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The Role of Dividend Policy in Real Earnings Management

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THE ROLE OF DIVIDEND POLICY IN REAL EARNINGS MANAGEMENT

BY

NAN LIU

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree

Of

Doctor of Philosophy

In the Robinson College of Business

Of

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GEORGIA STATE UNIVERSITY
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ACCEPTANCE

This dissertation was prepared under the direction of the *Nan Liu* Dissertation Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Doctoral of Philosophy in Business Administration in the J. Mack Robinson College of Business of Georgia State University.

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I dedicate this thesis to my father, Ronggui Liu, who passed away during my first year in the program and who had encouraged me to be strong.

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ABSTRACT

THE ROLE OF DIVIDEND POLICY IN REAL EARNINGS MANAGEMENT

BY

NAN LIU

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Given the importance of historical dividend policy to firms, I investigate whether dividend payers manipulate earnings through real activities to smooth dividend levels and dividend payout ratios. Using Compustat's Execucomp database, I find evidence that dividend policy impacts both upward and downward real earnings management. I find that payers manipulate earnings upward through real activities to mitigate the shortfall of pre-managed earnings relative to prior year dividends when pre-managed earnings are lower than dividends paid in the prior year, suggesting that dividend levels are an important earnings benchmark. I document a stronger relationship between changes in pre-managed earnings and real earnings management for payers than for non-payers, suggesting that dividend policies impact real earnings management. Consistent with the importance of dividend policy in real earnings management, I show that dividend payers that follow conservative dividend policies manipulate earnings to a greater extent than dividend payers that do not follow conservative dividend policies.

CHAPTER 1

INTRODUCTION

It is well known that managers try to maintain their firms' dividend levels and dividend pay-out ratios. Lintner (1956) documents that dividends paid in the current year are a function of target pay-out ratios, current earnings, and dividends paid out in the prior year. Brav, Graham, Harvey and Michaely (2005) show that dividend-payers try to smooth yearly dividend streams and maintain consistency with their past dividend policies, e.g., dividend levels and payout ratios.[1] I examine the role of smoothing dividend levels and dividend payout ratios in real earnings management.

Lintner (1956) argues that dividend policy is the primary decision criterion in determining how earnings are distributed between current dividends and retained earnings. Dividend policies include setting the existing dividend as the central benchmark, targeting a relatively fixed payout ratio, determining whether and how much to change dividend payments based on changes in earnings, and making partial adjustment to what is suggested by changes in earnings. Lintner (1956, p. 100) finds that managers feel pressure to increase dividends when there is a substantial increase in profitability because of "their fiduciary responsibilities and standards of fairness". Twenty-six of the 28 sample companies in his study had specific target payout ratios that were invariant over long periods of time. More recent survey papers suggest that about half of firms have explicit target dividend payout ratios (Baker and Powell, 2000; Baker, Veit and Powell, 2001). Consistent with dividends being an important earnings target, Daniel, Denis and Naveen

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[1] The dividend payout ratio is the dividend level divided by the earnings level.

(2008) find that dividend payers with debt manipulate accruals upward to attain dividend targets when pre-managed earnings fall short of last year's dividends.

Dividend levels are a more important target than dividend payout ratios (Baker and Powell, 2000; Baker et al., 2001; Brav et al. 2005). Thus, I argue that the dividend level decision is made before the dividend payout ratio decision. When pre-managed earnings fall short of expected dividends, maintaining the expected dividend results in a payout ratio of over 100 percent, giving rise to the problem of dividend sustainability. Manipulating earnings upward through real activities increases firms' ability to pay cash dividends and makes the payout ratio more sustainable. I expect dividend payers to manipulate earnings upward to mitigate the shortfall of pre-managed earnings relative to expected dividends. On the other hand, when pre-managed earnings exceed expected dividends, if dividend levels are not fully adjusted based on changes in pre-managed financial performance (Lintner 1956), manipulating earnings downward (upward) helps dividend payers to smooth payout ratios in years of earnings increases (decreases). I expect dividend payers to manipulate earnings through real activities to a greater extent than non-payers. To shed light on the effect of dividend policy on real earnings management, I investigate real earnings management behavior within dividend payers. I define dividend conservatism as the partial adjustment to dividends, and operationalize it as decreases (increases) in pre-managed payout ratios in years of earnings increases (decreases). [2] Managing earnings downward (upward) helps payers that follow conservative dividend policies to boost (smooth) pre-managed payout ratios. I expect

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[2] The pre-managed payout ratio is defined as dividends paid in year t divided by year t pre-managed earnings.

dividend payers that follow conservative dividend policies manipulate earnings to a greater extent than dividend payers that do not follow conservative dividend policies.

I define real earnings management as "actions managers take that deviate from normal business practices (Cohen and Zarowin, 2010, p. 2)", and proxy real earnings management as abnormal cash flows from operations (Burgstahler and Eames, 2006; Roychowdhury, 2006), abnormal selling, general and administrative expense (Gunny, 2009), abnormal research and development expense (Gunny, 2009), and abnormal gain or loss from sale of assets (Gunny, 2009). Consistent with Daniel et al. (2008), I define expected dividends as dividends paid in the prior year. I find that dividend payers manipulate earnings upward through real activities to mitigate the shortfall of pre-managed earnings relative to last year's dividends when pre-managed earnings are below last year's dividends. More importantly, I find that when pre-managed earnings exceed last year's dividends, the negative relationship between real earnings management and changes in pre-managed earnings is stronger for dividend payers than for non-payers. Within dividend payers, I document that when pre-managed earnings exceed last year's dividends, firms which are more likely to follow a conservative dividend policy manipulate earnings downward (upward) to a greater extent than firms which are less likely to follow a conservative dividend policy when pre-managed earnings exceed (fall short of) last year's earnings. Furthermore, I document both upward and downward earnings manipulation for payers with and without debt.

My analysis suggests that dividend policies have an incremental effect on both upward and downward real earnings management. My study contributes to the earnings management and dividend payout policy literatures in several ways. First, I provide a

more complete analysis of the dividend policy driving earnings management. Daniel et al. (2008) find that firms manage accruals upwards to attain dividend targets when pre-managed earnings are below last year's dividends, which help firms avoid negative stock market reactions if they miss their targets. I extend Daniel et al. (2008) by identifying situations where managers have stronger incentives to manipulate earnings both downward and upward through real activities when pre-managed earnings exceed lagged dividends. Second, unlike Daniel et al. (2008) which argue that dividend restrictions in debt contracts drive upward earnings management by dividend payers, my argument is based on the priority and interaction of dividend level and dividend payout ratio smoothing. Daniel et al. (2008) show that dividend threshold driven accruals management is evident only in dividend payers with positive debt, supporting their debt covenants argument. I find both upward and downward real earnings manipulation for dividend payers with and without debt, supporting my dividend policy argument. Third, I provide more direct evidence about the role of dividend policy in real earnings management by comparing payers that are more likely to follow conservatism dividend policies with payers that are less likely to follow conservatism dividend policies.

I proceed as follows. Section 2 reviews the earnings management and dividend policy literatures. Section 3 derives hypotheses. Section 4 describes my data and methodology. Section 5 analyzes the association between real earnings management and dividend policy. Section 6 examines firms with and without debt separately. Section 7 provides supplemental test. Section 8 concludes.

CHAPTER2

RELATED LITERATURE

2.1 Earnings management literature

Earnings equal cash flows plus accruals so they can be manipulated either via cash flows or accruals (Burgstahler and Dichev, 1997; Degeorge, Patel, and Zeckhauser, 1999; Burgstahler and Eames, 2006). In a survey of over 400 financial executives, Graham, Harvey and Rajgopal (2005) find that most earnings management is achieved via real actions, such as delaying discretionary expenditures rather than via accrual manipulations, such as altering accounting assumptions. Because firms are more likely to conduct real activities manipulations than accruals manipulations, I focus on real earnings management in my paper. I adopt Cohen and Zarowin's (2010, p. 2) definition of real earnings management: "actions managers take that deviate from normal business practices." Specifically, I examine manipulation of cash flow from operations (including selling, general and administrative expense, and research and development expense) and gain on sale of long-term assets.

Since earnings are one of many signals used to make certain decisions (Schipper, 1989), managers have incentives to manipulate them to meet earnings related thresholds. Prior literature has documented adverse valuation consequence of missing earnings levels, earnings changes and analysts' forecasts benchmarks (Brown and Caylor 2005), and evidence of upward earnings management to meet or just beat important earnings benchmarks. Burgstahler and Dichev (1997) document an upward shift in the distribution of cash flows from operations for slightly positive earnings relative to firms with slightly

negative earnings.[3] Burgstahler and Eames (2006) proxy for business management by using scaled annual change in cash flows from operations and for reporting management by using discretionary accruals based on the Jones model. They conclude that business management plays a more important role than discretionary accruals management to avoid annual negative earnings surprises.[4] Roychowdhury (2006) finds that firms conduct real earnings management to meet or just beat the zero earnings and analyst forecast benchmarks.

Consistent with the importance of meeting earnings benchmarks, manipulating earnings downward in one period helps firms to meet future benchmarks by manipulating earnings upward in the future. Discretionary expenditures, such as R&D, repairs and maintenance, advertisement and employee training programs, and sale of long-term assets can be adjusted both upward and downward, enabling firms to make earnings closer to some targets through both upward and downward manipulation (Bartov, 1993). Perry and Grinaker (1994) find that unexpected R&D is positively related to pre-managed unexpected earnings, i.e., when pre-managed unexpected earnings are below zero, firms report negative unexpected R&D, and when they are above zero, firms report positive unexpected R&D. This finding is consistent with the notion that firms defer R&D to boost current reported earnings when pre-managed earnings are below expected earnings, and accelerate R&D to decrease current reported earnings when pre-managed earnings exceed expected earnings.

Cohen, Mashruwala and Zach (2009) argue that adjusting advertising is more

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[3] While Burgstahler and Dichev (1997) document an upward shift in the distribution of cash flows from operations for the three quartiles (the 25th, 50th and 75th percentiles), they find that the upward shift of the conditional distribution of changes in working capital only exists for the upper quartiles (the 75th percentiles) of the distribution.

[4] In their footnotes 9 and 10, Burgstahler and Eames (2006) recognize that their evidence is also consistent with downward business management and reporting management.

feasible than changing R&D because advertising activities require shorter amounts of time between the decision and execution times, and most advertising activities are not contract-based.[5] They document that firms reporting small positive earnings levels or earnings changes exhibit lower advertising expenditures than other firms.[6] According to Statement of Position 93-7, paragraph 42 and 43, costs of producing advertising, which are not examined by Cohen et al. (2009), "are incurred during production rather than when the advertising takes place." So firms can boost producing advertising to decrease current earnings without influencing current sales.

Similarly, managers have discretion regarding the timing of disposal of property, plant and equipment (PPE) and investment. Bartov (1993) documents a negative relation between income recognized from disposal of long-term assets and changes in pre-managed earnings per share (exclusive of income from asset sales) for the three-year period 1987-1989, suggesting that firms accelerate income recognition of their asset sales when pre-managed earnings fall below lagged earnings, and defer it when pre-managed earnings exceed lagged earnings. Since the cost principle creates the upper limit for the valuation of PPE and unrealized holding gains are not recorded until the sale of assets, the timing of PPE sales is an efficient instrument for manipulating earnings upward. Statements of Financial Accounting Standards (SFAS) No. 121 and No. 144 require firms to recognize an impairment loss only if the carrying value of a long-term asset exceeds its expected *undiscounted* future cash flows. So the timing of PPE sales can be used to manipulating earnings downward. The accounting for available for sale securities

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[5] Adjustment of R&D involves disposing of assets, laying workers off, or both (Cohen et al., 2009). The media-related outlays they examined are about 45% of expenses reported in Compustat. Their monthly advertising information is from a proprietary database constructed by a media-tracking company.
[6] They find no evidence that firms manipulate advertising to meet or just beat analysts' forecasts. Cohen et al. (2009) explain the results as being consistent with the notion that manipulating real activities to meet a moving benchmark is more difficult than to meet a non-moving benchmark, such as positive earnings.

suggests that unrealized holding gains or losses are recognized in net income only when these securities are sold (SFAS No. 115). Taken together, firms can accelerate gains or defer losses from sale of PPE or available for sale securities to boost earnings, and they can defer gains or accelerate losses to manipulate earnings downward.

More recently, Dechow, Myers and Shakespeare (2010) investigate whether firms use accounting rules for valuing retained interest from securitizations to manipulate earnings. They document a negative relationship between pre-managed earnings (changes in pre-managed earnings) and securitization gains, where pre-managed earnings are measured as earnings before securitization gains.

Degeorge et al. (1999, p. 5) state that accruals and real earnings management, "whether pushing earnings forward or back, are costly activities." They find that firms meeting or just beating the previous annual earnings benchmark (0 to 4-penny) underperform firms just missing the benchmark (-5 to -1-penny), and firms beating the previous annual earnings benchmark (5 to 9-penny)[7] underperform firms strongly beating the benchmark (10 to 14-penny). Cohen and Zarowin (2010) show that in the seasoned equity offerings context, the negative effects of real earnings management on future financial performance, i.e., return on assets, are greater than the effects of accruals management.

The above discussion suggests that, theoretically and empirically, firms manipulate discretionary expenditures and gains from sale of assets upward and downward to report earnings closer to targets. While discretionary expenditures are negatively related to cash flow from operating activities and earnings, income from asset

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[7] They recognized that this group may have reined earnings in. The results also suggest that this group underperform the group just missing the threshold.

sales is positively related to cash flow from investing activities and earnings.

2.2 Dividend policy literature

2.2.1 Survey evidence on dividend policy

Lintner (1956) documents that managers are reluctant to cut dividends and target long-term pay-out ratios when making dividend decisions. Current earnings influence current dividend decisions through the target payout ratio. Lintner (1956) defines "dividend conservatism" as the partial adjustment in dividends given the current financial performance, i.e., dividend change in any given year is only part of the amount indicated by the target pay-out ratio and current earnings. [8] Lintner (1956) argues that this policy helps to stabilize dividend distributions and to create a cash flow cushion to mitigate effects of future uncertainties.

Lintner (1956, p. 100 to 101) finds that management "were generally concerned with the decline in favorable proxies and in the weakening of their personal positions which they believed would follow any failure to reflect a 'fair share' of such added earnings in dividends… Stockholder reactions in such situations have been sufficiently vigorous and effective in enough companies that the fear of such a reaction is an effective 'burr under the saddle' to all managements…" Twenty-six out of the 28 sample companies had a specific target payout ratio that did not change over long periods of time. [9]

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[8] The model specified by Lintner (1956) is $\Delta D_{it} = \alpha_{it} + c\ [(r_i\ P_{it}) - D_{i\ (t-1)}] + \mu_{it}$, which can be converted into $D_{it} = \alpha_{it} + c\ (r_i\ P_{it}) + d\ D_{i\ (t-1)} + \mu_{it}$, where D is the level of dividends in a given year, r is the target pay-out ratio, and P is the current year's after-tax earnings. c is less than 1 in order to reflect dividend conservatism and partial adjustment .

[9] According to Lintner (1956), managers take into account investment opportunities, working capital needs, and growth of the company along with other considerations in determining the target payout ratio, and they would seek outside financing if their firms have particularly abundant investment opportunities.

Consistent with Lintner (1956), Baker, Farrelly and Edelman's (1985) find that the anticipated level of a firm's future earnings and the pattern of its past dividends are most important in determining its dividend policy. They also find that managers generally agree that their firms should avoid making dividend changes that might soon be reversed, and that their firms should have target payout ratios. The chief financial officers agreed fairly strongly that dividend payments affect common stock prices and provide signals about the firm's future prospects. Baker and Powell (1999) also find that managers believe firms should avoid changing their regular dividends, have target dividend payout ratios, and periodically adjust payouts toward the target ratio. In addition to the value relevance of dividend policy and the signaling aspect of dividends, Baker and Powell's (1999) survey provides some support for the agency explanation for paying dividends.[10] Specifically, more than 90 percent of the surveyed financial officers agree that dividend payments force firms to seek more external financing, which subjects them to capital market scrutiny.

Baker and Powell (2000) and Baker et al. (2001) conclude there is little change in managers' views of dividend determinants over time, namely the level of current and expected future earnings, and the pattern of past dividends. Baker and Powell (2000) and Baker et al. (2001) also find that the desire to maintain a given dividend payout ratio is a moderately important factor in determining dividend policy, and about half of the responding firms have explicit target payout ratios.

Using a survey sample of 256 public companies and 128 private firms, Brav et al. (2005) investigate payout policies in the 21st century. Their analysis indicates that, consistent with dividend conservatism, about 90 percent of dividend-payers have a strong

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[10] I discuss the signaling and agency explanation later in this section.

desire to avoid dividend reductions and to smooth dividend streams from year to year. Eighty-four percent of executives try to maintain consistency with historical dividend policies. Brav et al.(2005)'s analysis shows that maintaining dividend levels is the main variable in deciding dividend policies, while pay-out ratios are of secondary importance.[11] Managers believe that dividend decisions convey information to the market and that dividend reductions have negative consequences.[12]

Overall, survey research reveals that both dividend levels and dividend payout ratios are important targets. Lintner (1956) and Fama and Babiak (1968) both find that the two variable-Lintner model explains dividend changes for individual firms fairly well. The survey results suggest that managers believe that dividend policy is value relevant, and that signaling explanations are more important than agency explanations for explaining dividend policy.[13]

2.2.2 Theoretical and empirical evidence of dividend policy

Mukherjee (2009, p. 157) concludes that "Researchers consistently report that abnormal return of a dividend-change announcement is of the same sign as the sign of the dividend change. Although researchers have advanced several hypotheses to explain this phenomenon, two highly researched and competing hypotheses are the cash flow signaling hypothesis and the free cash flow hypothesis. According to the cash flow signaling hypothesis, the stock price moves in the same direction as the dividend change because dividend changes convey information about the firm's future growth opportunities. The free cash flow hypothesis suggests that price reacts favorably to the

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[11] Brav et al. (2005) find that nearly 40% of respondents target dividend per share, 28% target dividend payout ratios, 27% target DPS growth, and 13% target dividend yields.

[12] Managers view their information conveyance as concerning the mean and variance of the distribution of future earnings, and they believe that dividends reduce stock risk (Brav et al., 2005).

[13] In their footnote 14, Brav et al. (2005) recognize that managers might not admit or realize the agency conflicts.

announcement of a dividend increase because this increase reduces the agency cost of free cash flow. Similarly, the stock price reacts negatively to an announcement of reduced dividends because the potential for overinvestment increases."

Consistent with managers' reluctance to cut dividends, prior literature has documented negative stock price reactions surrounding dividend cut announcements. Aharony and Swary (1980) find significant negative abnormal returns surrounding the announcement of unexpected dividend decreases for the period 1963-1976. They use both a naive model and a modified version of the Lintner (1956) model to proxy for expected dividends. In the naive model, expected dividends are dividends in the prior quarter. The modified Lintner (1956) model expresses the expected change in dividends as a function of earnings and lagged dividends, which incorporate the importance of firms' targeted payout ratios. Healy and Palepu (1988) document significant negative market reactions to dividend omission announcements. Ghosh and Woolridge (1989) investigate the effect of growth induced dividend cuts on market reaction and document a negative stock market response to growth induced dividend cuts, albeit at a smaller magnitude than non-growth induced dividend cuts. Grullon, Michaely and Swaminathan (2002) illustrate that for dividend changes announced during 1967-1996, firms with dividend reductions experience increases in systematic risk and the announcement-day negative market reaction is significantly related to the increase in systematic risk.

Miller and Modigliani (1961) argue that a dividend payout change will elicit a market price change if investors interpret it as signaling changes in the firm's future performance. Consistent with the signaling argument, Healy and Palepu (1988) document earnings increases after dividend initiations. Brook, Charlton, and Hendershott (1998)

find that dividend increases signal permanent future cash flow increases. Brook et al. (1998, p. 49) maintain that although permanent-increase firms appear to using dividends to signal cash flow increases in year 0, "their subsequent dividend changes in years 1 through 3 are also consistent with dividend smoothing and the desire to maintain a target dividend payout ratio."

Agency cost and free cash flow theory posit that the agency problem stems from separation of ownership and management, and dividend payments may serve as a means of monitoring or bonding managers (Easterbrook, 1984; Jensen, 1986). Self-interested managers have incentives to expand the firm beyond its optimal size to increase their power and compensation (Jensen, 1986). Paying dividends reduces the internal cash flow available to managers and forces firms to seek more external financing, subjecting managers to the scrutiny of the suppliers of capital. Capital market scrutiny mitigates both monitoring costs and overinvestment problems. Crutchley and Hansen (1989) find evidence suggesting that managers use dividend payments to help control for agency costs. The agency cost and free cash flow theories imply that earnings response coefficients are positively related to payout ratios. Kallapur (1994) documents a positive association between earnings response coefficients and payout ratios, supporting the free cash flow theory.

In summary, empirical evidence suggests the following. First, capital markets react negatively to unexpected dividend decreases, using both a naive model and a modified version of the Lintner (1956) model to proxy for expected dividends. Second, firms are likely to smooth dividend levels and dividend payout ratios. Third, earnings response coefficients are positively associated with the dividend payout ratio.

CHAPTER 3

HYPOTHESES DEVELOPMENT

Motivated by the dividend restrictions in debt contracts, Daniel et al. (2008) examine whether managers manipulate accruals upward when earnings before discretionary accruals are less than expected dividends. They find that over the period 1992-2005, dividend-paying firms manipulate earnings upward when they have positive debt and their pre-managed earnings are less than total dividends in the prior year. Consistent with their contract covenant argument, they find no upward accruals management for dividend payers without debt.

Managers want to maintain a consistent dividend policy, and they would sell assets, lay off employees, borrow heavily, or bypass positive net present value projects before they would cut dividends (Brav et al., 2005). Given the dominance of the dividend level target (Baker and Powell, 2000; Baker et al., 2001; and Brav et al., 2005), I expect that managers focus on the expected dividend level before they consider the expected dividend payout ratio. When pre-managed earnings fall short of expected dividends, maintaining the expected dividends results in a payout ratio of over 100 percent, giving rise to the problem of dividend sustainability.[14] Manipulating earnings upward through real activities helps firms smooth the payout ratio while meeting dividend targets, and increases firms' capacity to pay cash dividends. I expect that dividend payers will

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[14] The payout ratio will exceed 100 percent if earnings are smaller than dividend payments. The higher the current payout ratio, especially when it exceeds 100 percent, the more difficult it is for managers to achieve the current payout ratio in the future. On the other hand, money managers regard a payout ratio below 60% as comfortable since it measures dividend sustainability (Hogan, 2010; Laise 2010).

manipulate earnings upward to mitigate the shortfall of pre-managed earnings when pre-managed earnings are below expected dividend levels. Consistent with Daniel et al. (2008), I define dividend payers as firms that paid dividends in the prior year, and I proxy expected dividends as dividends paid in the prior year. For non-payers, I proxy expected dividends as zero. My first hypothesis is:

H1: Dividend payers manipulate earnings upward through real activities to meet dividend level targets when pre-managed earnings fall short of last year's dividends.

The Daniel et al. (2008) study has two unresolved issues. First, it makes no accruals management predictions when pre-managed earnings exceed expected dividend levels. To address this issue, my second and third hypotheses focus on situations where pre-managed earnings exceed expected dividend levels.[15]

Daniel et al. (2008) find that firms manipulate earnings upward to maintain dividend levels, and the analysis in section 2.2 suggests that smoothing the dividend level and the pay-out ratio is important to managers. The earnings management literature suggests that firms have incentives to manipulate earnings downward when pre-managed earnings exceed expected earnings and upward when pre-managed earnings fall short of expected earnings. I proxy expected earnings as earnings in the prior year. I argue that when pre-managed earnings exceed last year's dividends, dividend payers have stronger incentives to manipulate earnings downward (upward) than non-payers in years of earnings increases (decreases) to smooth payout ratios and dividend levels. When pre-managed earnings exceed last year's dividends and earnings, increases in current dividends increase the historical dividend benchmark for future periods. If managers want

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[15] For non-payers, the classification of whether or not pre-managed earnings exceed expected dividend levels is based on whether or not the firm reports profits because expected dividends are zero in this case.

to smooth dividend streams and do not fully adjust dividends as suggested by earnings increases, the current dividend to earnings ratio falls below the target payout ratio. I define this partial adjustment as dividend conservatism. Manipulating earnings downward helps dividend payers mitigate the decline in payout ratios while smoothing dividends.[16] On the other hand, when pre-managed earnings exceed lagged dividends but fall short of lagged earnings, firms have incentives to maintain their dividend levels. If managers do not decrease dividends as suggested by earnings declines, the current dividend to earnings ratio exceeds the target payout ratio, increasing the payout ratio benchmark for future periods. Manipulating earnings upward helps payers to smooth payout ratios while maintaining dividend levels. My hypotheses 2a and 2b are:

H2a: Dividend payers manipulate earnings downward through real activities to a greater extent than non-payers when pre-managed earnings equal or exceed both last year's dividends and last year's earnings.

H2b: Dividend payers manipulate earnings upward through real activities to a greater extent than non-payers when pre-managed earnings equal or exceed last year's dividends but fall short of last year's earnings.

My above discussion about the difference between payers and non-payers is built on the argument that payers follow a conservative dividend policy and try to smooth payout ratios. To shed light on the effect of dividend policy on earnings management, I identify payers that are likely to follow a conservative policy and examine the difference in earnings management behavior of payers. I define the pre-managed payout ratio as dividends paid in year t divided by year t pre-managed earnings. When pre-managed

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[16] Lintner (1956) finds that managers feel pressure to increase dividend distributions when there is a substantial increase in profitability.

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earnings exceed both last year's dividends and last year's earnings, suspect payers are those most likely to follow conservative dividend policies and thus experience decreases in pre-managed payout ratios in years of earnings increases. In contrast, non-suspect payers are those least likely to follow conservative dividend policies. However, when pre-managed earnings exceed last year's dividends but fall short of last year's earnings, suspect payers are those with increases in pre-managed payout ratios. Manipulating earnings downward (upward) helps suspect payers mitigate declines (increases) in payout ratios when pre-managed earnings exceed (fall short of) last year's earnings. I expect that suspect payers manipulate earnings downward (upward) to a greater extent to smooth dividend levels and payout ratios than non-suspect payers when pre-managed earnings exceed both last year's dividends and last year's earnings (when pre-managed earnings exceed last year's dividends but fall short of last year's earnings). If dividend policy is irrelevant to financial reporting choices, I should not observe any difference in upward or downward earnings management between suspect payers and non-suspect payers. My third hypothesis examines differences between suspect and non-suspect dividend payers:

H3a: Suspect dividend payers manipulate earnings downward through real activities to a greater extent than non-suspect dividend payers when pre-managed earnings equal or exceed both last year's dividends and last year's earnings.

H3b: Suspect dividend payers manipulate earnings upward through real activities to a greater extent than non-suspect dividend payers when pre-managed earnings equal or exceed last year's dividends but are below last year's earnings.

The second unresolved question in Daniel et al.'s (2008) study is whether dividend paying firms without debt manipulate earnings via real activities manipulation. I

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discuss more about this issue in section 6. Appendix A contains a comprehensive description of all the variables I use in my study. Appendix B provides illustrations for sample classification.

CHAPTER 4

DATA AND METHODOLOGY

I examine the direction and magnitude of manipulation of cash flow from operations (CFO), selling, general and administrative expense (SGA), research and development expense (RD), and gain from sale of assets (GAIN). My sample consists of all firms in Compustat's Execucomp database between 1992 and 2009 with sufficient annual data to calculate the stated variables shown in Appendix A. Consistent with prior literature I omit firms in regulated industries, banks, and financial institutions (Roychowdhury, 2006; Daniel et al., 2008). To control for outliers, I delete firm-years with dividends and payout ratios at the extreme 99th percentile levels and all the other variables at the 1st and 99th percentiles of their respective distributions (Burgstahler and Dichev, 1997; Dechow, Kothari and Watts, 1998; Dechow, Richardson and Tuna, 2003).[17]

I estimate abnormal cash flows using a modified version of the Roychowdhury (2006) CFO model. Specifically, I regresses CFO_t/A_{t-1} (CFO_t = cash flow from operations; A_{t-1} = last year's total assets) on an intercept, a scaled intercept $1/A_{t-1}$, sales ($Sales_t/A_{t-1}$), and change in sales (SC_t/A_{t-1}). To control for the effects of firm characteristics on firms' ability to generate cash flows from sales within an industry-year, I also include profitability (income before extraordinary items ($IBEI_{t-1}/A_{t-1}$), profit margin (ROS_{t-1} = operating income before depreciation$_{t-1}$/Sales $_{t-1}$), firm size ($SIZE_{t-1}$ = natural log of MV_{t-1}, where MV_{t-1} = lagged market value of common equity), and age (AGE_t = years of firm

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[17] Specifically, outliers for all the variables are controlled for in the models to estimate abnormal CFO (or SGA, RD and GAIN) and in the hypotheses tests. I also control for outliers in earnings available to common shareholders (E) since I use it to calculate my main independent variables, namely, shortfall of pre-managed earnings (DEFICIT) and pre-managed earnings changes (PMEC). The abnormal CFO (or SGA, RD and GAIN) models are estimated after controlling for outliers for all the variables.

age, which is the difference between the current year and the first year the firm appears in Compustat).[18] I estimate abnormal SGA, abnormal RD, and abnormal GAIN using the models adopted by Gunny (2009). $RCFO_t$ ($RSGA_t$, RRD_t, $RGAIN_t$) is the residual from the cash flow model (SGA model, RD model, GAIN model), and $ACFO_t$ ($ASGA_t$, ARD_t, $AGAIN_t$) is the dollar value of abnormal cash flows (abnormal SGA expenses, abnormal RD expenses, and abnormal GAIN) obtained by multiplying the residual by A_{t-1}.

$$CFO_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 (Sales_t/A_{t-1}) + \beta_2 (SC_t/A_{t-1}) + \beta_3 (IBEI_{t-1}/A_{t-1}) + \beta_4 ROS_{t-1}$$
$$+ \beta_5 SIZE_{t-1} + \beta_6 AGE_t + \acute{\varepsilon}_t$$

$$SGA_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3 (FUND_t/A_{t-1}) + \beta_4 (SC_t/A_{t-1}) + \beta_5$$
$$(SD_t * SC_t/A_{t-1}) + \acute{\varepsilon}_t$$

$$RD_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3 (FUND_t/A_{t-1}) + \beta_4 (RD_{t-1}/A_{t-1}) + \acute{\varepsilon}_t$$

$$GAIN_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3 (FUND_t/A_{t-1}) + \beta_4 (PPES_t/A_{t-1}) +$$
$$\beta_5 (INVS_t/A_{t-1}) + \acute{\varepsilon}_t$$

Following prior literature (Roychowdhury, 2006; Gunny, 2009), I estimate these regressions for each industry-year with at least 15 observations. My sample for H1 (H2) is all firm-years with $PME_t < DIV_{t-1}$ ($PME_t \geq DIV_{t-1}$). For non-payers, the classification of whether or not pre-managed earnings exceed expected dividend levels is based on whether or not the firm reports profits because DIV_{t-1} is zero in this case.[19] I measure

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[18] Industries are classified by two-digit Standard Industrial Classification (SIC) code. Cohen and Zarowin (2010, p. 6) argue that this approach "partially controls for industry-wide changes in economic conditions that affect total accruals while allowing the coefficients to vary across time." Additional control variables are consistent with the prior literature that controls for measurement errors that might be correlated with firm characteristics (Roychowdhury, 2006; Cohen and Zarowin, 2010)

[19] Non-payers with negative pre-managed earnings are included in the H1 sample.

earnings available to common shareholders (E) as income before extraordinary items minus preferred dividends (Daniel et al., 2008). Consistent with prior literature (Bartov, 1993; Daniel et al., 2008; Dechow et al., 2010), I estimate pre-managed earnings (PME) as $E_t - ACFO_t$, or $E_t + ASGA_t$, or $E_t + ARD_t$, or $E_t - AGAIN_t$, depending on the proxy for real earnings management. I use the following regression model to test the first hypothesis:

$$REM = \beta_0 + \beta_1 D + \beta_2 NOND * DEFICIT + \beta_3 D * DEFICIT + \beta_4 BONUS + \beta_5 STOCK +$$
$$\beta_6 BTM + \beta_7 LEV + \beta_8 RE + \beta_9 LAGE + \beta_{10} \text{Fixed effects} + \varepsilon \qquad (1)$$

Following Daniel et al. (2008), the dependent variable is the dollar value of real earnings management, namely, ACFO, ASGA, ARD and AGAIN. DEFICIT is the shortfall of pre-managed earnings relative to lagged dividends = $DIV_{t-1} - PME_t$. For non-payers (NOND), DEFICIT is the shortfall of pre-managed earnings from zero profit. The variable of primary interest is the interaction between the dividend payer dummy (D) and DEFICIT, i.e., D * DEFICIT. Positive (negative) coefficients on β_3 for abnormal CFO and GAIN models (abnormal SGA and RD models) are consistent with payers manipulating earnings upward to meet the dividend level target.

I control for compensation incentives by including bonus (BONUS) and stock incentive ratio (STOCK) (Bergstresser and Philippon, 2006；Cohen, Dey and Lys, 2008). Since Jiang, Petroni and Wang (2010) find that the role of chief financial officer equity incentives on accruals management is greater than that of chief executive officer equity incentives, I estimate compensation incentives for both chief financial officers and chief

executive officers. I expect positive (negative) coefficients on BONUS and STOCK variables for abnormal CFO and GAIN models (abnormal SGA and RD models). Following Daniel et al. (2008), I control for growth opportunities (BTM = Book value$_{t-1}$/ MV$_{t-1}$), leverage (LEV = Total debt$_{t-1}$/A$_{t-1}$), and retained earnings (RE = Retained earnings$_{t-1}$/A$_{t-1}$). I include these control variables to be consistent with Daniel et al. (2008) but I have no expectation regarding their signs because Daniel et al. (2008) did not obtain consistent effects of these variables. I include prior year earnings level (LAGE) to control for earnings management to meet the lagged earnings benchmark. Positive (Negative) coefficients on β_9 for abnormal CFO and GAIN models (abnormal SGA and RD models) suggest that lagged earnings are an important earnings benchmark.

The samples for H2a, and H2b are firms with PME$_t$ ≥DIV$_{t-1}$ and PME$_t$ ≥ E$_{t-1}$, and firms with PME$_t$ ≥ DIV$_{t-1}$ and PME$_t$ < E$_{t-1}$, respectively. I use model (2) to test H2.

$$REM = \beta_0 + \beta_1\,D + \beta_2\,PMEC + \beta_3\,D * PMEC + \beta_4\,BONUS + \beta_5\,STOCK + \beta_6\,BTM + \beta_7$$
$$LEV + \beta_8\,RE + \beta_9\,Fixed\ effects + \varepsilon \qquad\qquad (2)$$

To examine the impact of REM's effect on earnings changes (Roychowdhury, 2006; Dechow et al., 2010), I use an asset scaled earnings management measure, namely, RCFO, RSGA, RRD and RGAIN. Accordingly, I measure changes in pre-managed earnings (PMEC) as (PME$_t$ − E$_{t-1}$) /A$_{t-1}$. Negative (positive) coefficients on β_3 for abnormal CFO and GAIN models (SGA and RD models) are consistent with the notion that payers manipulate earnings to a greater extent than non-payers.[20]

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[20] I have different estimates on the signs of β_3 depending on the circumstances because DEFICIT in model 1 is DIV$_{t-1}$ − PME$_t$, while PMEC in model 2 and 3 equals (PME$_t$ − E$_{t-1}$)/A$_{t-1}$. The variables are defined to be

The sample for H3 includes dividend payers where PME exceeds prior year dividends and payout ratios can be reasonably calculated. Following Grullon et al. (2002), I calculate the current payout ratio (DIV_t/E_t) and pre-managed payout ratio (DIV_t/PME_t) for firms with positive E and PME. I also require that firms have at least three years of payout ratios available in order to measure their long-term target payout ratios. For H3a, the sample includes dividend payers with sufficient pre-managed earnings to cover prior year dividends and earnings ($D = 1$, $PME_t \geq DIV_{t-1}$ and $PME_t \geq E_{t-1}$). For H3b, the sample includes dividend payers with sufficient pre-managed earnings to cover prior year dividends but fall short of last year's earnings ($D=1$, $PME_t \geq DIV_{t-1}$ and $PME_t < E_{t-1}$). The purpose of this restriction is to examine the difference in earnings management behavior between payers following a conservative dividend policy and other payers that are in the same financial position. I use model (3) and model (4) to test H3a and H3b, respectively.

$$REM = \beta_0 + \beta_1\,SUSPECTD1 + \beta_2\,PMEC + \beta_3\,SUSPECTD1 * PMEC + \beta_4\,BONUS + \beta_5\,STOCK + \beta_6\,BTM + \beta_7\,LEV + \beta_8\,RE + \beta_9\,Fixed\ effects + \varepsilon \qquad (3)$$

$$REM = \beta_0 + \beta_1\,SUSPECTD2 + \beta_2\,PMEC + \beta_3\,SUSPECTD2 * PMEC + \beta_4\,BONUS + \beta_5\,STOCK + \beta_6\,BTM + \beta_7\,LEV + \beta_8\,RE + \beta_9\,Fixed\ effects + \varepsilon \qquad (4)$$

SUSPECTD1 in model (3) is an indicator variable for suspect payers that are likely to follow a conservative dividend policy and thus experience decreases in pre-managed payout ratios (relative to their long-term target payout ratio, AVGRATIO) in years of earnings increases ($D = 1$, $PME_t \geq DIV_{t-1}$, $PME_t \geq E_{t-1}$ and $DIV_t/PME_t <$

consistent with prior literature.

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AVGRATIO), and non-suspect payers are those who are less likely to follow a conservative dividend policy. Negative (positive) coefficients on β_3 for RCFO and RGAIN models (RSGA and REXP models) are consistent with the notion that suspect payers manipulate earnings downward to a greater extent as the increases in pre-managed earnings get larger. In addition, negative (positive) coefficients β_1 for RCFO and RGAIN models (RSGA and REXP models) are consistent with the notion that suspect payers manipulate earnings downward to a greater extent, controlling for the level of PMEC.

SUSPECTD2 in model (3) is an indicator variable for suspect payers that are likely to follow a conservative dividend policy and thus experience increases in pre-managed payout ratios (relative to long-term target payout ratio) in years of earnings decreases ($D = 1$, $PME_t \geq DIV_{t-1}$, $PME_t < E_{t-1}$ and $DIV_t / PME_t > AVGRATIO$), and non-suspect payers are those that are less likely to follow a conservative dividend policy. Negative (positive) coefficients β_3 for RCFO and RGAIN models (RSGA and REXP models) are consistent with the notion that suspect payers manipulate earnings upward to a greater extent as the decreases in pre-managed earnings get larger. In addition, positive (negative) coefficients β_1 for RCFO and RGAIN models (RSGA and REXP models) are consistent with the notion that suspect payers manipulate earnings upward to a greater extent, controlling for the level of PMEC.

CHAPTER 5

RESULTS

Table 1 reports the regression results for the CFO, SGA, RD, and GAIN models across industry-years. Consistent with Roychowdhury (2006), I find significantly positive coefficients on sales ($\beta_1 = 0.058$) and sales change ($\beta_2 = 0.021$) for the CFO model. Moreover, the coefficients on profitability ($\beta_3 = 0.228$), profit margin ($\beta_4 = 0.465$) and firm size ($\beta_5 = 0.006$) are significantly positive, while the coefficient on firm age is significantly negative ($\beta_6 = -0.000$). For the SGA model, consistent with Gunny (2009), I find a significantly negative coefficient on firm size ($\beta_1 = -0.14$), and significantly positive coefficients on Tobin's Q ($\beta_2 = 0.015$), internal funds ($\beta_3 = 0.058$), and sales change ($\beta_4 = 0.111$). I also find a significantly negative coefficient on the interaction between the sales decrease dummy and sales change ($\beta_5 = -1.152$).[21] Consistent with Gunny (2009), for the RD model, I find significantly positive coefficients on firm size ($\beta_1 = 0.001$), internal funds ($\beta_3 = 0.042$), and last year's RD ($\beta_4 = 0.788$).[22] Also consistent with Gunny (2009), for the GAIN model, the coefficients on internal funds ($\beta_3 = 0.004$) and sale of PPE ($\beta_4 = 0.439$) are significantly positive. Unlike Gunny (2009) who found a significantly negative coefficient on Tobin's Q and an insignificant coefficient on sale of investment, the coefficient on sale of investment is significantly positive ($\beta_5 = 0.010$) and the coefficient on Tobin's Q is insignificant. The adjusted R-squares from the CFO, SGA, RD, and GAIN models are 0.457, 0.209, 0.858, and 0.131, respectively.

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[21] Gunny (2009) does not find a significant coefficient on the interaction term.
[22] Gunny (2009) finds significant positive coefficient on Tobin's Q (0.002), while I find insignificant negative coefficient on Tobin's Q.

Table 2 provides descriptive statistics for each model. The main dependent and independent variables for H1 are the un-scaled abnormal values and DEFICIT. For payers (non-payers), DEFICIT measures the shortfall of pre-managed earnings relative to last year's dividends (positive earnings). Negative DEFICIT suggests that on average, pre-managed earnings are non-negative and they exceed last year's dividend. For H2 and H3, the main dependent and independent variables are scaled abnormal values and PMEC. For all the models, the abnormal estimates (RCFO, RSGA, RRD, and RGAIN) have a mean of zero, and the estimates for PMEC have a mean of 0.01. The percentage of dividend payers ranges from 34% in the GAIN model to 47% in the CFO model. The average dividend targets ranges from 65 million in the GAIN model to 120 million in the RD model. The mean of AVGRATIO is about 0.33 for all four models, with the smallest value in the GAIN model (0.31), and largest value in the CFO model (0.35).

Table 3 reports the univariate results to examine the direction of earnings management for the three sub-samples for H1, H2a, and H2b. For each group, the first line reports the assets scaled value and the second line reports the dollar value. The results suggest that on average, firms manipulate earnings upward through CFO, SGA, RD, and GAIN when pre-managed earnings fall short of last year's dividends. In addition, firms manipulate earnings downward when pre-managed earnings equal or exceed both

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last year's dividends and last year's earnings as suggested by negative RCFO and RGAIN as well as positive RSGA and RRD. On the other hand, firms manipulate earnings upward when pre-managed earnings equal or exceed last year's dividends but fall short of last year's earnings as indicated by positive RCFO as well as negative RSGA and RRD.

[Insert Table 3]

To test my hypotheses, I run a cross-sectional regression with industry and year dummies as fixed effects. Table 4 provides the multiple-regression results for H1. Consistent with H1, β_3 is significantly positive in the ACFO model ($\beta_3 = 0.335$, $p < 0.01$), suggesting that payers manipulate earnings upward to meet the prior year's dividend target. Specifically, payers report less SGA expense and R&D expense as the earnings shortfall increases, indicated by the negative coefficients on D*DEFICIT for the ASGA ($\beta_3 = -0.789$, $p < 0.01$) and ARD models ($\beta_3 = -0.233$, $p < 0.01$). On the other hand, the results from the AGAIN model suggest that payers recognize more gain or less loss from sales of assets as the earnings shortfall increases ($\beta_3 = 0.023$, $p = 0.015$). In summary, the results suggest that payers manipulate earnings upward through real activities to mitigate the shortfall of pre-managed earnings relative to the prior year's dividend, consistent with the notion that the expected dividend is an important earnings benchmark.

[Insert Table 4]

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Table 5 provides the multiple-regression results for H2. Panel A shows that consistent with H2a, β_3 is significantly negative in the RCFO model (β_3 = -0.231, p < 0.01), suggesting that payers manipulate earnings downward through real activities to a greater extent than non-payers when pre-managed earnings exceed both last year's dividends and earnings. Specifically, payers report more SGA expense and R&D expense as earnings increases get larger, indicated by the positive coefficients on D*PMEC for both the RSGA (β_3 = 0.612, p < 0.01) and RRD models (β_3 = 0.025, p = 0.075). In addition, the results from the RGAIN model suggest that payers recognize fewer gains or more losses than non-payers as earnings increases get larger (β_3 = -0.024, p <0.01). In summary, the results suggest that payers manipulate earnings downward through real activities to a greater extent than non-payers when pre-managed earnings exceed both last year's dividends and earnings.

Panel B shows that consistent with H2b, β_3 is significantly negative in the RCFO model (β_3 = -0.211, p < 0.01), suggesting that payers manipulate earnings upward through real activities to a greater extent than non-payers when pre-managed earnings exceed last year's dividends but fall short of last year earnings. Specifically, payers report less SGA and R&D expense as earnings decreases get larger, indicated by the positive coefficients on D*PMEC for the RSGA model (β_3 = 0.183, p < 0.01) and RRD model (β_3 = 0.053, p = 0.087). On the other hand, the results from the RGAIN model suggest that payers do not manipulate sales of assets to improve earnings after controlling for compensation incentives. In summary, the results suggest that payers manipulate earnings upward through real activities to a greater extent than non-payers when pre-managed earnings exceed last year's dividends but fall short of last year's earnings.

[Insert Table 5]

Table 6 examines differences among dividend payers. Panels A and B report results for H3a and H3b, respectively. Consistent with H3a (Panel A), β_1 and β_3 are significantly negative in the RCFO model ($\beta_1 = -0.013$, $p < 0.01$, and $\beta_3 = -0.233$, $p < 0.01$), suggesting that suspect payers manipulate earnings downward through real activities to a greater extent than non-suspect payers when pre-managed earnings exceed both last year's dividends and earnings. Specifically, suspect payers report more SGA expense as earnings increases get larger, indicated by the positive coefficients on SUSPECTD1*PMEC for the RSGA model ($\beta_3 = 0.204$, $p = 0.062$), and they on average recognize more SGA expense ($\beta_1 = 0.009$, $p = 0.018$). For the RRD model, while the coefficient on SUSPECTD1*PMEC is insignificant, the coefficient on suspect payer dummy (SUSPECTD1) is significantly positive ($\beta_1 = 0.002$, $p = 0.034$), suggesting that suspect payers on average report larger R&D expense, controlling for the level of PMEC. On the other hand, the negative coefficient on SUSPECTD1 for the RGAIN model suggests that suspect payers on average recognize less gains or more losses than non-suspect payers to manipulate earnings downward ($\beta_1 = -0.002$, $p < 0.01$) , controlling for the level of PMEC. In summary, the results suggest that suspect payers manipulate earnings downward through real activities to a greater extent than non-payers when pre-managed earnings exceed last year's dividends and earnings.

Consistent with H3b (Panel B), β_1 is significantly positive ($\beta_1 = 0.008$, $p < 0.01$) and β_3 is significantly negative ($\beta_3 = -0.189$, $p < 0.01$) in the RCFO model, suggesting that suspect payers manipulate earnings upward through real activities to a greater extent

than non-suspect payers when pre-managed earnings exceed last year's dividends but fall short of last year's earnings. Specifically, payers report less SGA expense as earnings decreases get larger, indicated by a positive coefficient on SUSPECTD2*PMEC (β_3 = 0.427, $p < 0.01$) for the RSGA model, and they on average recognize less SGA expense (β_1 = -0.013, $p < 0.01$). For the RRD model, while the coefficient on SUSPECTD2*PMEC is insignificant, the coefficient on the suspect payer dummy (SUSPECTD2) is significantly negative (β_1 = -0.002, $p = 0.065$), suggesting that suspect payers on average report lower R&D expense, controlling for the level of PMEC. On the other hand, the positive coefficient on SUSPECTD2 for the RGAIN model suggests that suspect payers on average recognize more gains or less losses than non-suspect payers to manipulate earnings upward (β_1 = 0.003, $p = 0.012$). In summary, the results suggest that suspect payers manipulate earnings upward through real activities to a greater extent than non-suspect payers when pre-managed earnings exceed last year's dividends but fall short of last year's earnings.

[Insert Table 6]

CHAPTER 6

DIVIDEND PAYING FIRMS WITHOUT DEBT

The second unsolved question in Daniel et al.'s (2008) study is whether dividend paying firms without debt manipulate earnings via real activities. Prior literature shows that firms' ability to manipulate accruals may be restricted (Dechow and Skinner, 2000; Barton and Simko, 2002; Brown and Pinello, 2007; Cohen et al., 2008), and that firms are more likely to manage real activities than accruals (Graham et al., 2005; Brav et al., 2005). Unlike accruals management, real earnings management affects cash flows. Thus, unlike accruals management, real earnings management affects firms' ability to pay cash dividends. As such, I expect that real earnings manipulation is a more powerful test of dividend policy driving earnings management than accruals management.

My prediction for H1 is consistent with the debt covenant argument of Daniel et al. (2008). However, my argument is based on the priority and interaction of dividend level and dividend payout ratio smoothing, which predicts similar results for dividend payers with debt and those without debt. To provide support for the dividend policy related earnings management argument, I investigate two types of dividend payers separately: those with positive debt and those with zero debt. [23]

Table 7 reports the regression results for firms with and without debt. For brevity, I only report coefficients on variables pertinent to my hypothesis tests. Panel A shows that payers manipulate CFO upward and/or manipulate SGA downward to mitigate the shortfall of PME relative to last period's dividends regardless of whether or not they have

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[23] Similar to Daniel et al. (2008), I examine both public and private debt. The data are obtained from Compustat. No debt means zero "Long-Term Debt" and zero "Debt in Current Liabilities".

debt. Panel B indicates that payers manipulate CFO or GAIN downward, and/or SGA upward to a greater extent than non-payers when PME exceeds both last year's dividends and earnings, in cases of positive or zero debt. Panel C reports that payers manipulate CFO upward to a greater extent than non-payers when PME exceeds last year's dividends but fall short of last year's earnings, in cases of positive or zero debt. Under this situation, payers with debt are more likely to deduct RD expenses, while payers without debt are more likely to reduce SGA expenses. In summary, my results suggest that payers manipulate earnings through real activities to maintain consistency with their dividend policies regardless of whether or not they have debt.

[Insert Table 7]

CHAPTER 7

SUPPLEMENTAL TEST

My main dependent variable is abnormal cash flows (abnormal SGA expense, abnormal RD expense, or abnormal GAIN). My main independent variable is based on pre-managed earnings, defined alternately as $E_t - ACFO_t$, $E_t + ASGA_t$, $E_t + ARD_t$, or $E_t - AGAIN_t$. This "backing out" method could lead to a potential spurious relation between the dependent variable and the independent variables (Lim and Lustgartern, 2002; Elgers, Pfeiffer and Porter, 2003). I conduct additional analyses to ensure that my findings are not driven by potential spurious association by randomly assigning the calculated abnormal cash flows (abnormal SGA expense, abnormal RD expense, or abnormal GAIN) to the sample firms and re-estimating DEFICIT and PMEC using the new measure (Daniel et al. 2008). This process defines earnings management as zero plus randomly assigned measurement error. I replicate my tests of model 1 and model 2 using randomly assigned measurement error, and repeat the process 1,000 times. The results from the 1,000 iterations represent the effect of measurement error on my proxy for real earnings management (Lim and Lustgartern, 2002; Elgers et al., 2003). I then compare the actual coefficients of the regressions using my proxy variable with the mean of the coefficients from the 1,000 iterations using the randomly assigned measurement error. I calculate p-values as the proportion of cases where the coefficients from the randomization have a greater magnitude than the actual coefficients. A small p-value suggests that the actual coefficients are not likely driven by measurement error. The results, as reported in Table

8,[24] indicate that the H1 and H2 results for the CFO model and SGA model are not likely driven by measurement error. More specifically, for the CFO model, the p-values of 0.000 for H1 and H2a suggest that none of the coefficients from the 1,000 iterations has greater magnitude than the actual coefficients, while the p-value of 0.041 for H2b suggests that there are 41 cases out of the 1,000 iterations where the coefficients have a greater magnitude than the actual coefficients. The H1 and the H2a results for the RD model and GAIN model hold after controlling for the possible effect of measurement error.

[Insert Table 8]

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[24] For simplicity, I only report the results for the coefficients pertinent to my hypothesis tests. H2b for the GAIN model is not supported. So I did not conduct the simulation test.

CHAPTER 8

CONCLUSIONS

Survey papers suggest that both prior period's dividends and target payout ratios are important determinants of current dividends, and payers make partial adjustments in dividends given current financial performance. In more recent years, dividend levels have become a more important target than dividend payout ratios. Daniel et al. (2008) find that payers with debt manage accruals upwards to attain dividend targets when pre-managed earnings are below last year's dividends. I investigate whether dividend payers manipulate earnings through real activities to smooth dividend levels and dividend payout ratios.

Using Compustat's Execucomp database, I document that dividend policy has an incremental effect on both upward and downward real earnings management. First, I show that payers manipulate earnings upward through real activities to mitigate the shortfall of pre-managed earnings relative to last year's dividends when the current year's pre-managed earnings are less than last year's dividends, suggesting that last year's dividend level is an important earnings benchmark. Second, I find that when the current year's pre-managed earnings exceed last year's dividend payments, dividend payers manipulate earnings downward (upward) to a greater extent than non-payers when pre-managed earnings exceed (fall short of) prior year earnings. Third, within dividend payers, I show that payers that are more likely to follow a conservative dividend policy manipulate earnings to a greater extent than payers that are less likely to follow a conservative dividend policy, consistent with the importance of dividend policy as a

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determinant of real earnings management. Fourth, I find evidence of both upward and downward earnings manipulations for payers with and without debt.

My study contributes to the earnings management and dividend payout policy literatures in several ways. First, I provide a more complete analysis of the dividend policy driving real earnings management. Examining upward and downward real earnings management behavior is important since Cohen and Zarowin (2010) show that real earnings management has more severe effects on future financial performance than does accruals management, and both upward and downward manipulation may adversely impact future performance (Degeorge et al., 1999). Daniel et al. (2008) find that payers manage accruals upwards to attain dividend targets when pre-managed earnings are below last year's dividends. They make no prediction about earnings management when pre-managed earnings exceed last year's dividends. I extend Daniel et al. (2008) by identifying situations where managers have stronger incentives to manipulate earnings downward and upward through real activities when pre-managed earnings exceed lagged dividends.

Second, I provide more direct evidence about the role of dividend policy in real earnings management. In addition to comparing payers with non-payers, I compare payers that are more likely to follow conservatism dividend policies with payers that are less likely to follow conservatism dividend policies when pre-managed earnings exceed last year's dividends. My results support the view that dividend policies have an incremental effect on real earnings management.

Third, my argument is based on the priority and interaction of dividend level and dividend payout ratio smoothing, whereas Daniel et al. (2008)'s argument is based on

debt covenants. Daniel et al. (2008) show that dividend threshold driven upward accruals management is evident only in dividend payers with positive debt. I find that both dividend payers with and without debt manipulate earnings upward through real activities to mitigate the shortfall of pre-managed earnings relative to last year's dividends, supporting the dividend policy arguments.

CFO	Cash flow from operations
A	Total assets
SC	Sales change$_t$ = Sales$_t$ - Sales$_{t-1}$
DIV	Total common dividends
D	Dividend payer dummy$_t$, =1 if DIV$_{t-1}$ > 0 , 0 otherwise
NOND	Non-payer dummy, = 1-D
IBEI	Income before extraordinary items
ROS	Operating income before depreciation / sales
MV	Market value of common equity =common shares outstanding * year-end-price
SIZE	Natural log of market value of common equity
AGE	Age of firm at year t, which is the difference between year t and the first year in which the firm appears in COMPUSTAT.
RCFO	Residuals from the following regression for each industry-year: $$CFO_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 (Sales_t/A_{t-1}) + \beta_2 (SC_t/A_{t-1}) + \beta_3 (IBEI_{t-1}/A_{t-1}) + \beta_4 ROS_{t-1} + \beta_5 SIZE_{t-1} + \beta_6 AGE_t + \acute{\varepsilon}_t$$
ACFO	Dollar value of abnormal cash flows = RCFO$_t$ * A$_{t-1}$
RD	Research and development expense (R&D expense)
SGA	Selling, general and administrative expense, excluding RD
TQ	(MV + Book value of preferred stock + Long-term debt + Short-term debt) / assets
FUND	Internal funds = Income before extraordinary items + RD + Depreciation expense
SD	Dummy variable for sales decreases, =1 if Sales$_t$ < Sales$_{t-1}$, 0 otherwise
RSGA	Residuals from the following regression for each industry-year: $$SGA_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3$$

$$(FUND_t/A_{t-1}) + \beta_4\,(SC_t/A_{t-1}) + \beta_5\,(SD_t * SC_t/A_{t-1}) + \acute{\varepsilon}_t$$

ASGA	Dollar value of abnormal SGA = $RSGA_t * A_{t-1}$
RRD	Residuals from the following regression for each industry-year:

$$RD_t/A_{t-1} = \alpha_0 + \beta_0\,(1/A_{t-1}) + \beta_1\,SIZE_{t-1} + \beta_2\,TQ_t + \beta_3\,(FUND_t/A_{t-1})$$

$$+ \beta_4\,(RD_{t-1}/A_{t-1}) + \acute{\varepsilon}_t$$

ARD	Dollar value of abnormal RD = $RRD_t * A_{t-1}$
GAIN	Gain or loss from sale of property, plant and equipment and investment
PPES	Sale of property, plant and equipment
INVS	Sale of investment
RGAIN	Residuals from the following regression for each industry-year:

$$GAIN_t/A_{t-1} = \alpha_0 + \beta_0\,(1/A_{t-1}) + \beta_1\,SIZE_{t-1} + \beta_2\,TQ_t + \beta_3$$

$$(FUND_t/A_{t-1}) + \beta_4\,(PPES_t/A_{t-1}) + \beta_5\,(INVS_t/A_{t-1}) + \acute{\varepsilon}_t$$

AGAIN	Dollar value of abnormal GAIN = $RGAIN_t * A_{t-1}$
E	IBEI – preferred dividends
PME	Pre-managed earnings= $E_t - ACFO_t$, $E_t + ASGA_t$, $E_t + ARD_t$, or $E_t - AGAIN_t$, depending on the proxy for real earnings management.
DEFICIT	Shortfall of PME relative to lagged dividends$_t$ = $DIV_{t-1} - PME_t$
PMEC	Pre-managed earnings change$_t$ = $(PME_t - E_{t-1}) / A_{t-1}$
AVGRATIO	The average payout ratio for payers that have at least three years of payout ratios available, where payout ratio = DIV_t / E_t.
SUSPECTD1	= 1 if D=1, $PME_t \geq DIV_{t-1}$, $PME_t \geq E_{t-1}$, and $DIV_t / PME_t <$ AVGRATIO, 0 otherwise
SUSPECTD2	= 1 if D=1, $PME_t \geq DIV_{t-1}$, $PME_t < E_{t-1,}$ and $DIV_t / PME_t \geq$ AVGRATIO, 0 otherwise
BONUS	Executive bonus$_t$ /total compensation$_t$
SENSITIVE	0.01*stock price*(number of shares held by CEO and CFO + number of options held by CEO and CFO)

STOCK	Stock incentive ratio$_t$ = SENSITIVE$_t$ / (SENSITIVE + salary + bonus)$_t$
BTM	Book value of common equity$_{t-1}$/ MV$_{t-1}$
LEV	Total debt $_{t-1}$ / A$_{t-1}$
RE	Retained earnings$_{t-1}$ / A$_{t-1}$
LAGE	E$_{t-1}$
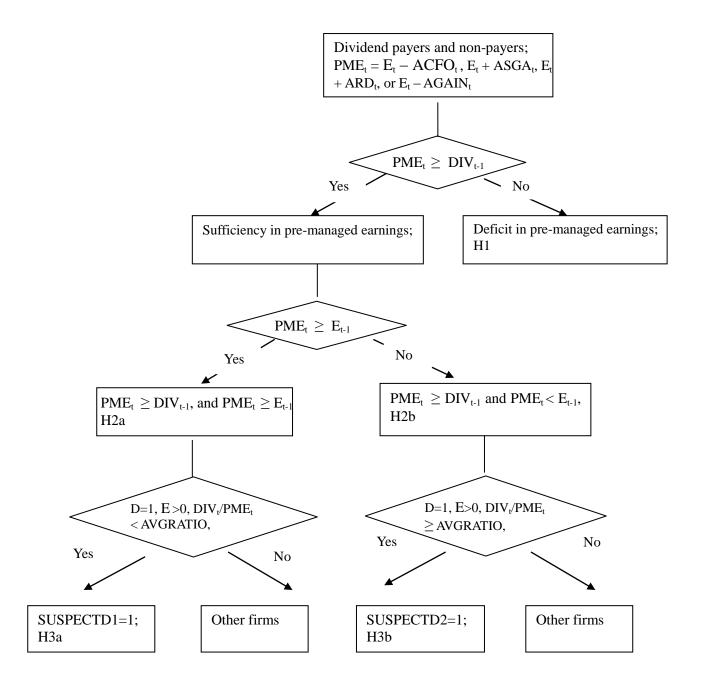
APPENDIX B

CONCEPT TREE FOR SAMPLE CLASSIFICATION

Dividend payers and non-payers;
$PME_t = E_t - ACFO_t$, $E_t + ASGA_t$, $E_t + ARD_t$, or $E_t - AGAIN_t$

$PME_t \geq DIV_{t-1}$

Yes → Sufficiency in pre-managed earnings;

No → Deficit in pre-managed earnings; H1

$PME_t \geq E_{t-1}$

Yes → $PME_t \geq DIV_{t-1}$, and $PME_t \geq E_{t-1}$ H2a

No → $PME_t \geq DIV_{t-1}$ and $PME_t < E_{t-1}$, H2b

$D=1$, $E > 0$, $DIV_t/PME_t < AVGRATIO$,

Yes → SUSPECTD1=1; H3a

No → Other firms

$D=1$, $E>0$, $DIV_t/PME_t \geq AVGRATIO$,

Yes → SUSPECTD2=1; H3b

No → Other firms

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TABLE 1

ESTIMATION OF THE NORMAL LEVEL OF CASH FLOW FROM OPERATIONS, SGA EXPENSES, R&D EXPENSES, AND GAIN ON SALE OF ASSETS

CFO model		SGA model		RD model		GAIN model	
Intercept	-0.077***	Intercept	0.282***	Intercept	-0.006***	Intercept	-0.001
$1/A_{t-1}$	1.052	$1/A_{t-1}$	8.495***	$1/A_{t-1}$	0.527***	$1/A_{t-1}$	-0.038
$Sales_t/A_{t-1}$	0.058***	$SIZE_{t-1}$	-0.14***	$SIZE_{t-1}$	0.001**	$SIZE_{t-1}$	0.000
SC_t/A_{t-1}	0.021***	TQ_t	0.015**	TQ_t	-0.000	TQ_t	-0.000
$IBEI_{t-1}/A_{t-1}$	0.228***	$FUND_t/A_{t-1}$	0.287***	$FUND_t/A_{t-1}$	0.042***	$FUND_t/A_{t-1}$	0.004*
ROS_{t-1}	0.465***	SC_t/A_{t-1}	0.111***	RD_{t-1}/A_{t-1}	0.788***	$PPES_t/A_{t-1}$	0.439***
$SIZE_{t-1}$	0.006***	$SD_t * SC_t/A_{t-1}$	-1.152*			$INVS_t/A_{t-1}$	0.010**
AGE_t	-0.000**						
# Ind.-Yr	324		191		204		117
Adj. R^2	0.457		0.209		0.858		0.131

*/**/*** represent statistical significance at 10%/5%/1% levels two-tailed.

CFO is cash flow from operations$_t$.
A_{t-1} is total assets$_{t-1}$.
SC_t is sales change$_t$ = Sales$_t$ - Sales$_{t-1}$.
$IBEI_{t-1}$ is income before extraordinary items$_{t-1}$.
ROS_{t-1} is operating income before depreciation$_{t-1}$/sales$_{t-1}$.
$SIZE_{r-1}$ is natural log of market value of common equity$_{t-1}$, where market value equals common shares outstanding * year-end-price
AGE_t is the age of the firm at year t, which is the difference between year t and the first year in which the firm appears in COMPUSTAT.
RD is research and development expense (R&D expense)$_t$.
SGA is selling, general and administrative expense$_t$, excluding RD$_t$.
TQ_t equals (MV + Book value of preferred stock + Long-term debt + Short-term debt)$_t$ / assets$_t$.
$FUND_r$ equals Internal funds$_r$ = (Income before extraordinary items + RD + Depreciation expense)$_t$.
SD is a dummy variable for sales decreases$_t$, =1 if Sales$_t$ < Sales$_{t-1}$, 0 otherwise.
GAIN is gain or loss from sale of property, plant and equipment and investment$_t$.
$PPES_t$ is sale of property, plant and equipment$_t$.
$INVS_t$ is sale of investment$_t$.

TABLE 2

DESCRIPTIVE STATISTICS

Panel A Descriptive statistics for the CFO model

Variable	Firm-Yr	Mean	Median	Std Dev	10th Pctl	90th Pctl
RCFO	13618	0.00	0.00	0.06	-0.07	0.07
ACFO	13618	-20.65	-0.10	249.00	-121.90	87.72
DEFICIT	13618	-135.73	-32.47	461.05	-384.51	45.70
PMEC	13618	0.01	0.01	0.11	-0.08	0.10
BONUS	13618	0.14	0.10	0.14	0.00	0.34
STOCK	13618	0.24	0.18	0.20	0.05	0.54
BTM	13618	0.47	0.39	0.36	0.15	0.86
LEV	13618	0.20	0.18	0.16	0.00	0.41
RE	13618	0.20	0.26	0.51	-0.12	0.60
D	13618	0.47	0.00	0.50	0.00	1.00
DIV $_{t-1}$	6410	93.88	22.53	201.95	2.78	251.98
AVGRATIO	4879	0.35	0.30	0.19	0.12	0.60

Panel B Descriptive statistics for the SGA model

Variable	Firm-Yr	Mean	Median	Std Dev	10th Pctl	90th Pctl
RSGA	8492	0.00	-0.01	0.11	-0.12	0.13
ASGA	8492	-27.86	-4.31	471.50	-206.70	156.99
DEFICIT	8492	-98.58	-22.75	627.04	-387.79	139.23
PMEC	8492	0.01	0.00	0.16	-0.15	0.17
BONUS	8492	0.13	0.09	0.14	0.00	0.33
STOCK	8492	0.25	0.19	0.20	0.06	0.55
BTM	8492	0.44	0.37	0.33	0.15	0.81
LEV	8492	0.17	0.15	0.15	0.00	0.38
RE	8492	0.17	0.26	0.62	-0.19	0.60
D	8492	0.42	0.00	0.49	0.00	1.00
DIV $_{t-1}$	3562	118.62	25.11	277.03	2.65	292.00
AVGRATIO	2337	0.33	0.30	0.19	0.12	0.57

Panel C Descriptive statistics for the RD model

Variable	Firm-Yr	Mean	Median	Std Dev	10th Pctl	90th Pctl
RRD	9170	0.00	0.00	0.03	-0.02	0.02
ARD	9170	-4.39	-0.02	114.76	-26.07	17.25
DEFICIT	9170	-122.09	-33.05	425.09	-337.84	36.81
PMEC	9170	0.01	0.01	0.12	-0.07	0.09
BONUS	9170	0.13	0.09	0.14	0.00	0.32

STOCK	9170	0.25	0.19	0.20	0.06	0.55
BTM	9170	0.44	0.37	0.33	0.15	0.81
LEV	9170	0.17	0.15	0.16	0.00	0.39
RE	9170	0.15	0.25	0.67	-0.23	0.59
D	9170	0.41	0.00	0.49	0.00	1.00
DIV_{t-1}	3792	119.92	26.02	274.02	2.65	294.00
AVGRATIO	2996	0.34	0.32	0.19	0.11	0.59

Panel D Descriptive statistics for the GAIN model

Variable	Firm-Yr	Mean	Median	Std Dev	10th Pctl	90th Pctl
RGAIN	5204	0.00	0.00	0.01	0.00	0.00
AGAIN	5204	-0.14	-0.13	30.37	-5.28	2.81
DEFICIT	5204	-83.72	-28.57	297.14	-238.95	40.54
PMEC	5204	0.01	0.01	0.16	-0.09	0.10
BONUS	5204	0.13	0.08	0.14	0.00	0.33
STOCK	5204	0.26	0.20	0.20	0.06	0.57
BTM	5204	0.41	0.35	0.29	0.14	0.75
LEV	5204	0.14	0.10	0.15	0.00	0.36
RE	5204	0.11	0.24	0.75	-0.35	0.61
D	5204	0.34	0.00	0.47	0.00	1.00
DIV_{t-1}	1777	65.06	17.00	146.90	2.05	160.42
AVGRATIO	1395	0.31	0.30	0.17	0.10	0.54

RCFO is residual from the following regression for each industry-year. ACFO equals $RCFO_t * A_{t-1}$.

$$CFO_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 (Sales_t/A_{t-1}) + \beta_2 (SC_t/A_{t-1}) + \beta_3 (IBEI_{t-1}/A_{t-1}) + \beta_4 ROS_{t-1} + \beta_5 SIZE_{t-1} + \beta_6 AGE_t + \acute{\epsilon}_t$$

RSGA is residual from the following regression for each industry-year. ASGA equals $RSGA_t * A_{t-1}$.

$$SGA_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3 (FUND_t/A_{t-1}) + \beta_4 (SC_t/A_{t-1}) + \beta_5 (SD_t * SC_t/A_{t-1}) + \acute{\epsilon}_t$$

RRD is residual from the following regression for each industry-year. ARD equals $RRD_t * A_{t-1}$.

$$RD_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3 (FUND_t/A_{t-1}) + \beta_4 (RD_{t-1}/A_{t-1}) + \acute{\epsilon}_t$$

RGAIN is residual from the following regression for each industry-year. AGAIN equals $RGAIN_t * A_{t-1}$.

$$GAIN_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3 (FUND_t/A_{t-1}) + \beta_4 (PPES_t/A_{t-1}) + \beta_5 (INVS_t/A_{t-1}) + \acute{\epsilon}_t$$

E is (income before extraordinary items – preferred dividends).
PME is pre- managed earnings$_t$= E_t – $ACFO_t$, E_t + $ASGA_t$, E_t + ARD_t, or E_t – $AGAIN_t$, depending on the proxy for real earnings management.
DIV is total common dividends$_t$.
DEFICIT is the shortfall of PME relative to lagged dividends = DIV_{t-1} – PME_t
PMEC is Pre-managed earnings change = $(PME_t – E_{t-1}) / A_{t-1}$.
BONUS equals Executive bonus$_t$ /total compensation$_t$.
SENSITIVE equals 0.01*stock price*(number of shares held by CEO and CFO + number of options held by CEO and CFO)
STOCK is Stock incentive ratio$_t$ = $SENSITIVE_t$ / $(SENSITIVE + salary + bonus)_t$

BTM is book value of common equity$_{t-1}$/ market value of common equity$_{t-1}$.

LEV is total debt$_{t-1}$/ A_{t-1}.

RE is retained earnings$_{t-1}$/ A_{t-1}.

D is dividend payer dummy, =1 if $DIV_{t-1} > 0$, 0 otherwise.

AVGRATIO is the average payout ratio for payers that have at least three years of payout ratios available, where payout ratio = DIV_t/E_t.

TABLE 3

TEST FOR THE DIRECTION OF REAL EARNINGS MANAGEMENT

Group	CFO model		SGA model		RD model		GAIN model	
	#Firm-Yrs	*Mean*	*#Firm-Yrs*	*Mean*	*#Firm-Yrs*	*Mean*	*#Firm-Yrs*	*Mean*
$PME_t < DIV_{t-1}$	3207	0.029*	3034	-0.073*	1947	0.000	1188	0.002*
		49.73*		-213.9*		-8.59*		2.61*
$PME_t \geq DIV_{t-1}$, and $PME_t \geq E_{t-1}$	6908	-0.026*	3884	0.072*	4940	0.001*	2913	-0.001*
		-82.67*		138.85*		0.73		-1.61*
$PME_t \geq DIV_{t-1}$ and $PME_t < E_{t-1}$	3503	0.024*	1574	-0.037*	2283	-0.002*	1103	0.000
		37.21*		-80.61*		-11.88*		0.78

* Significant at the 5 % level two-tailed.
For each group, the first line is the assets scaled value and the second line is the dollar value.

RCFO is residual from the following regression for each industry-year. ACFO equals $RCFO_t * A_{t-1}$.

$$CFO_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 (Sales_t/A_{t-1}) + \beta_2 (SC_t/A_{t-1}) + \beta_3 (IBEI_{t-1}/A_{t-1}) + \beta_4 ROS_{t-1} + \beta_5 SIZE_{t-1} + \beta_6 AGE_t + \acute{\varepsilon}_t$$

RSGA is residual from the following regression for each industry-year. ASGA equals $RSGA_t * A_{t-1}$.

$$SGA_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3 (FUND_t/A_{t-1}) + \beta_4 (SC_t/A_{t-1}) + \beta_5 (SD_t * SC_t/A_{t-1}) + \acute{\varepsilon}_t$$

RRD is residual from the following regression for each industry-year. ARD equals $RRD_t * A_{t-1}$.

$$RD_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3 (FUND_t/A_{t-1}) + \beta_4 (RD_{t-1}/A_{t-1}) + \acute{\varepsilon}_t$$

RGAIN is residual from the following regression for each industry-year. AGAIN equals $RGAIN_t * A_{t-1}$.

$$GAIN_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3 (FUND_t/A_{t-1}) + \beta_4 (PPES_t/A_{t-1}) + \beta_5 (INVS_t/A_{t-1}) + \acute{\varepsilon}_t$$

E is (income before extraordinary items – preferred dividends).
PME is pre- managed earnings$_t$= $E_t - ACFO_t$, $E_t + ASGA_t$, $E_t + ARD_t$, or $E_t - AGAIN_t$, depending on the proxy for real earnings management.
DIV is total common dividends$_t$.

TABLE 4

MULTIPLE-REGRESSION RESULTS FOR H1

I run cross-sectional regression with industry and year dummies as fixed effects. Fixed effects are not reported in the tables.

$$REM = \beta_0 + \beta_1\,D + \beta_2\,NOND * DEFICIT + \beta_3\,D * DEFICIT + \beta_4\,BONUS + \beta_5\,STOCK + \beta_6\,BTM$$

$$+ \beta_7\,LEV + \beta_8\,RE + \beta_9\,LAGE + \beta_{10}\,\text{Fixed effects} + \varepsilon \qquad (1)$$

DV	ACFO		ASGA		ARD		AGAIN	
	Estimate	*p value*	Estimate	*p value*	Estimate	*p value*	Estimate	*p value*
Intercept	0.093	*0.990*	42.795	*0.003*	6.286	*0.488*	-3.926	*0.132*
D	-13.478	*0.033*	8.213	*0.474*	11.456	*0.174*	-2.669	*0.336*
NOND*DEFICIT	0.002	*0.900*	-0.554	*<.001*	0.009	*0.604*	0.012	*0.033*
D*DEFICIT	**0.335**	***<.001***	**-0.789**	***<.001***	**-0.233**	***<.001***	**0.023**	***0.015***
BONUS	188.961	*<.001*	-308.424	*<.001*	-107.703	*0.001*	54.728	*<.001*
STOCK	67.779	*<.001*	-109.940	*<.001*	-43.816	*0.026*	5.298	*0.328*
BTM	-7.088	*0.220*	4.666	*0.712*	10.660	*0.154*	1.435	*0.565*
LEV	23.061	*0.139*	-132.455	*<.001*	-0.033	*0.999*	3.984	*0.489*
RE	2.489	*0.540*	10.176	*0.112*	-3.081	*0.358*	0.861	*0.330*
LAGE	0.157	*<.001*	-0.449	*<.001*	0.071	*<.001*	-0.002	*0.601*

ACFO equals $RCFO_t * A_{t-1}$. RCFO is residuals from the following regression for each industry-year:

$CFO_t/A_{t-1} = \alpha_0 + \beta_0\,(1/A_{t-1}) + \beta_1\,(Sales_t/A_{t-1}) + \beta_2\,(SC_t/A_{t-1}) + \beta_3\,(IBEI_{t-1}/A_{t-1}) + \beta_4\,ROS_{t-1} + \beta_5\,SIZE_{t-1} + \beta_6$

$\qquad AGE_t + \acute{\varepsilon}_t$

ASGA equals $RSGA_t * A_{t-1}$. RSGA is residuals from the following regression for each industry-year:

$SGA_t/A_{t-1} = \alpha_0 + \beta_0\,(1/A_{t-1}) + \beta_1\,SIZE_{t-1} + \beta_2\,TQ_t + \beta_3\,(FUND_t/A_{t-1}) + \beta_4\,(SC_t/A_{t-1}) + \beta_5\,(SD_t * SC_t/A_{t-1}) + \acute{\varepsilon}_t$

ARD equals $RRD_t * A_{t-1}$. RRD is residuals from the following regression for each industry-year:

$RD_t/A_{t-1} = \alpha_0 + \beta_0\,(1/A_{t-1}) + \beta_1\,SIZE_{t-1} + \beta_2\,TQ_t + \beta_3\,(FUND_t/A_{t-1}) + \beta_4\,(RD_{t-1}/A_{t-1}) + \acute{\varepsilon}_t$

AGAIN equals $RGAIN_t * A_{t-1}$. RGAIN is residuals from the following regression for each industry-year:

$GAIN_t/A_{t-1} = \alpha_0 + \beta_0\,(1/A_{t-1}) + \beta_1\,SIZE_{t-1} + \beta_2\,TQ_t + \beta_3\,(FUND_t/A_{t-1}) + \beta_4\,(PPES_t/A_{t-1}) + \beta_5\,(INVS_t/A_{t-1}) + \acute{\varepsilon}_t$

E is (income before extraordinary items – preferred dividends).
PME is pre- managed earnings$_t= E_t - ACFO_t$, $E_t + ASGA_t$, $E_t + ARD_t$, or $E_t - AGAIN_t$, depending on the proxy for real earnings management.
DIV is total common dividends$_t$.
D is dividend payer dummy, =1 if $DIV_{t-1} > 0$, 0 otherwise.
NOND is non-payer dummy, = 1-D.
DEFICIT is the shortfall of pre-managed earnings relative to lagged dividends = $DIV_{t-1} - PME_t$
BONUS equals Executive bonus$_t$ /total compensation$_t$.
SENSITIVE equals 0.01*stock price*(number of shares held by CEO and CFO + number of options held by CEO and CFO)
STOCK is Stock incentive ratio$_t$ = SENSITIVE$_t$ / (SENSITIVE + salary + bonus)$_t$

BTM is book value of common equity$_{t-1}$/ market value of common equity$_{t-1}$.
LEV is total debt $_{t-1}$ / A$_{t-1}$.
RE is retained earnings$_{t-1}$ / A$_{t-1}$.
LAGE is last year's E.

TABLE 5

MULTIPLE-REGRESSION RESULTS FOR H2

I run cross-sectional regression with industry and year dummies as fixed effects. Fixed effects are not reported in the tables.

$$REM = \beta_0 + \beta_1 D + \beta_2 PMEC + \beta_3 D * PMEC + \beta_4 BONUS + \beta_5 STOCK + \beta_6 BTM + \beta_7 LEV + \beta_8 RE + \beta_9 \text{ Fixed effects} + \varepsilon \qquad (2)$$

Panel A. H2a, when $PME_t \geq DIV_{t-1}$, and $PME_t \geq E_{t-1}$

DV	RCFO		RSGA		RRD		RGAIN	
	Estimate	p value	Estimate	p value	Estimate	p value	Estimate	p value
Intercept	-0.016	<.001	0.048	<.001	0.004	<.001	0.000	0.565
D	0.008	<.001	-0.040	<.001	-0.003	<.001	0.001	0.191
PMEC	-0.197	<.001	0.306	<.001	-0.008	0.098	-0.003	0.223
D*PMEC	**-0.231**	**<.001**	**0.612**	**<.001**	**0.025**	**0.075**	**-0.024**	**0.002**
BONUS	0.038	<.001	-0.055	<.001	-0.006	0.015	-0.002	0.229
STOCK	0.018	<.001	-0.034	<.001	0.001	0.491	0.001	0.228
BTM	-0.007	<.001	-0.008	0.051	-0.001	0.531	0.000	0.791
LEV	-0.013	<.001	-0.021	0.007	-0.005	0.028	-0.001	0.331
RE	-0.009	<.001	0.016	<.001	-0.001	0.233	-0.001	0.123

Panel B. H2b, when $PME_t \geq DIV_{t-1}$ and $PME_t < E_{t-1}$

DV	RCFO		RSGA		RRD		RGAIN	
	Estimate	p value	Estimate	p value	Estimate	p value	Estimate	p value
Intercept	0.013	<.001	-0.013	0.003	-0.001	0.674	-0.002	0.078
D	-0.010	<.001	0.019	<.001	-0.003	0.030	0.000	0.760
PMEC	-0.263	<.001	0.345	<.001	-0.049	0.000	0.007	0.412
D*PMEC	**-0.211**	**<.001**	**0.183**	**0.010**	**0.053**	**0.087**	**-0.014**	**0.484**
BONUS	0.089	<.001	-0.092	<.001	-0.010	0.010	0.007	0.003
STOCK	0.024	<.001	-0.039	<.001	-0.001	0.651	0.005	<.001
BTM	-0.033	<.001	0.025	<.001	0.005	0.005	-0.001	0.459
LEV	-0.021	<.001	0.009	0.309	0.000	0.917	0.002	0.419
RE	0.008	<.001	-0.006	0.039	-0.004	0.005	0.000	0.647

RCFO is residual from the following regression for each industry-year.

$$CFO_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 (Sales_t/A_{t-1}) + \beta_2 (SC_t/A_{t-1}) + \beta_3 (IBEI_{t-1}/A_{t-1}) + \beta_4 ROS_{t-1} + \beta_5 SIZE_{t-1} + \beta_6 AGE_t + \acute{\varepsilon}_t$$

RSGA is residual from the following regression for each industry-year.

$$SGA_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3 (FUND_t/A_{t-1}) + \beta_4 (SC_t/A_{t-1}) + \beta_5 (SD_t * SC_t/A_{t-1}) + \acute{\varepsilon}_t$$

RRD is residual from the following regression for each industry-year.

$$RD_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3 (FUND_t/A_{t-1}) + \beta_4 (RD_{t-1}/A_{t-1}) + \acute{\epsilon}_t$$

RGAIN is residual from the following regression for each industry-year.

$$GAIN_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3 (FUND_t/A_{t-1}) + \beta_4 (PPES_t/A_{t-1}) + \beta_5 (INVS_t/A_{t-1}) + \acute{\epsilon}_t$$

E is (income before extraordinary items − preferred dividends).
PME is pre- managed earnings$_t$= $E_t − ACFO_t$, $E_t + ASGA_t$, $E_t + ARD_t$, or $E_t − AGAIN_t$, depending on the
    proxy for real earnings management.
DIV is total common dividends$_t$.
D is dividend payer dummy, =1 if DIV $_{t-1}$ > 0, 0 otherwise.
PMEC is Pre-managed earnings change$_t$ = $(PME_t − E_{t-1}) / A_{t-1}$.
BONUS equals Executive bonus$_t$ /total compensation$_t$.
SENSITIVE equals 0.01*stock price*(number of shares held by CEO and CFO + number of options held
    by CEO and CFO)
STOCK is Stock incentive ratio $_t$ = $SENSITIVE_t / (SENSITIVE + salary + bonus)_t$
BTM is book value of common equity$_{t-1}$/ market value of common equity$_{t-1}$.
LEV is total debt$_{t-1}$ / A_{t-1}.
RE is retained earnings$_{t-1}$ / A_{t-1}.

TABLE 6

MULTIPLE-REGRESSION RESULTS FOR H3[25]

Panel A. H3a, when, $PME_t \geq DIV_{t-1}$, and $PME_t \geq E_{t-1}$

I run cross-sectional regression with industry and year dummies as fixed effects. Fixed effects are not reported in the tables.

$REM = \beta_0 + \beta_1 \, SUSPECTD1 + \beta_2 \, PMEC + \beta_3 \, SUSPECTD1 * PMEC + \beta_4 \, BONUS + \beta_5 \, STOCK +$

$\beta_6 \, BTM + \beta_7 \, LEV + \beta_8 \, RE + \beta_9 \, \text{Fixed effects} + \varepsilon$ (3)

DV	RCFO		RSGA		RRD		RGAIN	
	Estimate	*p value*	Estimate	*p value*	Estimate	*p value*	Estimate	*p value*
Intercept	0.013	*<.001*	-0.034	*<.001*	-0.004	*0.010*	0.003	*0.002*
SUSPECTD1	**-0.013**	***<.001***	**0.009**	***0.018***	**0.002**	***0.034***	**-0.002**	***0.009***
PMEC	-0.393	*<.001*	0.769	*<.001*	0.031	*0.410*	-0.063	*0.004*
SUSPECTD1* **PMEC**	**-0.233**	***0.001***	**0.204**	***0.062***	0.036	*0.369*	0.022	*0.337*
BONUS	0.028	*<.001*	-0.047	*<.001*	-0.006	*0.004*	0.001	*0.502*
STOCK	0.011	*<.001*	-0.008	*0.092*	-0.003	*0.045*	0.002	*0.029*
BTM	-0.014	*<.001*	0.019	*<.001*	0.003	*0.019*	<.001	*0.886*
LEV	-0.010	*0.020*	0.037	*<.001*	0.006	*0.011*	-0.006	*<.001*
RE	-0.001	*0.572*	0.022	*<.001*	-0.002	*0.106*	-0.003	*0.002*

Panel B. H3b, when $PME_t \geq DIV_{t-1}$ and $PME_t < E_{t-1}$

I run cross-sectional regression with industry and year dummies as fixed effects. Fixed effects are not reported in the tables.

$REM = \beta_0 + \beta_1 \, SUSPECTD2 + \beta_2 \, PMEC + \beta_3 \, SUSPECTD2 * PMEC + \beta_4 \, BONUS + \beta_5 \, STOCK +$

$\beta_6 \, BTM + \beta_7 \, LEV + \beta_8 \, RE + \beta_9 \, \text{Fixed effects} + \varepsilon$ (4)

DV	RCFO		RSGA		RRD		RGAIN	
	Estimate	*p value*	Estimate	*p value*	Estimate	*p value*	Estimate	*p value*
Intercept	0.016	*<.001*	-0.008	*0.210*	-0.004	*0.045*	-0.001	*0.579*
SUSPECTD2	**0.008**	***<.001***	**-0.013**	***0.001***	**-0.002**	***0.065***	**0.003**	***0.012***
PMEC	-0.323	*<.001*	0.099	*0.326*	0.029	*0.348*	-0.031	*0.296*
SUSPECTD2* **PMEC**	**-0.189**	***0.004***	**0.427**	***<.001***	0.003	*0.909*	0.047	*0.175*
BONUS	0.057	*<.001*	-0.055	*<.001*	-0.010	*0.001*	0.010	*<.001*

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[25] Sample for H3 includes payers where payout ratio and pre-managed ratio can be calculated, and which have at least three years of payout ratios.

STOCK	0.009	*0.016*	-0.016	*0.033*	-0.001	*0.511*	0.001	*0.550*
BTM	-0.026	*<.001*	0.027	*<.001*	0.009	*<.001*	0.000	*0.839*
LEV	-0.036	*<.001*	0.039	*<.001*	0.002	*0.529*	-0.003	*0.273*
RE	-0.008	*0.016*	-0.003	*0.653*	-0.006	*0.002*	-0.001	*0.456*

RCFO is residual from the following regression for each industry-year.

$$CFO_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 (Sales_t/A_{t-1}) + \beta_2 (SC_t/A_{t-1}) + \beta_3 (IBEI_{t-1}/A_{t-1}) + \beta_4 ROS_{t-1} + \beta_5 SIZE_{t-1} + \beta_6 AGE_t + \acute{\epsilon}_t$$

RSGA is residual from the following regression for each industry-year.

$$SGA_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3 (FUND_t/A_{t-1}) + \beta_4 (SC_t/A_{t-1}) + \beta_5 (SD_t * SC_t/A_{t-1}) + \acute{\epsilon}_t$$

RRD is residual from the following regression for each industry-year.

$$RD_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3 (FUND_t/A_{t-1}) + \beta_4 (RD_{t-1}/A_{t-1}) + \acute{\epsilon}_t$$

RGAIN is residual from the following regression for each industry-year.

$$GAIN_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3 (FUND_t/A_{t-1}) + \beta_4 (PPES_t/A_{t-1}) + \beta_5 (INVS_t/A_{t-1}) + \acute{\epsilon}_t$$

E is (income before extraordinary items – preferred dividends).
PME is pre- managed earnings$_t$= $E_t - ACFO_t$, $E_t + ASGA_t$, $E_t + ARD_t$, or $E_t - AGAIN_t$, depending on the proxy for real earnings management.
DIV is total common dividends$_t$.
D is dividend payer dummy, =1 if $DIV_{t-1} > 0$, 0 otherwise.
PMEC is Pre-managed earnings change = $(PME_t - E_{t-1}) / A_{t-1}$.
AVGRATIO is the average payout ratio for payers that have at least three years of payout ratios available, where payout ratio = DIV_t / E_t.
SUSPECTD1 = 1 if D=1, $PME_t \geq DIV_{t-1}$, $PME_t \geq E_{t-1}$ and $DIV_t/PME_t < AVGRATIO$, 0 otherwise.
SUSPECTD2 = 1 if D=1, $PME_t \geq DIV_{t-1}$, $PME_t < E_{t-1}$ and $DIV_t/PME_t \geq AVGRATIO$, 0 otherwise
BONUS equals Executive bonus $_t$/total compensation $_t$.
SENSITIVE equals 0.01*stock price*(number of shares held by CEO and CFO + number of options held by CEO and CFO)
STOCK is Stock incentive ratio $_t$ = $SENSITIVE_t / (SENSITIVE + salary + bonus)_t$
BTM is book value of common equity$_{t-1}$/ market value of common equity$_{t-1}$.
LEV is total debt$_{t-1}$ / A_{t-1}.
RE is retained earnings$_{t-1}$ / A_{t-1}.

TABLE 7

DIFFERENCE BETWEEN DIVIDEND PAYERS AND NON-PAYERS [26]

Pane A. H1, when $PME_t < DIV_{t-1}$

DV	ACFO		ASGA		ARD		AGAIN	
	Estimate	*p value*	Estimate	*p value*	Estimate	*p value*	Estimate	*p value*
Debt:								
# Firm-Yrs.	2,771		2,534		1,595		938	
D*DEFICIT	0.340	*<.001*	-0.788	*<.001*	-0.235	*<.001*	0.027	*0.012*
Zero debt:								
# Firm-Yrs.	436		500		352		250	
D*DEFICIT	0.335	*<.001*	-0.594	*<.001*	0.017	*0.721*	-0.007	*0.235*

Panel B. H2a, when $PME_t \geq DIV_{t-1}$, and $PME_t \geq E_{t-1}$

DV	RCFO		RSGA		RRD		RGAIN	
	Estimate	*p value*	Estimate	*p value*	Estimate	*p value*	Estimate	*p value*
Debt:								
# Firm-Yrs.	6056		3,254		4,111		2,302	
D*PMEC	-0.228	*<.001*	0.633	*<.001*	0.034	*0.018*	-0.023	*0.017*
Zero debt:								
# Firm-Yrs.	852		630		829		611	
D*PMEC	-0.211	*<.001*	0.374	*<.001*	-0.000	*0.999*	-0.033	*0.011*

Panel C. H2b, when $PME_t \geq DIV_{t-1}$ and $PME_t < E_{t-1}$

DV	RCFO		RSGA		RRD		RGAIN	
	Estimate	*p value*	Estimate	*p value*	Estimate	*p value*	Estimate	*p value*
Debt:								
# Firm-Yrs.	2,970		1,244		1,914		842	
D*PMEC	-0.157	*0.002*	0.025	*0.746*	0.060	*0.058*	-0.000	*0.985*
Zero debt:								
# Firm-Yrs.	533		330		369		261	
D*PMEC	-0.403	*0.008*	0.620	*0.001*	-0.012	*0.921*	-0.049	*0.155*

ACFO equals $RCFO_t * A_{t-1}$. RCFO is residuals from the following regression for each industry-year:

$$CFO_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 (Sales_t/A_{t-1}) + \beta_2 (SC_t/A_{t-1}) + \beta_3 (IBEI_{t-1}/A_{t-1}) + \beta_4 ROS_{t-1} + \beta_5 SIZE_{t-1} + \beta_6 AGE_t + \acute{\varepsilon}_t$$

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[26] For simplicity, I only report the results for the coefficients pertinent to my hypothesis tests.

ASGA equals $RSGA_t * A_{t-1}$. RSGA is residuals from the following regression for each industry-year:

$$SGA_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3 (FUND_t/A_{t-1}) + \beta_4 (SC_t/A_{t-1}) + \beta_5 (SD_t * SC_t/A_{t-1}) + \acute{\epsilon}_t$$

ARD equals $RRD_t * A_{t-1}$. RRD is residuals from the following regression for each industry-year:

$$RD_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3 (FUND_t/A_{t-1}) + \beta_4 (RD_{t-1}/A_{t-1}) + \acute{\epsilon}_t$$

AGAIN equals $RGAIN_t * A_{t-1}$. RGAIN is residuals from the following regression for each industry-year:

$$GAIN_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3 (FUND_t/A_{t-1}) + \beta_4 (PPES_t/A_{t-1}) + \beta_5 (INVS_t/A_{t-1}) + \acute{\epsilon}_t$$

E is income before extraordinary items – preferred dividends.
PME is pre- managed earnings $_t= E_t – ACFO_t, E_t + ASGA_t, E_t + ARD_t,$ or $E_t – AGAIN_t,$ depending on the proxy for real earnings management.
DIV is total common dividends $_t$.
D is dividend payer dummy, =1 if $DIV_{t-1} > 0$, 0 otherwise.
DEFICIT is the shortfall of pre-managed earnings relative to lagged dividends = $DIV_{t-1} – PME_t$
PMEC is Pre-managed earnings change = $(PME_t – E_{t-1}) / A_{t-1}$.

TABLE 8

COMPARISONS OF ACTUAL MAGNITUDES WITH RANDOMIZED

MAGNITUDES

I compare the actual coefficients pertinent to my hypothesis tests (Actual) with the simulation results by randomizing the real earnings management measures when calculating of DEFICIT or PMEC (Random).

	H1 (D*DEFICIT)			H2a (D*PMEC)			H2b (D*PMEC)		
	Actual	Random	*p-value*	Actual	Random	*p-value*	Actual	Random	*p-value*
CFO model	0.335	-0.024	*0.000*	-0.231	-0.028	*0.000*	-0.211	-0.182	*0.041*
SGA model	-0.789	-0.146	*0.000*	0.612	0.031	*0.000*	0.183	0.121	*0.007*
RD model	-0.233	0.184	*0.000*	0.025	-0.005	*0.000*	0.053	0.075	*0.939*
GAIN model	0.023	-0.009	*0.024*	-0.024	-0.018	*0.000*			

p- values equal the proportion of the 1000 iterations where the indicated statistic was more positive (negative) than the corresponding actual coefficients.

ACFO equals $RCFO_t * A_{t-1}$. RCFO is residuals from the following regression for each industry-year:

$CFO_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 (Sales_t/A_{t-1}) + \beta_2 (SC_t/A_{t-1}) + \beta_3 (IBEI_{t-1}/A_{t-1}) + \beta_4 ROS_{t-1} + \beta_5 SIZE_{t-1} + \beta_6 AGE_t + \acute{\epsilon}_t$

ASGA equals $RSGA_t * A_{t-1}$. RSGA is residuals from the following regression for each industry-year:

$SGA_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3 (FUND_t/A_{t-1}) + \beta_4 (SC_t/A_{t-1}) + \beta_5 (SD_t * SC_t/A_{t-1}) + \acute{\epsilon}_t$

ARD equals $RRD_t * A_{t-1}$. RRD is residuals from the following regression for each industry-year:

$RD_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3 (FUND_t/A_{t-1}) + \beta_4 (RD_{t-1}/A_{t-1}) + \acute{\epsilon}_t$

AGAIN equals $RGAIN_t * A_{t-1}$. RGAIN is residuals from the following regression for each industry-year:

$GAIN_t/A_{t-1} = \alpha_0 + \beta_0 (1/A_{t-1}) + \beta_1 SIZE_{t-1} + \beta_2 TQ_t + \beta_3 (FUND_t/A_{t-1}) + \beta_4 (PPES_t/A_{t-1}) + \beta_5 (INVS_t/A_{t-1}) + \acute{\epsilon}_t$

E is income before extraordinary items – preferred dividends.
PME is pre- managed earnings$_t$ = $E_t – ACFO_t$, $E_t + ASGA_t$, $E_t + ARD_t$, or $E_t – AGAIN_t$, depending on the proxy for real earnings management.
DIV is total common dividends.
D is dividend payer dummy, =1 if $DIV_{t-1} > 0$, 0 otherwise.
DEFICIT is the shortfall of pre-managed earnings relative to lagged dividends = $DIV_{t-1} – PME_t$
PMEC is Pre-managed earnings change = $(PME_t – E_{t-1}) / A_{t-1}$.