debt policy subsamples, performance is similar and no patterns emerge.

Table 8 repeats the regression analysis of Table 3, but adds two variables: a debt increase dummy variable and a debt increase times a dividend paid variable. The debt increase variable is equal to one if a firm increases its debt-to-equity ratio by more than 10%. The debt increase times dividend paid variable is equal to the debt increase dummy variable times another dummy variable equal to one if a dividend was paid in year *t*. Thus, this latter variable controls for a simultaneous dividend payment and debt increase.

The results indicate that increasing debt or using debt to pay dividends in periods of distress does not provide an indication of future performance. An exception is when using delisting as the dependent variable. In this case, firms increasing debt have a significantly greater chance of delisting in the three years after year *t*. The combination of debt and dividends has no significant effect on delistings.

D. Dividends, Debt, and Stock Returns

Table 9 presents stock returns by dividend and debt policy portfolios. Although in year *t* there is virtually no difference between firms that issue debt and firms that do not, in the subsequent three years, firms issuing debt appear to underperform those not issuing debt. These differences are more apparent in the dividend policy subsamples than in the "No Dividend" subsample.

Table 10 presents the results of a regression analysis using stock returns as dependent variables. As in table 5, various control variables and dividend policy variables are included as independent variables. The regression also includes a debt increase dummy variable equal to one if the firm increased its level of debt and a debt increase x dividend paid variable. This latter variable equals one if a firm both

increased its debt and paid a dividend in the event year. The models confirm the results of table 9. Debt increases have no influence on stock returns in the event year.

V. Conclusions

This study evaluates the signaling hypothesis for dividends and debt issuances during a period of financial distress defined by net losses. The results of this study indicate that dividends paid during a period when they are costly to issue provide a signal to the market. Firms increasing or maintaining dividends show superior financial and event year stock performance than firms reducing or eliminating dividends. The signal, however, is a relative one. Although most increasing or maintaining firms are profitable during the three years subsequent to the loss, less than half return to their year *t-1* level of income. The signal is also inconsistent across subsamples. As an illustration, firms maintaining dividends do better than firms increasing dividends.

Debt is used to help finance about 40% of the dividend payments in a loss year. Using debt provides no additional signal to the market, and dividend policy dominates as a signal.

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Table 1: Summary Statistics by Dividend Policy

	Dividend Policy					
	Initiate	**Increase**	**Maintain**	**Reduce**	**Eliminate**	**No Dividend**
Number of Observations	114	297	860	464	298	7454
Percent of All Sample Firms	1.20	3.13	9.07	4.89	3.14	78.57
Percent of Dividend Paying (t-1) Sample	n/a	15.48	44.82	24.18	15.53	n/a
Means						
Size t-1	753.92	1303.87	1547.80	981.25	396.11	298.29
Earnings-to-Price t-1	0.13	0.08	0.07	0.08	0.08	0.11
Book-to-Market t-1	0.48	0.47	0.63	0.54	0.31	0.36
Tobin's Q t-1	1.59	1.51	1.25	1.33	2.04	1.95
Dividend Yield t-1 (%)	0.00	1.67	2.66	3.56	3.20	0.00
Dividend Yield t (%)	2.87	2.82	3.00	3.07	0.00	0.00
Cash-to-Assets t-1 (%)	14.94	9.55	6.69	8.17	11.96	17.46
Retained Earnings-to-Assets t-1 (%)	-0.14	23.55	30.24	25.07	4.66	-24.68
Debt-to-Equity t-1	7.73	8.30	7.59	8.24	7.47	3.61
Medians						
Size t-1	87.63	339.81	300.49	140.25	79.02	37.84
Earnings-to-Price t-1	0.07	0.06	0.06	0.05	0.04	0.05
Book-to-Market t-1	0.68	0.65	0.77	0.85	0.55	0.61
Tobin's Q t-1	1.21	1.23	1.12	1.06	1.35	1.30
Dividend Yield t-1 (%)	0.00	1.29	2.39	3.27	2.16	0.00
Dividend Yield t (%)	1.74	2.09	2.67	2.52	0.00	0.00
Cash-to-Assets t-1 (%)	6.09	4.73	2.82	3.05	4.34	8.26
Retained Earnings-to-Assets t-1 (%)	8.72	21.58	27.91	22.14	8.20	3.67
Debt-to-Equity t-1	1.92	2.78	3.26	3.36	1.88	0.98
Percent with						
Debt Increase t	54.39	55.89	42.79	35.99	48.99	48.95
Equity Increase t	44.74	44.11	19.30	27.37	36.58	29.19

This table presents summary statistics by dividend policy. All firms with an annual loss (net income) in year *t-1* followed by an annual profit in year *t* are selected. These firms are then sorted into one of six portfolios based on their dividend policy. "Initiate" contains firms that did not pay dividends in year *t-1*, but did pay them in year *t*. "Increase" contains firms that reduced their dividend by more than 10% from year *t-1* to year *t*. "Reduce" contains firms that reduced their dividend by more than 10% from year *t-1* to year *t*. "Maintain" contains firms that kept their dividend with a 90% to 110% band from year *t-1* to year *t*. "Eliminate" contains firms that paid a dividend in year *t-1* but did not pay a dividend in year *t*. "No Dividend" contains firms that did not pay a dividend in year *t* or year *t-1*. Means and medians of selected variables are presented. Size is defined as price times shares. Earnings-to-price is defined as annual net income divided by size. Book-to-market is defined as book value of equity divided by size. Tobin's Q is defined as size plus assets minus equity, divided by assets. Dividend yield is defined as dividend over price. Cash-to-assets is defined as cash divided by total assets. Retained earnings-to-assets is defined as retained earnings divided by assets. Debt-to-equity is defined as the total liabilities divided by equity without retained earnings. All of these variables are computed at the end of fiscal year *t-1*, the year prior to the event year. Dividend yield is also computed in year *t*. A debt increase occurs when total liabilities dividend by equity without retained earnings increases by more than 10% from year *t-1* to year *t*. An equity increase occurs when equity without retained earnings increases by more than 10% from year *t-1* to year *t*.

Table 2: Financial Performance Measures by Dividend Policy

	Dividend Policy					
	Initiate	**Increase**	**Maintain**	**Reduce**	**Eliminate**	**No Dividend**
Number of Observations	113	296	859	464	298	7408
Means						
Return on Assets t-2	0.0268	0.0473	0.0421	0.0438	0.0506	-0.0261
Return on Assets t-1	0.0762	0.0687	0.0423	0.0410	0.0636	0.0738
Return on Assets t	-0.0730	-0.0728	-0.0512	-0.0856	-0.1318	-0.1690
Return on Assets t+1	-0.0594	-0.0198	-0.0041	-0.0548	-0.1237	-0.1656
Return on Assets t+2	-0.0798	-0.0251	0.0044	-0.0369	-0.1361	-0.1619
Return on Assets t+3	-0.0773	-0.0167	0.0181	-0.0098	-0.1020	-0.1378
Medians						
Return on Assets t-2	0.0256	0.0417	0.0419	0.0404	0.0464	0.0252
Return on Assets t-1	0.0420	0.0469	0.0361	0.0284	0.0319	0.0384
Return on Assets t	-0.0455	-0.0429	-0.0284	-0.0452	-0.0609	-0.0742
Return on Assets t+1	-0.0068	0.0184	0.0175	-0.0080	-0.0247	-0.0397
Return on Assets t+2	0.0123	0.0236	0.0251	0.0052	-0.0170	-0.0212
Return on Assets t+3	0.0165	0.0250	0.0304	0.0182	-0.0014	-0.0091
Percent with						
Positive Earnings t+1	47.17	61.79	65.17	45.73	40.15	36.86
Positive Earnings t+2	60.22	59.62	68.15	56.37	42.91	44.01
Positive Earnings t+3	57.47	64.16	73.06	64.29	49.76	47.54
Positive Earnings Any Year (t+1, t+2, or t+3)	80.23	83.11	90.87	80.94	70.62	70.92
Positive Earnings All Years (t+1, t+2, and t+3)	27.91	40.00	42.92	29.56	20.38	18.80
Earnings t+1 > Earnings t-1	29.25	35.71	33.13	24.02	20.45	20.24
Earnings t+2 > Earnings t-1	35.48	38.46	41.62	29.17	25.51	26.84
Earnings t+3 > Earnings t-1	40.23	41.59	46.39	39.01	25.12	30.99
Earnings All 3 years > Earnings t-1	13.95	20.00	19.62	12.98	8.06	8.92
Dividends Paid t+1	38.32	75.44	91.27	44.34	5.30	1.01
Dividends Paid t+2	30.11	66.15	82.30	40.49	7.29	1.42
Dividends Paid t+3	29.89	60.35	76.39	41.53	6.64	2.30
Dividends Paid Any Year (t+1, t+2, or t+3)	43.68	80.18	92.27	52.75	11.37	3.41
Dividends Paid All Years (t+1, t+2, and t+3)	26.44	55.51	75.17	35.44	2.84	0.30
Delisting in Any Year (t+1, t+2, or t+3)	12.50	8.65	2.53	12.37	19.84	19.33
Merging in Any Year (t+1, t+2, or t+3)	17.71	15.04	10.87	9.09	12.30	12.33

This table presents various financial performance measures by dividend policy. All firms with an annual loss (net income) in year *t-1* followed by an annual profit in year *t* are selected. These firms are then sorted into one of six portfolios based on their dividend policy. "Initiate" contains firms that did not pay dividends in year *t-1*, but did pay them in year *t*. "Increase" contains firms that reduced their dividend by more than 10% from year *t-1* to year *t*. "Reduce" contains firms that reduced their dividend by more than 10% from year *t-1* to year *t*. "Maintain" contains firms that kept their dividend with a 90% to 110% band from year *t-1* to year *t*. "Eliminate" contains firms that paid a dividend in year *t-1* but did not pay a dividend in year *t*. "No Dividend" contains firms that did not pay a dividend in year *t* or year *t-1*. Return on assets is equal to net income over total assets. Positive earnings occur when net income is greater than zero.

Table 3: Logistical Regression Analysis of Profitability and Delisting by Dividend Policy

	Coefficients (Chi-Square)				
	Positive Earnings Year t+1 (1 = profit)	**Positive Earnings Year t+2 (1 = profit)**	**Positive Earnings Year t+3 (1 = profit)**	**Positive Earnings All Years (1 = profit)**	**Delisting Year t+1, t+2, or t+3 (1 = delisting)**
Intercept	-0.34 (31.33)***	-0.13 (4.47)**	0.01 (0.84)	-1.36 (275.26)***	-0.16 (3.90)**
Size t-1	0.03 (5.62)**	0.07 (20.44)***	0.06 (16.49)***	0.08 (18.25)***	-0.35 (248.16)***
Tobin's Q t-1	-0.08 (18.05)***	-0.07 (14.91)***	-0.05 (8.88)***	-0.08 (9.26)***	0.06 (7.92)***
Retained Earnings / Assets t-1	0.16 (19.21)***	0.20 (27.15)***	0.10 (8.38)***	0.35 (21.73)***	-0.12 (8.56)***
Cash / Assets t-1	-0.82 (36.69)***	-0.96 (50.40)***	-0.99 (48.81)***	-1.24 (36.84)***	-1.06 (33.37)***
Dividend Initiation	0.09 (0.13)	0.36 (2.00)	0.07 (0.07)	-0.13 (0.14)	-0.10 (0.08)
Dividend Increase	0.81 (31.59)***	0.25 (2.91)*	0.36 (5.25)**	0.59 (13.41)***	-0.34 (1.92)
Dividend Maintain	0.84 (92.71)***	0.60 (43.60)***	0.73 (54.65)***	0.69 (49.61)***	-1.63 (48.75)***
Dividend Reduce	-0.02 (0.02)	0.09 (0.68)	0.28 (5.06)**	0.03 (0.05)	-0.06 (0.14)
Dividend Eliminate	-0.13 (0.83)	-0.18 (1.46)	-0.14 (0.77)	-0.18 (0.78)	0.28 (2.44)
Likelihood Ratio	385.41***	345.63***	289.23***	334.19***	591.91***
Pseudo R^2 (maximum)	0.07	0.06	0.06	0.08	0.13

This table presents the results of logistical regression models using profitability or delisting as the dependent variables. The dependent variable is set to one if the sample firm has either a profit in the relevant year(s) or a delisting within three calendar years after the event year, as applicable. Variables definitions are based on the definitions in Table 1. Coefficients and corresponding chi-square statistics are shown. The ***, **, * represent statistical significance with 99%, 95%, or 90% confidence, respectively. The regression model is as follows for firm i during event year t:

$$\text{Dependent variable}_{i,t} = a + b1\ \log(\text{size})_{i,t-1} + b2\ \text{Tobin's Q}_{i,t-1} + b3\ \text{retained earnings / assets}_{i,t-1} + b4\ \text{cash / assets}_{i,t-1} + b5\ \text{initiation}_{i,t} + b6\ \text{increase}_{i,t} + b7\ \text{increase}_{i,t} + b8\ \text{maintain}_{i,t} + b9\ \text{reduce}_{i,t} + b10\ \text{eliminate}_{i,t} + e_{i,t}$$

Table 4: Stock Returns by Dividend Policy

	Dividend Policy					
	Initiate	**Increase**	**Maintain**	**Reduce**	**Eliminate**	**No Dividend**
Number of Observations	78	236	804	397	223	6428
Means						
Return t-2	21.10	17.90	9.43	7.37	17.26	24.03
Return t-1	40.67	23.25	1.57	-5.37	11.07	23.01
Return t	-3.98	-4.91	-5.47	-21.44	-31.86	-17.01
Return t+1	-11.46	0.94	7.94	4.86	-5.29	8.53
Return t+2	2.22	4.62	16.59	22.08	16.46	26.23
Return t+3	37.76	18.46	20.47	27.49	22.44	29.96
Cumulative return t+1, t+2	-12.78	6.16	25.04	26.54	10.14	29.70
Cumulative return t+1, t+2, t+3	19.58	19.09	41.62	55.52	32.77	53.25
Medians						
Return t-2	5.46	12.19	4.56	2.06	1.72	0.00
Return t-1	25.63	10.82	-1.77	-11.43	-2.19	-4.17
Return t	-11.08	-10.82	-8.56	-26.77	-40.83	-31.31
Return t+1	-23.26	0.54	2.86	-1.78	-15.38	-13.64
Return t+2	-10.10	-2.56	11.77	6.35	-10.53	-2.22
Return t+3	5.20	-0.26	11.46	11.82	-6.51	-2.57
Cumulative return t+1, t+2	-25.76	-4.21	14.77	9.31	-21.96	-13.66
Cumulative return t+1, t+2, t+3	-19.84	6.31	26.10	18.86	-21.65	-10.29

This table presents raw stock returns by dividend policy. All firms with an annual loss (net income) in year *t-1* followed by an annual profit in year *t* are selected. These firms are then sorted into one of six portfolios based on their dividend policy. "Initiate" contains firms that did not pay dividends in year *t-1*, but did pay them in year *t*. "Increase" contains firms that reduced their dividend by more than 10% from year *t-1* to year *t*. "Reduce" contains firms that reduced their dividend by more than 10% from year *t-1* to year *t*. "Maintain" contains firms that kept their dividend with a 90% to 110% band from year *t-1* to year *t*. "Eliminate" contains firms that paid a dividend in year *t-1* but did not pay a dividend in year *t*. "No Dividend" contains firms that did not pay a dividend in year *t* or year *t-1*. Means and medians of selected variables are presented. Returns are calculated from the beginning of the fiscal year to the end of the fiscal year for each firm-year observation.

Table 5: Regression Analysis of Stock Returns by Dividend Policy

	Coefficient (t-value)					
	Return Year t	**Return Year t**	**Return Year t+1**	**Return Year t+2**	**Return Year t+3**	**Return Year t+1, t+2, t+3**
Intercept	-0.23 (-8.95)***	-0.17 (-6.55)***	0.06 (1.73)*	0.16 (4.02)***	0.22 (4.25)***	0.31 (3.79)***
Prior Year Size	-0.01 (-2.00)**	-0.01 (-2.92)***	-0.02 (-2.82)***	-0.00 (-0.41)	-0.02 (-2.58)***	0.00 (0.98)
Prior Year Book-to-Market	0.12 (8.07)***	0.11 (7.59)***	0.09 (5.93)***	0.12 (5.83)***	0.15 (5.06)***	0.30 (6.06)***
Prior Year Stock Return	-0.02 (-2.78)***	-0.02 (-2.23)**	-0.03 (-1.60)	-0.08 (-5.30)***	-0.05 (-3.87)***	
Current Year ROA		0.25 (6.17)***				
Dividend Initiation	0.05 (1.05)	0.03 (0.66)	-0.18 (-2.12)**	-0.30 (-3.85)***	-0.02 (-0.22)	-0.43 (-3.22)***
Dividend Increase	0.17 (4.66)***	0.15 (4.16)***	-0.02 (-0.46)	-0.17 (-4.27)***	-0.10 (-1.59)	-0.27 (-2.91)***
Dividend Maintain	0.13 (7.98)***	0.11 (6.78)***	0.04 (1.61)	-0.07 (-2.21)**	-0.05 (-1.56)	-0.13 (-2.44)**
Dividend Reduce	-0.05 (-1.94)*	-0.06 (-2.24)**	-0.04 (-1.27)	-0.07 (-1.56)	-0.01 (-0.17)	-0.03 (-0.33)
Dividend Eliminate	-0.14 (-4.17)***	-0.15 (-4.23)***	-0.13 (-2.57)***	-0.14 (-2.17)**	-0.04 (-0.50)	-0.15 (-1.09)
R^2 (adjusted)	0.04	0.05	0.02	0.03	0.04	0.01
F-statistic	35.69***	39.54***	15.33***	23.19***	28.11***	10.64***

This table presents the results of OLS regression models using stock returns as the dependent variables. Variable definitions are as in Tables 1 and 2. The ***, **, * represent statistical significance with 99%, 95%, or 90% confidence, respectively. The t-statistics are corrected using White's (1980) method. The full regression model is below:

$$\text{Dependent variable}_i = a + b1\ \log(\text{prior year size})_i + b2\ \text{prior year book-to-market}_i + b3\ \text{prior year stock return}_i + b4\ \text{current year ROA}_i + b5\ \text{initiation}_i + b6\ \text{increase}_i + b7\ \text{increase}_i + b8\ \text{maintain}_i + b9\ \text{reduce}_i + b10\ \text{eliminate}_i + e_i$$

Table 6: Summary Statistics by Dividend and Debt Policy

	Dividend Policy											
	Initiate		Increase		Maintain		Reduce		Eliminate		No Dividend	
	Debt Increase = 1											
	0	1	0	1	0	1	0	1	0	1	0	1
Number of Observations	64	50	188	109	512	348	300	164	186	112	4458	2996
Percent of All Sample Firms	0.67	0.53	1.98	1.15	5.40	3.67	3.16	1.73	1.96	1.18	46.99	31.58
Percent of Dividend Paying (t-1) Sample	n/a	n/a	9.80	5.68	26.68	18.13	15.63	8.55	9.69	5.84	n/a	n/a
Means												
Size t-1	867.83	621.03	1249.31	1386.28	1703.47	1320.93	1077.18	817.90	475.95	283.84	343.50	235.94
Earnings-to-Price t-1	0.17	0.09	0.09	0.07	0.07	0.07	0.07	0.09	0.09	0.06	0.12	0.09
Book-to-Market t-1	0.88	0.78	0.77	0.69	0.90	0.80	1.03	0.86	0.90	0.59	0.85	0.75
Tobin's Q t-1	1.51	1.68	1.42	1.63	1.20	1.31	1.24	1.49	1.79	2.38	1.91	2.01
Dividend Yield t-1 (%)	0.00	0.00	1.80	1.46	2.81	2.44	3.82	3.13	3.45	2.86	0.00	0.00
Dividend Yield t (%)	2.47	3.46	2.84	2.77	3.16	2.76	3.10	3.04	0.00	0.00	0.00	0.00
Cash-to-Assets t-1 (%)	16.00	13.59	9.83	9.06	6.12	7.52	6.98	10.35	11.03	13.49	16.73	18.56
Retained Earnings-to-Assets t-1 (%)	1.77	-2.58	22.22	25.84	27.90	33.70	23.95	27.13	5.96	2.48	-24.31	-25.24
Debt-to-Equity t-1	9.92	4.92	11.68	2.48	9.98	4.07	9.77	5.44	10.53	2.38	4.72	1.95
Medians												
Size t-1	103.05	61.57	384.23	281.85	279.31	317.34	171.28	123.94	78.98	82.56	37.18	38.90
Earnings-to-Price t-1	0.07	0.06	0.06	0.06	0.06	0.06	0.05	0.06	0.04	0.04	0.05	0.04
Book-to-Market t-1	0.74	0.56	0.66	0.62	0.80	0.72	0.92	0.76	0.66	0.44	0.63	0.58
Tobin's Q t-1	1.17	1.34	1.20	1.29	1.09	1.18	1.04	1.13	1.18	1.56	1.25	1.38
Dividend Yield t-1 (%)	0.00	0.00	1.43	1.14	2.51	2.23	3.74	2.58	2.47	1.94	0.00	0.00
Dividend Yield t (%)	1.40	3.00	2.08	2.12	2.82	2.54	2.59	2.29	0.00	0.00	0.00	0.00
Cash-to-Assets t-1 (%)	6.02	6.28	5.11	4.45	2.45	3.59	2.82	4.37	3.62	5.00	7.71	9.24
Retained Earnings-to-Assets t-1 (%)	7.09	11.36	20.63	23.49	25.05	32.37	20.39	24.63	8.53	6.77	3.60	3.93
Debt-to-Equity t-1	2.81	1.10	3.48	1.97	3.78	2.65	4.31	2.12	2.73	1.12	1.26	0.67

This table presents summary statistics by dividend and debt policy. All firms with an annual loss (net income) in year *t-1* followed by an annual profit in year *t* are selected. These firms are then sorted into one of six portfolios based on their dividend policy. "Initiate" contains firms that did not pay dividends in year *t-1*, but did pay them in year *t*. "Increase" contains firms that reduced their dividend by more than 10% from year *t-1* to year *t*. "Reduce" contains firms that reduced their dividend by more than 10% from year *t-1* to year *t*. "Maintain" contains firms that kept their dividend with a 90% to 110% band from year *t-1* to year *t*. "Eliminate" contains firms that paid a dividend in year *t-1* but did not pay a dividend in year *t*. "No Dividend" contains firms that did not pay a dividend in year *t* or year *t-1*. Means and medians of selected variables are presented. Size is defined as price times shares. Book-to-market is defined as book value of equity divided by size. Tobin's Q is defined as size plus assets minus equity, divided by assets. Dividend yield is defined as dividend over price. Cash-to-assets is defined as cash divided by total assets. Retained earnings-to-assets is defined as retained earnings divided by assets. Debt-to-equity is defined as the total liabilities divided by equity without retained earnings. All of these variables are computed in year *t-1*, the year prior to the event year. A debt increase occurs when total liabilities dividend by equity without retained earnings increases by more than 10% from year *t-1* to year *t*. An equity increase occurs when equity without retained earnings increases by more than 10% from year *t-1* to year *t*.

Table 7: Financial Performance Measures by Dividend and Debt Policy

	Dividend Policy											
	Initiate		Increase		Maintain		Reduce		Eliminate		No Dividend	
	Debt Increase = 1											
	0	1	0	1	0	1	0	1	0	1	0	1
Number of Observations	64	50	188	109	512	348	300	164	186	112	4458	2996
Means												
Return on Assets t-2	0.0144	0.0433	0.0442	0.0521	0.0383	0.0477	0.0403	0.0501	0.0553	0.0436	-0.0307	-0.0195
Return on Assets t-1	0.0789	0.0726	0.0748	0.0580	0.0391	0.0470	0.0340	0.0538	0.0605	0.0687	0.0734	0.0742
Return on Assets t	-0.0740	-0.0718	-0.0793	-0.0617	-0.0507	-0.0521	-0.0800	-0.0959	-0.1400	-0.1182	-0.1647	-0.1753
Return on Assets t+1	-0.0876	-0.0226	-0.0155	-0.0271	-0.0069	-0.0000	-0.0521	-0.0597	-0.1265	-0.1190	-0.1672	-0.1630
Return on Assets t+2	-0.1293	-0.0083	-0.0151	-0.0421	0.0079	-0.0007	-0.0225	-0.0632	-0.1254	-0.1541	-0.1598	-0.1652
Return on Assets t+3	-0.0958	-0.0496	-0.0200	-0.0112	0.0165	0.0204	0.0044	-0.0347	-0.0651	-0.1662	-0.1378	-0.1378
Medians												
Return on Assets t-2	0.0141	0.0555	0.0370	0.0520	0.0357	0.0492	0.0362	0.0468	0.0460	0.0513	0.0214	0.0317
Return on Assets t-1	0.0389	0.0554	0.0455	0.0505	0.0314	0.0423	0.0246	0.0385	0.0246	0.0392	0.0365	0.0415
Return on Assets t	-0.0449	-0.0499	-0.0466	-0.0375	-0.0260	-0.0309	-0.0427	-0.0529	-0.0634	-0.0503	-0.0722	-0.0760
Return on Assets t+1	-0.0136	0.0047	0.0184	0.0185	0.0151	0.0204	-0.0068	-0.0102	-0.0264	-0.0242	-0.0409	-0.0389
Return on Assets t+2	0.0081	0.0145	0.0270	0.0157	0.0253	0.0235	0.0116	0.0010	-0.0145	-0.0188	-0.0244	-0.0155
Return on Assets t+3	0.0198	0.0130	0.0265	0.0198	0.0304	0.0304	0.0213	0.0159	0.0058	-0.0115	-0.0084	-0.0123
Percent with												
Positive Earnings t+1	45.00	50.00	59.89	65.05	64.49	66.17	46.62	44.08	40.36	39.80	36.38	37.58
Positive Earnings t+2	54.55	68.42	61.59	56.25	71.00	63.95	58.94	51.72	43.87	41.30	42.91	45.69
Positive Earnings t+3	53.85	62.86	65.00	62.79	73.62	72.24	63.79	65.15	52.99	44.16	47.81	47.13
Positive Earnings Any Year (t+1, t+2, or t+3)	76.47	85.71	82.73	83.72	91.28	90.27	80.17	82.31	73.88	64.94	70.12	72.15
Positive Earnings All Years (t+1, t+2, and t+3)	29.41	25.71	41.01	38.37	43.81	41.61	31.90	25.38	20.90	19.48	18.73	18.92
Earnings t+1 > Earnings t-1	25.00	34.78	36.16	34.95	34.08	31.74	25.98	20.39	20.48	20.41	20.39	20.03
Earnings t+2 > Earnings t-1	30.91	42.11	41.46	33.33	43.92	38.24	31.94	24.14	29.03	19.57	26.10	27.97
Earnings t+3 > Earnings t-1	36.54	45.71	43.57	38.37	46.79	45.82	42.67	32.58	28.36	19.48	31.28	30.56
Earnings All 3 years > Earnings t-1	11.76	17.14	25.18	11.63	20.64	18.12	15.95	7.69	8.96	6.49	9.35	8.27
Dividends Paid t+1	44.26	30.43	73.03	79.61	92.46	89.52	46.26	40.79	5.42	5.10	0.97	1.06
Dividends Paid t+2	36.36	21.05	65.85	66.67	83.62	80.37	42.80	36.30	8.39	5.43	1.47	1.35
Dividends Paid t+3	34.62	22.86	59.57	61.63	78.54	73.24	45.49	34.59	8.21	3.90	2.46	2.06
Dividends Paid Any Year (t+1, t+2, or t+3)	53.85	28.57	80.14	80.23	92.92	91.30	56.22	46.56	13.43	7.79	3.39	3.44
Dividends Paid All Years (t+1, t+2, and t+3)	30.77	20.00	52.48	60.47	77.17	72.24	38.20	30.53	2.99	2.60	0.34	0.24
Delisting in Any Year (t+1, t+2, or t+3)	12.28	12.82	6.98	11.70	1.91	3.43	10.63	15.49	17.79	23.60	18.07	21.16
Merging in Any Year (t+1, t+2, or t+3)	14.04	23.08	16.86	11.70	11.70	9.66	10.63	6.34	10.43	15.73	12.20	12.52

Table 7: Financial Performance Measures by Dividend and Debt Policy (cont.)

This table presents various financial performance measures by dividend and debt policy. All firms with an annual loss (net income) in year *t-1* followed by an annual profit in year *t* are selected. These firms are then sorted into one of six portfolios based on their dividend policy. "Initiate" contains firms that did not pay dividends in year *t-1*, but did pay them in year *t*. "Increase" contains firms that reduced their dividend by more than 10% from year *t-1* to year *t*. "Reduce" contains firms that reduced their dividend by more than 10% from year *t-1* to year *t*. "Maintain" contains firms that kept their dividend with a 90% to 110% band from year *t-1* to year *t*. "Eliminate" contains firms that paid a dividend in year *t-1* but did not pay a dividend in year *t*. "No Dividend" contains firms that did not pay a dividend in year *t* or year *t-1*. Return on assets is equal to net income over total assets. Positive earnings occur when net income is greater than zero. A debt increase occurs when total liabilities dividend by equity without retained earnings increases by more than 10% from year *t-1* to year *t*.

Table 8: Regression Analysis of Profitability and Delisting by Dividend and Debt Policy

	Coefficients (Chi-Square)				
	Positive Earnings Year t+1 (1 = profit)	**Positive Earnings Year t+2 (1 = profit)**	**Positive Earnings Year t+3 (1 = profit)**	**Positive Earnings All Years (1 = profit)**	**Delisting Year t+1, t+2, or t+3 (1 = delisting)**
Intercept	-0.36	-0.17	0.05	-1.35	-0.25
	(31.53)***	(6.31)**	(0.52)	(240.49)***	(8.66)***
Size t-1	0.03	0.07	0.06	0.08	-0.35
	(5.78)**	(20.25)***	(16.41)***	(18.15)***	(247.86)***
Tobin's Q t-1	-0.08	-0.07	-0.05	-0.08	0.06
	(18.41)***	(14.80)***	(8.77)***	(9.16)***	(7.16)***
Retained Earnings / Assets t-1	0.16	0.20	0.11	0.35	-0.12
	(18.91)***	(27.22)***	(8.52)***	(21.81)***	(8.61)***
Cash / Assets t-1	-0.82	-0.97	-0.99	-1.24	-1.08
	(37.02)***	(50.72)***	(48.33)***	(36.76)***	(34.40)***
Dividend Initiation	0.06	0.47	0.02	-0.12	-0.26
	(0.07)	(3.28)*	(0.01)	(0.11)	(0.51)
Dividend Increase	0.79	0.36	0.32	0.60	-0.46
	(26.84)***	(5.34)**	(3.47)*	(12.32)***	(2.91)*
Dividend Maintain	0.82	0.71	0.68	0.70	-1.76
	(66.06)***	(45.00)***	(35.44)***	(37.66)***	(45.55)***
Dividend Reduce	-0.03	0.20	0.23	0.04	-0.17
	(0.06)	(2.49)	(2.90)*	(0.08)	(0.76)
Dividend Eliminate	-0.13	-0.18	-0.14	-0.18	0.28
	(0.82)	(1.46)	(0.79)	(0.78)	(2.55)
Debt Increase	0.06	0.09	-0.09	-0.01	0.23
	(1.10)	(2.44)	(2.44)	(0.04)	(11.76)***
Debt Increase x Dividend Payment	0.04	-0.27	0.12	-0.03	0.27
	(0.13)	(4.33)**	(0.76)	(0.05)	(1.44)
Likelihood Ratio	387.34***	350.50***	291.72***	334.36***	608.97***
Pseudo R^2 (maximum)	0.07	0.07	0.06	0.08	0.13

This table presents the results of logistical regression models using profitability or delisting as the dependent variables. The dependent variable is set to one if the sample firm has either a profit in the relevant year(s) or a delisting within three calendar years after the event year, as applicable. Variables definitions are based on the definitions in Table 1. The debt increase x dividend payment variable is equal to one if both a debt increase and a dividend payment occurred in year t. Coefficients and corresponding chi-square statistics are shown. The ***, **, * represent statistical significance with 99%, 95%, or 90% confidence, respectively. The regression model is as follows for firm i during event year t:

$$\text{Dependent variable}_{i,t} = a + b1\ \log(\text{size})_{i,t-1} + b2\ \text{Tobin's Q}_{i,t-1} + b3\ \text{retained earnings / assets}_{i,t-1} + b4\ \text{cash / assets}_{i,t-1} + b5\ \text{initiation}_{i,t} + b6\ \text{increase}_{i,t} + b7\ \text{increase}_{i,t} + b8\ \text{maintain}_{i,t} + b9\ \text{reduce}_{i,t} + b10\ \text{eliminate}_{i,t} + b11\ \text{debt increase}_{i,t} + b12\ \text{debt increase x dividend payment}_{i,t} + e_{i,t}$$

Table 9: Stock Returns by Dividend and Debt Policy

	Dividend Policy											
	Initiate		**Increase**		**Maintain**		**Reduce**		**Eliminate**		**No Dividend**	
	Debt Increase = 1											
	0	**1**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**1**
Number of Observations	42	36	142	94	478	326	251	146	128	95	3724	2704
Means												
Return t-2	0.2401	0.1673	0.1217	0.2747	0.1058	0.0776	0.0642	0.0914	0.1106	0.2994	0.2063	0.2927
Return t-1	0.4830	0.2979	0.2151	0.2597	-0.0057	0.0467	-0.0698	-0.0253	0.0904	0.1456	0.2344	0.2239
Return t	-0.1138	0.0464	-0.0185	-0.0952	-0.0504	-0.0610	-0.2181	-0.2081	-0.3149	-0.3236	-0.1666	-0.1748
Return t+1	-0.1642	-0.0381	0.0548	-0.0647	0.1043	0.0430	0.1048	-0.0576	-0.0219	-0.1020	0.0956	0.0700
Return t+2	0.0589	-0.0366	0.1057	-0.0537	0.1971	0.1208	0.3134	0.0469	0.2485	0.0292	0.2590	0.2672
Return t+3	0.3750	0.3821	0.1725	0.2044	0.2184	0.1850	0.2916	0.2460	0.3171	0.0654	0.3256	0.2606
Cumulative return t+1, t+2	-0.1270	-0.1291	0.1434	-0.0710	0.3010	0.1768	0.3862	0.0407	0.2231	-0.0931	0.2869	0.3125
Cumulative return t+1, t+2, t+3	0.2109	0.1676	0.2862	0.0394	0.4789	0.3256	0.7511	0.2130	0.5209	-0.0005	0.5668	0.4808
Medians												
Return t-2	0.0332	0.0723	0.0877	0.1867	0.0353	0.0590	-0.0016	0.0370	-0.0473	0.1908	-0.0400	0.0672
Return t-1	0.2769	0.2517	0.1043	0.1151	-0.0255	-0.0066	-0.1355	-0.0688	-0.0784	-0.0000	-0.0526	-0.0191
Return t	-0.1804	-0.0572	-0.0959	-0.1465	-0.0609	-0.0929	-0.2455	-0.2771	-0.4042	-0.4200	-0.3220	-0.3022
Return t+1	-0.2695	-0.1924	0.0363	-0.0637	0.0482	0.0000	0.0211	-0.1071	-0.1290	-0.2254	-0.1304	-0.1429
Return t+2	-0.1010	-0.0763	0.0616	-0.0622	0.1488	0.0727	0.1257	0.0000	0.0716	-0.1646	-0.0028	-0.0426
Return t+3	0.0534	0.0112	-0.0262	0.0149	0.1304	0.0839	0.1259	0.0500	-0.0396	-0.1176	0.0000	-0.0609
Cumulative return t+1, t+2	-0.2492	-0.3372	0.0179	-0.1875	0.1881	0.0921	0.1693	-0.1143	-0.1250	-0.2979	-0.1169	-0.1638
Cumulative return t+1, t+2, t+3	-0.0847	-0.2478	0.1647	-0.1744	0.3336	0.1780	0.3119	-0.0000	-0.1442	-0.3750	-0.0909	-0.1298

This table presents raw stock returns by dividend and debt policy. All firms with an annual loss (net income) in year *t-1* followed by an annual profit in year *t* are selected. These firms are then sorted into one of six portfolios based on their dividend policy. "Initiate" contains firms that did not pay dividends in year *t-1*, but did pay them in year *t*. "Increase" contains firms that reduced their dividend by more than 10% from year *t-1* to year *t*. "Reduce" contains firms that reduced their dividend by more than 10% from year *t-1* to year *t*. "Maintain" contains firms that kept their dividend with a 90% to 110% band from year *t-1* to year *t*. "Eliminate" contains firms that paid a dividend in year *t-1* but did not pay a dividend in year *t*. "No Dividend" contains firms that did not pay a dividend in year *t* or year *t-1*. A debt increase occurs when total liabilities dividend by equity without retained earnings increases by more than 10% from year *t-1* to year *t*. Means and medians of selected variables are presented. Returns are calculated from the beginning of the fiscal year to the end of the fiscal year for each firm-year observation.

Table 10: Regression Analysis of Stock Returns by Dividend and Debt Policy

	Coefficient (t-value)					
	Return Year t	**Return Year t**	**Return Year t+1**	**Return Year t+2**	**Return Year t+3**	**Return Year t+1, t+2, t+3**
Intercept	-0.25 (-8.92)***	-0.18 (-6.62)***	0.07 (2.03)**	0.15 (3.70)***	0.25 (4.63)***	0.37 (4.24)***
Prior Year Size	-0.01 (-1.96)**	-0.01 (-2.88)***	-0.02 (-2.90)***	-0.00 (-0.44)	-0.02 (-2.61)***	-0.00 (-0.14)
Prior Year Book-to-Market	0.12 (8.13)***	0.11 (7.66)***	0.09 (5.78)***	0.12 (5.82)***	0.15 (5.05)***	0.29 (5.87)***
Prior Year Stock Return	-0.02 (-2.76)***	-0.02 (-2.20)**	-0.03 (-1.65)*	-0.08 (-5.33)***	-0.05 (-3.85)***	
Current Year ROA		0.25 (6.18)***				
Dividend Initiation	0.05 (1.07)	0.03 (0.69)	-0.15 (-1.79)*	-0.25 (-3.05)***	-0.05 (-0.41)	-0.39 (-2.75)***
Dividend Increase	0.17 (4.49)***	0.15 (4.01)***	0.01 (0.14)	-0.12 (-2.77)***	-0.12 (-1.94)*	-0.22 (-2.17)**
Dividend Maintain	0.13 (6.45)***	0.11 (5.51)***	0.06 (2.16)**	-0.01 (-0.32)	-0.07 (-1.88)*	-0.08 (-1.23)
Dividend Reduce	-0.05 (-1.77)*	-0.05 (-2.07)**	-0.02 (-0.66)	-0.03 (-0.52)	-0.03 (-0.52)	0.01 (0.10)
Dividend Eliminate	-0.14 (-4.16)***	-0.14 (-4.22)***	-0.13 (-2.57)***	-0.14 (-2.16)**	-0.05 (-0.54)	-0.15 (-1.10)
Debt Increase	0.02 (1.18)	0.02 (1.23)	-0.02 (-1.01)	0.02 (0.80)	-0.08 (-2.31)**	-0.10 (-1.78)*
Debt Increase x Dividend Payment	-0.00 (-0.17)	-0.00 (-0.17)	-0.06 (-1.58)	-0.14 (-3.02)***	0.06 (1.02)	-0.12 (-1.37)
F-statistic	28.72***	32.52***	12.68***	19.03***	23.11***	9.18***
R^2 (adjusted)	0.04	0.05	0.02	0.03	0.04	0.01

Table 10: Regression Analysis of Stock Returns by Dividend and Debt Policy (cont.)

This table presents the results of OLS regression models using stock returns as the dependent variables. Variable definitions are as in Tables 1 and 2. The debt increase x dividend payment variable is equal to one if both a debt increase and a dividend payment occurred in year *t*. The ***, **, * represent statistical significance with 99%, 95%, or 90% confidence, respectively. The t-statistics are corrected using White's (1980) method. The full regression model is below:

$$\text{Dependent variable}_i = a + b1\ \log(\text{prior year size})_i + b2\ \text{prior year book-to-market}_i + b3\ \text{prior year stock return}_i + b4\ \text{current year ROA}_i + b5\ \text{initiation}_i + b6\ \text{increase}_i + b7\ \text{increase}_I + b8\ \text{maintain}_i + b9\ \text{reduce}_i + b10\ \text{eliminate}_i + b11\ \text{debt increase}_i + b12\ \text{debt increase x dividend payment}_i + e_i$$