# Are Aggressive Reporting Practices Indicative of an Aggressive Corporate Culture?

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**ABSTRACT:** We examine whether firms with aggressive financial and tax reporting (i.e., aggressive reporting firms) have other aggressive corporate practices, consistent with these firms possessing an aggressive corporate culture. We focus our analyses on investing and financing policies that prior research links to managerial risk-taking. We initially focus on the pre-SOX time period (1994-2000), when stock prices surged and aggressive corporate practices were evident at many firms. Our analyses provide evidence that firms with aggressive reporting in the pre-SOX time period also maintained other aggressive policies, including greater capital expenditures, more frequent acquisitions, higher leverage, lower interest coverage, larger debt and equity securities issuances, greater reliance on short-term debt, and larger cash holdings and dividend yields. However, our results also suggest that SOX significantly altered the systematic associations between aggressive reporting and other corporate policies during the post-SOX time period (2003-2007) relative to the changes of other firms, consistent with SOX dampening previously aggressive corporate cultures. Lastly, our preliminary valuation tests provide little evidence that firms with aggressive reporting in either the pre- or post-SOX time period were valued at a premium relative to firms with average reporting behaviors.

**Keywords:** *Tax avoidance, earnings management, aggressive reporting, corporate culture.*

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## 1. Introduction

Evidence of aggressive corporate practices has proliferated over the past 15 years. Corporate America has endured numerous scandals involving diverse issues, such as: fraudulent accounting (e.g., Enron, WorldCom, and Xerox); executive excess (Adelphia, Hollinger International, and Tyco); energy trading (e.g., Dynegy, El Paso, and Reliant Energy); tax sheltering (e.g., transactions deemed "abusive" by the IRS); stock option backdating (e.g. Apple Inc., KLA-Tencor, and UnitedHealth); and most recently, financial fraud via billion dollar ponzi schemes (e.g., Bernard Madoff and Stanford Financial). At the heart of many of these scandals are aggressive financial and tax reporting practices, which suggest that aggressive reporting may be indicative of other aggressive corporate practices. In this paper, we examine whether firms with aggressive financial and tax reporting also exhibit other aggressive corporate policies. We investigate whether the Sarbanes-Oxley Act of 2002 (SOX) systematically altered investing and financing decisions in addition to its impact on corporate reporting, and we examine the extent to which aggressive reporting impacts shareholder value in the pre- vs. post-SOX time periods. Our findings should be of interest to corporate stakeholders concerned that aggressive financial and tax reporting are symptomatic of other aggressive corporate policies.

Frank, Lynch, and Rego (2009) provide evidence that firms with aggressive financial reporting have more aggressive tax reporting, and vice versa. Like those authors, we adopt broad definitions of financial and tax reporting aggressiveness. We define aggressive tax reporting as tax planning that generates uncertain tax positions and reduces income tax liabilities but not pretax financial income. We define aggressive financial reporting as financial accounting choices that cause pretax financial income to be significantly higher than it would be under a

neutral application of generally accepted accounting principles (GAAP). Anecdotal evidence suggests that aggressive reporting practices – which inflate financial income while reducing income taxes – often coincide with other aggressive corporate practices, including investing and financing decisions (e.g., Enron, Halliburton, HealthSouth, Bristol-Myers Squibb, Google, and Transocean).[1] Thus, we extend Frank et al. (2009) and investigate the extent to which aggressive reporting practices are associated with other aggressive corporate policies, consistent with these firms possessing an aggressive corporate culture.[2]

Recent economic theory formalizes the role of corporate culture in corporate policies (Kreps 1990; Hermalin 1999; Akerlof and Kranton 2000, 2005). These theories suggest that corporate culture helps define expected behavior in an organization, and this expected behavior guides hiring and corporate decision-making, including investing and financing policies. We cannot measure the corporate cultures of our sample firms. However, we predict that an aggressive corporate culture would systematically affect all corporate practices, and thus we rely on aggressive financial and tax reporting as one possible indicator of other aggressive corporate practices that impact shareholder value.

We focus our analyses on the investing and financing characteristics that prior research links to managerial decision-making and risk-taking. Several studies provide evidence that individual managers have a significant impact on acquisition and diversification decisions,

[1] In addition to their respective accounting and tax woes, these companies engaged in other risky and sometimes fraudulent behaviors. Enron's bankruptcy was due in part to its reckless use of derivatives and special purpose entities as risk management tools. Halliburton was accused of overcharging for government contracts, while HealthSouth's CEO was accused of insider trading several years after the company went on a healthcare company acquisition spree. Bristol-Myers Squibb faced charges of channel-stuffing and collusion related to its distribution of Plavix. Google, which utilized the now infamous "Double Irish" and "Dutch Sandwich" tax avoidance strategies, has recently been under fire for breach of privacy and copyright infringement. Also of note is Transocean, currently under investigation for money laundering, sponsoring terrorism, and global tax evasion.

[2] We view an aggressive corporate culture as one that encourages greater risk-taking across all functions of the organization. We rely on prior research to make predictions as to how increased risk-taking would manifest itself across a variety of investing and financing decisions. See Section II for further details.

capital structure and interest coverage, dividend policy, and financial and tax reporting practices (e.g., Bertrand and Schoar 2003; Dyreng, Hanlon, and Maydew 2010; Ge, Matsumoto, and Zhang 2010). Other studies find that managerial overconfidence distorts investing and financing decisions (Malmendier and Tate 2005, 2008; Ben-David, Graham, and Harvey 2010; Malmendier, Tate, and Yan 2011), while a related literature provides evidence that equity risk incentives motivate managers to increase firm risk by increasing capital and research and development expenditures, acquisitions, leverage, and other risk-taking activities (Guay 1999; Rajgopal and Shevlin 2002; Coles, Daniel, and Naveen 2006). These studies provide insights as to which firm characteristics are most likely to be impacted by an aggressive corporate culture that encourages risk-taking across all functions of an organization.

We partition our sample into two distinct time periods. The pre-SOX time period covers 1994-2000, which includes numerous high-profile accounting scandals that culminate with the Sarbanes-Oxley Act of 2002. The post-SOX time period covers 2003-2007, an era of increased regulatory enforcement with respect to both financial and tax reporting, including increased scrutiny of financial reporting and internal controls by the SEC and increased scrutiny of tax avoidance and tax shelter transactions by the IRS. Our research design allows us to separately examine whether aggressive reporting is associated with other aggressive corporate policies in the pre-SOX time period, and then test whether SOX systematically altered the corporate practices of aggressive reporting firms in the post-SOX time period. Recent research suggests that in the years following SOX, financial reporting conservatism increased, accruals-based earnings management decreased, and the propensity for firms to meet or beat analysts' earnings expectations also declined (e.g., Lobo and Zhou 2006, 2009; Bartov and Cohen 2008; Cohen, Dey, and Lys 2008). We build on these studies and predict that SOX also altered other corporate

practices of firms with aggressive reporting in the pre-SOX time period, consistent with SOX influencing the broader culture of increased risk-taking at aggressive reporting firms.

Because we are interested in firms that exhibit aggressive corporate practices over an extended period of time (consistent with these firms possessing an aggressive corporate culture), we develop multi-year measures of aggressive financial and tax reporting and other corporate policies. Specifically, we calculate firm fixed effects for each corporate policy variable (e.g., financial and tax reporting aggressiveness, capital expenditures, leverage, etc.) for the pre- and post-SOX time periods. These firm fixed effects reflect the average corporate policy for a particular firm over a specific time period, after controlling for basic firm characteristics that explain variation in that corporate policy. Thus, our methodology is similar in spirit to that in Bertrand and Schoar (2003). However, while those authors focus on *manager* fixed effects because they are interested in the impact of managers on corporate decision-making, we focus on *firm* fixed effects because we are interested in the impact of corporate cultures on corporate decision-making.[3]

Our univariate results suggest that in the years leading up to SOX, firms with aggressive financial and tax reporting ("aggressive firms") are significantly different from firms with less aggressive reporting ("average firms"). Compared to average firms, aggressive firms are substantially larger, older firms that have more extensive foreign operations, higher market-to-book ratios, greater analyst following, a greater propensity to restate their earnings, and higher CEO turnover. Aggressive firms also exhibit lower changes in pre-tax cash flow from operations and lower rates of pretax profitability, but their pretax profitability is less volatile than that of "average" firms. We also note that aggressive firms compensate their top executives with

[3] As noted by Bertand and Schoar (2003), it is difficult to empirically separate the influence of corporate culture and individual managers on corporate policies (pgs. 1173-1175). Importantly, their manager fixed effects model cannot rule out that corporate culture influences which individual is chosen to manage the firm and set the "tone at the top."

greater variable pay than average firms. These results suggest that firms with aggressive financial and tax reporting require more resources to maintain their aggressive reporting practices over an extended period of time. They are also consistent with aggressive reporting firms being subject to greater capital market pressure (from analysts and investors alike).

Our multivariate analyses indicate that aggressive reporting is systematically associated with certain investing and financing activities in the pre-SOX time period. In particular, firms with aggressive financial and tax reporting are more highly levered, have lower interest coverage, issue more debt and equity securities, maintain greater cash holdings and higher dividend yields, and incur fewer research and development expenditures. These results are consistent with aggressive reporting practices generally coinciding with other aggressive investing and financing activities in the pre-SOX time period.[4]

We then analyze whether firms classified as aggressive reporting firms in the pre-SOX time period modified their corporate practices in the post-SOX time period. Specifically, we compare changes in each corporate policy variable from the pre- to post-SOX time period for firms classified with aggressive and average reporting in the years prior to SOX. The results indicate that relative to average firms, aggressive firms exhibited smaller increases in financial aggressiveness as well as larger decreases in tax aggressiveness. However, we also find that aggressive firms became *more* aggressive in the post-SOX period with respect to most financing policies (i.e., larger increases in leverage and debt securities issuances, reduced interest coverage, and larger increases in dividend yields relative to average firms), but *less* aggressive in other respects (i.e., reduced capital and R&D expenditures and smaller increases in equity

[4] We make arguments for why most of these traits can be considered aggressive (as defined by increased risk-taking) in Section 2.

issuances and cash holdings relative to average firms). Thus, SOX does not appear to have systematically affected the investing and financing policies of aggressive reporting firms.

Our final analyses examine whether firms with aggressive financial and tax reporting are valued differently than average reporting firms by shareholders in the pre- and post-SOX time periods. We first predict that aggressive financial and tax reporting in the pre-SOX time period distorts the "true" operating results portrayed in financial statements, such that investors *overvalue* firms with aggressive reporting practices in the pre-SOX time period. We then predict that the improved financial reporting quality in the post-SOX time period (e.g., Cohen, et al. 2008; Lobo and Zhou 2006, 2009) should also improve the ability of investors to identify and evaluate aggressive reporting, which should translate into *lower* valuations for aggressive reporting firms in the post-SOX period. Our results, which utilize Tobin's *q* as our measure of firm value, are not consistent with predictions. While we find that firms with aggressive tax reporting (without aggressive financial reporting) are valued at a small premium in the post-SOX time period, we also find that the addition of aggressive financial reporting reduces that premium down to zero. We find no evidence of a valuation premium for aggressive reporting firms in the pre-SOX time period.

Our study is among the first to examine the relation between financial and tax reporting practices and a broad array of corporate policies to better understand aggressive corporate behaviors. Our analyses are related to those in Higgins, Omer, and Phillips (2011) and Bentley, Omer, and Sharp (2011), which separately investigate the links between Miles and Snow's (1978, 2003) organizational strategy theory, tax avoidance, and financial reporting irregularities, respectively. Our study differs from those working papers because we utilize the *combination* of aggressive financial and tax reporting as a signal of an aggressive corporate culture (that

systematically affects other corporate policies), while they classify firms as defenders, prospectors, and analyzers based on a business strategy score *without regard to "aggressiveness"*.[5] We also examine whether SOX influenced the broader culture of increased risk-taking at firms classified with aggressive reporting in the pre-SOX time period. Together, these three studies provide researchers and other corporate stakeholders new insights into the relation between aggressive reporting practices and other corporate policies, and whether shareholders perceive these activities as value-increasing or decreasing.

## 2. Background and Hypothesis Development

### *2.1 Prior Research on Corporate Culture*

This study investigates whether aggressive financial and tax reporting are indicative of other aggressive corporate policies, consistent with these firms possessing an aggressive corporate culture. Few studies in business and economics examine the role of corporate culture in corporate decision making. Kreps (1990) defines a firm's culture as the ingrained latent beliefs about the "right" corporate practices that are shared by the firms' managers and other employees. Schein (1985; 2004) also asserts that shared beliefs are an important attribute of corporate culture, while Van den Steen (2005a) explains that shared beliefs reduce agency problems, which decreases monitoring costs, increases delegation, and facilitates coordination across an organization. Fleischer (2006) echoes those theoretical findings and explains that "corporate culture reduces the transaction costs associated with monitoring employees, making it

[5] The strategy score utilized in Higgins et al. (2011) and Bentley et al. (2011) is based on five firm characteristics, including: the ratio of research and development expenditures to total sales, the ratio of employees to total sales, the market-to-book ratio, the ratio of advertising expense to total sales, and the ratio of property, plant, and equipment to total assets. Thus, those authors investigate the link between business strategy and reporting practices, while we investigate whether aggressive reporting practices are indicative of an aggressive corporate culture, as proxied by investment and financing policies.

easier for firms to move factors of production inside the boundaries of the firm" (p. 14). Thus, recent economic theory suggests that one benefit of a cohesive corporate culture is lower agency costs.

Of course, cohesive corporate cultures do not necessarily maximize shareholder wealth over the long time horizon, as suggested by Enron's spectacular and rapid demise in 2001. Theoretical results in Van den Steen (2005b) suggest that on average firms overinvest in corporate homogeneity. That is, people within firms prefer their coworkers to have beliefs similar to their own, independent of the objective costs and benefits of such homogeneity, which can lead to suboptimal decision-making. The single-minded nature of Enron's top executives during Jeffrey Skilling's tenure as president and chief operating officer provides an excellent example of such homogeneity (Free and Macintosh 2006). The combination of homogeneous shared beliefs and the breakdown of governance and internal controls at Enron during the late 1990's allowed Enron's "rogue" managers "to become more risk prone, engaging in levered speculation, earnings manipulation, and concealment of critical information" (Brattan 2002, p. 1283).

Fleischer (2006) links scandals of another variety – tax sheltering and stock option backdating – to weak internal controls and corporate culture. He asserts that corporations face a trade-off between creativity and compliance within their corporate cultures. "The corporate culture that many 'good' companies cultivate (a culture of innovation, marked by decentralization, creativity, internal competition and managerial 'slack') may also be associated with a high risk of fraud (a culture of noncompliance, marked by weak internal controls)" (p. 13). In other words, the weak internal controls that give managers the freedom to innovate also provide managers the opportunity to engage in aggressive tax sheltering, stock option

backdating, and other regulatory noncompliance. Bratton (2002) attributes the shift in corporate culture during the 1990's to a divergence in the theory and the practice of shareholder wealth maximization. Economic theory defines shareholder value in the context of management practices that: enhance productivity, concentrate on core competencies, return free cash flow to shareholders, align managers' incentives, and restructure dysfunctional operations. In contrast, Bratton argues that the recent practice (or "norm") of shareholder wealth maximization has become obsessed with short-term performance numbers that often involve aggressive accounting practices. These essays suggest that aggressive reporting practices should be systematically associated with other corporate policies, and in fact are reflections of aggressive corporate cultures.[6]

The studies discussed above involve either theoretical research on corporate culture, essays on corporate culture, or case studies of a particular firm's corporate culture (e.g., Enron). Little *empirical* research on corporate culture exists due to the difficulty in measuring a firm's corporate culture. Hilary and Hui (2009) and Cronqvist, Low, and Nilsson (2009) are two empirical studies that investigate specific manifestations of corporate culture. In particular, Hilary and Hui (2009) examines the impact of religious participation on corporate decision-making, while Cronqvist et al. (2009) compares the investing and financing decisions of firms that have been spun-off with those of their former parent companies. Hilary and Hui (2009) expect high rates of local religious participation to increase the risk aversion of local managers, and Cronqvist et al. (2009) expect a parent company's corporate culture to influence a spin-off's corporate culture for years after the spin-off occurs. Both studies find evidence in support of

[6] In a 2004 speech at Columbia University, Arthur Levitt attributed deficient corporate cultures to the fraternal culture inside many corporate boardrooms, where directors are reticent to challenge the person that invited them to serve on the board. The implication from Levitt's speech is that such "friendly" boardroom environments lead to uninformed – if not opportunistic – managerial decision-making (Levitt October 15, 2004).

their predictions. We build on these studies by utilizing a different manifestation of corporate culture: aggressive financial and tax reporting practices.

*2.2 Empirical Predictions for Aggressive Reporting and Other Corporate Policies*

Based on the culture of accounting scandal and aggressive risk-taking that existed in corporate America in the 1990's and empirical evidence of a positive relation between financial and tax reporting aggressiveness during this same time period (Frank et al. 2009), we assert that aggressive financial reporting combined with aggressive tax reporting is indicative of an aggressive corporate culture. Moreover, an aggressive corporate culture should manifest itself across a variety of corporate policies, including investing and financing decisions. Accordingly, *we predict that firms with aggressive financial and tax reporting practices also exhibit other aggressive corporate policies.*

In this study, we assume that corporate culture influences managerial decision-making. However, it is difficult to disentangle the extent to which individual managers also influence corporate culture. Schein (2004) argues that leadership is critical to the creation and maintenance of corporate culture. Leaders create the mechanisms for cultural embedding and reinforcement, and culture and leadership continually interact. However, Van den Steen (2005b) claims that corporate culture persists through time, "even when all original members of the organization are gone…. It is as if … the organization itself has some personality or identity" (p. 18). Continuity in corporate culture across managers could be driven by individual managers being drawn to firms with certain corporate cultures; alternatively, firms may select certain managers because the managers' beliefs are consistent with the firm's corporate culture (e.g., Lazear 1995; Van den Steen 2005b; Cronqvist et al. 2009). Empirical evidence in Hilary and Hui (2009) is consistent with this self-selection process. Specifically, they find that the degree of

religiosity in the county where a former CEO's employer is located predicts the degree of religiosity in the county of a CEO's new employer, consistent with corporate culture influencing the selection of individual managers. Thus, while we acknowledge that managers are important components in the creation and maintenance of corporate culture, we also assert that managerial decision-making is – at least in part – a reflection of a firm's corporate culture.

To test whether firms with aggressive reporting have other aggressive corporate policies, we require an understanding over which corporate policies managers have the greatest influence (as opposed to policies that are primarily driven by industry or macroeconomic factors). Recent studies utilize panel data sets that track CEOs and CFOs through time and across firms to examine whether individual managers have significant influence over corporate actions. Their results suggest that individual managers have a significant impact on acquisition and diversification decisions, dividend policy, and interest coverage (Bertrand and Schoar 2003), debt financing (Frank and Goyal 2007), financial accounting practices (DeJong and Ling 2009; Ge et al. 2010), and income tax avoidance (Dyreng et al. 2010).

Other studies find that managerial overconfidence distorts corporate investing and financing decisions. In particular, recent research finds that firms with overconfident CEOs: 1) have a heightened sensitivity of corporate investment to cash flow (Malmendier and Tate 2005); 2) overpay for target companies and undertake value-destroying mergers (Malmendier and Tate 2008); and 3) rely on less external financing, and conditional on external financing, issue less equity than peer firms (Malmendier et al. 2011). Taken together, results in prior research are consistent with individual managers having significant influence over financial and tax reporting

practices, mergers and acquisitions, investment, financing, and dividend policies, and so these are the corporate policies on which we focus our empirical tests.[7]

We predict that aggressive financial and tax reporting is indicative of an aggressive corporate culture, and we also assert that an aggressive corporate culture encourages increased managerial risk-taking. To develop directional predictions for how an aggressive corporate culture should impact specific corporate policies, we first turn to research that investigates the impact of equity risk incentives on managerial decision-making. These studies generally predict that equity risk incentives motivate managers to increase firm risk (i.e., stock return volatility) by undertaking risky projects.[8] Guay (1999) and Cohen, Dey, and Lys (2007) both provide evidence that greater equity risk incentives are associated with larger investment expenditures, including expenditures for capital, research and development (R&D), and mergers and acquisitions. Williams and Rao (2006) also find that equity risk incentives are positively associated with merger and acquisition activity, while Coles et al. (2006) provide evidence that greater equity risk incentives are associated with greater R&D expenditures, higher leverage, but fewer capital expenditures. We utilize these results from the equity risk incentive literature to provide specific predictions for how an aggressive corporate culture – that encourages increased

[7] Results in Fee, Hadlock, and Pierce (2011) contrast those in Bertrand and Schoar (2003). Fee et al. (2011) utilize a sample of firms that experience "exogenous" CEO changes, i.e. those that are precipitated by a death or a health problem. They find *no* evidence that exogenously chosen managers significantly affect corporate policies at the multiple firms at which they were employed during the sample period. In contrast, CEOs that are "endogenously" terminated (i.e., where the firm terminates the CEO) *do* have a significant impact on corporate policies at the multiple firms at which they were employed during the sample period. However, this latter result is just as likely to be driven by *firms selecting managers that fit into their corporate cultures*, as opposed to managers influencing a firms' corporate culture. Thus, evidence in the "managerial style" literature is more nuanced than originally examined in Bertrand and Schoar (2003).

[8] Prior research describes how stock options provide managers with incentives that mitigate the risk-related incentive problem between managers and shareholders (e.g., Jensen and Meckling 1976; Smith and Stulz 1985; Guay 1999). In particular, stock options motivate managers to undertake risky but positive net present value projects because the value of an option increases with both stock price (referred to as the "delta" or pay-for-performance sensitivity) and stock return volatility (referred to as the "vega" or the equity risk incentive effect). While high pay-for-performance sensitivity motivates managers to undertake positive net present value projects, high equity risk incentives motivate managers to increase stock return volatility by undertaking risky projects. See Guay (1999), Rajgopal and Shevlin (2002), or Rego and Wilson (2011) for further discussion of this literature.

managerial risk-taking – should impact specific corporate policies. Specifically, *we predict that firms with aggressive financial and tax reporting have greater capital expenditures, a larger number of corporate acquisitions*, *higher leverage*, *lower interest coverage, and greater R&D expenditures than firms with less aggressive reporting practices*.[9]

Prior research finds evidence that firms engage in "real" earnings management to manipulate their reported income. In particular, Roychowdhury (2006) and Cohen and Zarowin (2010) provide evidence that firms reduce "real" expenditures to avoid reporting losses, to meet consensus analyst forecasts, and prior to seasoned equity offerings. The manipulated expenditures include advertising, R&D, and selling, general, and administrative expenses. Thus, although we predict a positive relation between aggressive reporting and R&D expenditures because we expect aggressive firms to generally *overinvest*, we may not find evidence that supports our prediction if firms that we classify as aggressive reporting firms also manipulate their earnings through *reductions* in R&D expenditures (i.e., "real" earnings management).

To maintain aggressive investment strategies (i.e., greater capital and R&D expenditures and more frequent mergers and acquisitions), firms require sources of internal and/or external financing. With respect to external financing, we predict that firms with aggressive reporting maintain higher total leverage ratios. However, firms can also issue equity to pursue aggressive investment strategies. Thus, *we predict that firms with aggressive financial and tax reporting raise more debt and equity financing than firms with less aggressive reporting practices*.[10]

[9] While Guay (1999) and Cohen et al. (2007) find a positive relation between equity risk incentives and capital expenditures, Coles et al. (2006) find a negative relation between these measures. We contend that an aggressive corporate culture is more likely to encourage overinvestment than underinvestment, and thus predict a positive relation between aggressive reporting and all three proxies for investment activities (i.e., capital expenditures, acquisitions, and R&D expenditures).

[10] Beneish and Nichols (2008) provide evidence that excessive equity financing is associated with overvalued equity, while excessive debt financing is not. They conjecture that excessive debt financing imposes greater discipline on borrowers through additional debt covenants and increased oversight by lenders. Given their findings, we separately examine debt and equity securities issuances.

Firms with an aggressive corporate culture may also rely on more short-term debt financing (relative to total debt financing) since they are less risk averse than firms with less aggressive corporate cultures. Thus, *we predict that firms with aggressive financial and tax reporting have lower ratios of long-term to total debt than firms with less aggressive reporting.*

Bertrand and Schoar (2003) examine the impact of individual managers on two additional financing policies that we believe are relevant to our study but are not directly investigated in the equity risk incentive literature: cash holdings and dividend yield. We argue that aggressive tax avoidance is one component of an aggressive corporate culture. Recent news articles discuss the unprecedented increase in cash holdings by U.S. corporations in recent years.[11] One reason cited for this increase in cash holdings is the growth in foreign source income that is "trapped" in low tax rate foreign countries because U.S. parent corporations prefer to avoid U.S. income taxes on foreign source income (e.g., Foley, Hartzell, Titman, and Twite 2007).[12] This phenomenon suggests firms that aggressively avoid U.S. income taxes through their foreign operations are likely to maintain larger cash holdings. In addition, firms that pursue riskier investment strategies likely prefer to maintain flexible sources of internal (and external) financing (e.g., Opler, Pinkowitz, Stulz, and Williamson 1999). Therefore, *we predict that firms with more aggressive financial and tax reporting maintain larger cash balances than firms with less aggressive reporting*.

Bratton (2002) asserts that during the 1990's corporate America practiced a distorted version of shareholder wealth maximization, which did not involve "patient investment" by U.S. corporations. Instead the distorted practice of shareholder wealth maximization was fixated on

[11] e.g., Lahart, *Wall Street Journal* (June 10, 2010).

[12] U.S. parent corporations generally do not pay U.S. income taxes on the foreign source income of their subsidiaries until such income is repatriated to the U.S. (e.g., via an intercompany dividend). However, U.S. income tax is only due in cases where the U.S. income tax rate is greater than the average foreign tax rate that applies to the foreign source income.

short-term performance numbers and being responsive to the investment community's demands for immediate value. Based on Bratton's view of shareholder wealth maximization in the pre-SOX time period, we would expect to see more cash flowing into shareholder's pockets. The avenue for those cash flows could include inflated stock prices (if shareholders sell shares at elevated prices) and/or increased share repurchases and dividend payments. While increased reliance on share repurchases has been well-documented (e.g., Brav, Harvey, Graham, and Michaely 2005), distributing cash to shareholders through dividend payments was less common prior to the cut in dividend tax rates in 2003. Nonetheless, firms with aggressive corporate cultures might have seen higher dividend yields as one method of satisfying shareholders. Alternatively, firms with aggressive corporate cultures might avoid dividend payments to increase their ability to aggressively pursue investment opportunities, including acquisitions, capital investment, and R&D expenditures. Given these conflicting possibilities for how increased risk-taking could impact dividend yields, we make no empirical predictions regarding this financing policy.

*2.3 Impact of SOX on Aggressive Reporting and Other Corporate Policies*

We test our predictions based on the years leading up to the Sarbanes-Oxley Act of 2002. This time period witnessed numerous high-profile accounting scandals, the proliferation of structured tax shelter transactions, and dramatic increases in stock prices (especially for firms in high-tech industries). It is also the time period during which managers increasingly focused on short-term performance as opposed to long-term value creation (Jensen 2005; Graham, Harvey, and Rajgopal 2006). Thus, many firms seemed to possess an aggressive corporate culture in the years leading up to SOX, making it an ideal time period to test our predictions for the association between aggressive financial and tax reporting and other corporate policies.

The stated purpose of SOX is to protect investors by improving the accuracy and reliability of corporate disclosures made pursuant to the securities law. Consistent with that purpose, recent research suggests that SOX improved the quality of financial reporting in a variety of dimensions. Cohen, Dey, and Lys (2008) find evidence that accrual-based earnings management substantially declined in the years following SOX, while real earnings management significantly increased over the same time period. Bartov and Cohen (2008) similarly document a decline in accrual-based earnings management in the post-SOX time period and a reduced frequency of just meeting or beating analysts' earnings expectations compared to the years leading up to SOX. Lobo and Zhou (2006, 2009) provide evidence of more conservative financial reporting in the post-SOX time period, and this increase in conservatism is greatest for firms with aggressive financial reporting in the pre-SOX time period. Given this evidence of improved financial reporting quality in the post-SOX time period, and our prediction that aggressive financial reporting combined with aggressive tax reporting is indicative of an aggressive corporate culture, we conjecture that SOX also affected other corporate practices. Specifically, *we predict that firms with aggressive reporting in the pre-SOX time period reduce the aggressiveness of their investing and financing policies in the post-SOX time period*. Evidence to the contrary would suggest that SOX did *not* have a broad impact on the corporate cultures of firms with aggressive reporting in the pre-SOX time period.

## 3. Data, Sample Selection, and Research Methodology

### *3.1 Data and Sample Selection*

To perform our empirical tests, we utilize financial statement data from Compustat, executive compensation data from Execucomp, and corporate acquisitions data from SDC Platinum. Table 1 summarizes the sample selection procedures for our empirical tests. We start

with all firm-year observations from *Compustat*'s annual industrial file for 1994 through 2007 (146,456 firm-years; 20,019 firms). Our sample period starts in 1994 because it was approximately at this time that stock prices began to steadily increase until their swift decline in 2000. Moreover, SFAS No. 109 had been in effect for more than a year in 1994, increasing the reliability of the tax footnote data on which our tax aggressiveness measures are based. The sample period ends in 2007, as this was the last year before the 2008 recession and the stock market decline that accompanied it.

From this initial data set, we eliminate observations associated with a subsidiary (3,315 firm-years; 393 firms) or foreign incorporated unit (28,820 firm-years; 4,165 firms), observations with book value of equity less than or equal to zero (14,691 firm-years; 824 firms), and observations in regulated industries such as utilities (SIC code 49) and financial services (SIC codes 60-69) (24,849 firm-years; 3,329 firms), since these firms likely face different reporting incentives and regulatory scrutiny than do other firms. With this preliminary sample (74,781 firm-years; 11,308 firms), we compute our measures of financial and tax reporting aggressiveness. However, we eliminate observations that lack the data necessary to compute financial reporting aggressiveness (20,541 firm-years; 2,436 firms) or tax reporting aggressiveness (4,296 firm-years; 373 firms). These eliminations reduce our available sample to 49,944 firm-years (8,499 firms).

[INSERT TABLE 1 HERE]

Next, we partition the available sample into the pre-SOX time period (1994-2000) and the post-SOX time period (2003-2007). We eliminate all fiscal year 2001 and 2002 observations (6,680 firm-years; 3,772 firms) because we view these years as the transition period before and after SOX. Our research methodology utilizes firm fixed effects to measure average firm

behavior over extended periods of time. Thus, to remain in the pre-SOX (post-SOX) sample, firms must have at least five years of data available between 1994 and 2000 (2003 and 2007). We also require that firms are cumulatively profitable on a pre-tax basis over the pre-SOX (post-SOX) time period to remain in the pre-SOX (post-SOX) sample. We impose this last requirement because unprofitable firms have few incentives to engage in aggressive tax avoidance, which is a key component of our empirical predictions.[13] Together, these data requirements generate a final pre-SOX sample of 14,772 firm-years (2,314 firms) and a final post-SOX sample of 7,100 firm-years (1,420 firms).

*3.2 Measuring Financial and Tax Reporting Aggressiveness*

As previously discussed, we define aggressive tax reporting as tax planning that generates uncertain tax positions and reduces income tax liabilities but not pretax financial income. We also define aggressive financial reporting as financial accounting choices that cause pretax financial income to be significantly higher than it would be under a neutral application of GAAP. We follow Frank et al. (2009) and use discretionary permanent book-tax differences (*DTAX*) as our primary proxy for tax reporting aggressiveness and performance-matched discretionary accruals (*DFIN*) as our only proxy for financial reporting aggressiveness.

*DFIN* reflects pre-tax accruals that deviate from an expectations model and presumably represent intentional earnings manipulations. We follow Dechow, Sloan, and Sweeney (1995) and calculate *DFIN* as the residual from regressions of total pre-tax accruals on nondiscretionary sources of accruals (e.g., changes in revenues after adjusting for changes in accounts receivable and property, plant, and equipment). However, we calculate total pre-tax accruals using

[13] We acknowledge that the cumulative profitability requirement likely eliminates small technology firms that may have also behaved aggressively to take advantage of the stock market increases of the late 1990's. However, losses distort most measures of tax avoidance, and given our focus on firms with aggressive financial *and* tax reporting, we determined that the benefits of this data requirement outweighed the associated costs.

statement of cash flow data to avoid the measurement error associated with the balance sheet approach (Hribar and Collins 2002), and we performance-adjust the residuals consistent with Kothari, Leone, and Wasley (2002). Dechow et al. (1995) use samples of firms, which are known to have manipulated their earnings, to establish the validity of their discretionary accrual model, and Badertscher, Phillips, Pincus, and Rego (2009) demonstrate firms that restate earnings downward (and thus had previously managed earnings upward) have larger performance-adjusted discretionary accruals in the restated year (as originally filed) than a sample of matched control firms. Thus, we are confident that *DFIN* is a valid proxy for aggressive financial reporting.

Our primary proxy for tax reporting aggressiveness, *DTAX*, reflects tax avoidance that reduces income tax liabilities but not financial statement income. Similar to the methodology used to calculate *DFIN*, we calculate *DTAX* as the residual from regressions of permanent book-tax differences on items not typically related to aggressive tax planning (e.g., state tax expense and changes in net operating loss carryforwards).[14] Frank et al. (2009) establish the validity of *DTAX* as a proxy for aggressive tax avoidance by demonstrating that *DTAX* predicts tax shelter activity in a sample that includes firms known to have engaged in tax shelter transactions and similar firms matched on industry, year, and total assets. Thus, we are confident that *DTAX* is a

[14] Differences between financial and taxable income, aka book-tax differences, are generally classified as temporary or permanent in nature. While temporary differences eventually reverse (e.g., differences due to different depreciation rates for book and tax purposes), permanent differences do not reverse (e.g., municipal bond interest income is never subject to income tax, but it is recognized as income for book purposes). Frank et al. (2009) base their *DTAX* measure on permanent differences because they argue that many of the tax strategies that are considered "aggressive" generate permanent rather than temporary book-tax differences and corroborate this assertion with an analysis of tax shelters examined by Wilson (2009). Nonetheless, *DTAX* will not reflect several well-known tax shelters that generate temporary book-tax differences, including SILOs and LILOs (see Wilson 2009 for additional discussion of specific tax shelter transactions and their associated book-tax differences).

valid proxy for aggressive tax reporting. See Appendix A for details regarding the calculations of *DTAX* and *DFIN*.[15]

*3.3 Estimating Firm Fixed Effects for Aggressive Reporting and Corporate Policy Variables*

We predict that aggressive financial and tax reporting are associated with other aggressive corporate policies, consistent with firms exhibiting an aggressive corporate culture. Corporate culture evolves slowly through time, often changing little even as managers join and eventually leave the firm (e.g., Van den Steen 2005b; Cronqvist et al. 2009). Thus, we are interested in firm behavior over an extended period of time. We first analyze firm behavior in the pre-SOX time period (1994-2000), as this time period witnessed numerous accounting scandals, increased tax sheltering, and increasingly aggressive investing and financing practices. We then analyze changes in firm behavior from the pre- to post-SOX time period, to evaluate whether SOX significantly altered corporate practices.

To measure firm behavior over these extended time periods, we adopt the basic research methodology of Bertrand and Schoar (2003). However, while that study focuses on *managers* (and manager fixed effects), we focus on *firms* (and firm fixed effects). Conceptually, we utilize two panel data sets (for the pre- and post-SOX time periods) and separately regress each corporate policy variable on firm and year fixed effects and control variables that account for variation in each dependent variable. The basic model specification is the following:

$$CORP\_POLICY = \alpha_t + \gamma_i + \beta X_{it} + \varepsilon_{it} \quad (1)$$

[15] In untabulated robustness tests, we also re-run all analyses using cash effective tax rates (ETRs) as our proxy for tax reporting aggressiveness, where cash ETRs are calculated as cash taxes paid, scaled by pre-tax income adjusted for special items. Although cash ETRs have several advantages over *DTAX* as a proxy for tax aggressiveness (e.g., changes in tax reserves – aka tax cushion – do not impact cash ETRs and cash ETRs reflect tax avoidance that generates temporary *and* permanent book-tax differences), it also has several substantial disadvantages as a proxy for tax aggressiveness. For instance, cash ETRs reflect a broad array of tax planning activities, including many that are entirely acceptable to both practitioners and the IRS. Cash ETRs also reflect accrual-based earnings management when measured over a short time horizon, which we do not want to capture in our tax aggressiveness measure. Nonetheless, results from tests based on cash ETRs are qualitatively similar to those based on *DTAX*. As a result, we only tabulate results for tests that utilize *DTAX* as the measure of tax aggressiveness.

where *CORP_POLICY* represents one of twelve corporate policy variables, including our two proxies for aggressive financial (*DFIN*) and tax reporting (*DTAX*); our three proxies for investing activities, including capital expenditures (*CAPX*), the number of acquisitions (*NUM_ACQ*), and R&D expenditures (*R&D*); and our seven proxies for financing policies, including total leverage (*TOTLEV*), interest coverage (*INT_COV*), the ratio of long-term debt to total debt debt (*%LTDEBT*), net stock issuances (*STOCK_ISSUE*), net debt issuances (*DEBT_ISSUE*), cash holdings (*CASH*), and dividend yield (*DIV_YLD*). The $\alpha_t$ are year fixed effects and $\gamma_i$ are firm fixed effects; $X_{it}$ represents a vector of time-varying control variables; and $\varepsilon_{it}$ is the error term. The firm fixed effect for each corporate policy variable ($\gamma_i$) captures the average value for each corporate policy (e.g., *TOTLEV*) at firm *i*, after controlling for firm characteristics known to explain significant variation in that corporate policy (e.g., cash flow, pre-tax return on assets, and firm size).

To determine the vector of time-varying control variables ($X_{it}$) for each corporate policy regression, we generally follow the model specifications in Bertrand and Schoar (2003). With respect to the investment policy regressions, $X_{it}$ includes cash flow, lagged Tobin's *q*, and the lagged natural log of total assets in the capital expenditures (*CAPX*) regression; pre-tax return on assets and the lagged natural log of total assets in the number of acquisitions (*NUM_ACQ*) regression; and cash flow, pre-tax return on assets, and the current year natural log of total assets in the R&D expenditures (*R&D*) regression. For all seven financing policy regressions (*TOTLEV*, *INT_COV*, *%LTDEBT*, *STOCK_ISSUE*, *DEBT_ISSUE*, *CASH*, and *DIV_YLD*), $X_{it}$ includes cash flow, pre-tax return on assets, and the lagged natural log of total assets. See Appendix B for complete model specifications for each corporate policy variable regression that generates firm fixed effects.

Because Bertrand and Schoar (2003) do not investigate financial and tax reporting aggressiveness, we develop our own vectors of time-varying control variables ($X_{it}$) for these regressions. We select control variables that prior research has linked to financial and tax reporting aggressiveness (Rego 2003; Frank et al. 2009; Rego and Wilson 2011). Thus, in our tax aggressiveness (*DTAX*) regression, $X_{it}$ includes pre-tax return on assets, an indicator variable for net operating losses, an indicator variable for foreign income, and the current year natural log of total assets. In our financial reporting aggressiveness (*DFIN*) regression, $X_{it}$ includes annual stock returns, an indicator variable for analyst following, the change in pre-tax cash flow from operations, and the current year natural log of total assets.

*3.4 Descriptive Statistics for Pre-SOX Sample*

Table 2, Panel A contains descriptive statistics for basic firm characteristics and the corporate policy variables over the pre-SOX time period (1994-2000), and Panel B contains descriptive statistics for the firm fixed effects from each corporate policy regression. Because we require firms to be cumulatively profitable over the entire pre-SOX time period, the results in Panel A indicate that on average our pre-SOX sample is highly profitable (mean *PTROA* is 12.4 percent), with mean cash flow (*CASH_FLOW*) of 13.4 percent and just 19.9 percent of sample firms reporting net operating loss carryforwards (*NOL_D*) across all tax jurisdictions. While 34.8 percent of pre-SOX sample firms report foreign income (*FOR_D*), 74.7 percent have at least one analyst following the firm (*AF_D*), and there is considerable variation in stock returns across the sample, with mean *STOCK_RET* of 15.9 percent but median *STOCK_RET* of just 2.7 percent.

[INSERT TABLE 2 HERE]

Table 2 also contains descriptive statistics for the unadjusted corporate policy variables (Panel A) and the firm fixed effect corporate policy variables (Panel B) in the pre-SOX time period. The results in Panel A indicate that pre-SOX sample firms have near-zero mean and median *DFIN* and *DTAX*, and their mean and median *CASH_ETR* is approximately 27 percent. The statistics also suggest that a majority of pre-SOX sample firms acquired at least one other firm (*NUM_ACQ*); the median firm did *not* pay dividends (*DIV_YLD*) or make R&D expenditures (*R&D*); and the average firm is not highly levered (*TOTLEV*) but makes significant capital expenditures (*CAPX*) each year, relative to net property, plant, and equipment. Lastly, the results in Panel B generally indicate that the firm fixed effects (*FFE*) variables are not highly skewed, although the means and medians of interest coverage (*INT_COV_FFE*), dividend yield (*DIV_YLD_FFE*), and R&D (*R&D_FFE*) are somewhat right-skewed.

*3.5 Methodology for Identifying HI_BOTH, AVERAGE, and LO_BOTH Firms*

To test our prediction that firms with aggressive financial and tax reporting exhibit other aggressive corporate policies, we must identify those firms with aggressive reporting behaviors in the pre-SOX time period. To accomplish this task, we separately rank our pre-SOX sample firms based on the *DFIN* and *DTAX* firm fixed effect variables (hereinafter denoted *FFE* at the end of each variable name) and partition the pre-SOX sample into quintiles of each variable. If a firm has *DFIN_FFE* and *DTAX_FFE* in the fourth or fifth quintile of each variable (e.g., in the fourth quintile of *DFIN_FFE* and the fifth quintile of *DTAX_FFE*), we classify it as a *HI_BOTH* firm. If a firm has *DFIN_FFE* and *DTAX_FFE* in the first or second quintile of each variable (e.g., in the first quintile of *DFIN_FFE* and the second quintile of *DTAX_FFE*), we classify it as a *LO_BOTH* firm. We classify all other firms as *AVERAGE* firms.

Table 3 provides descriptive statistics for each quintile of firms separately ranked on *DFIN_FFE* (Panel A) and *DTAX_FFE* (Panel B). The results in Panel A indicate that relative to firms in the middle three quintiles, firms in the highest quintile of financial reporting aggressiveness (*DFIN_FFE*) are generally larger, older firms that are more tax aggressive with less extensive foreign operations, higher market-to-book ratios and sales growth, and they experience higher, more volatile stock returns. Firms in the highest quintile of *DFIN_FFE* are also more likely to restate their earnings and compensate their top executives with more variable pay (i.e., bonus and stock-based pay) than firms in the middle quintiles of *DFIN_FFE*.

[INSERT TABLE 3 HERE]

The results in Panel B indicate that relative to firms in the middle three quintiles, firms in the highest quintile of tax reporting aggressiveness (*DTAX_FFE*) are generally larger, older firms with more aggressive financial reporting, less extensive foreign operations, higher market-to-book ratios and sales growth, and they experience higher, more volatile stock returns. Firms in the highest quintile of *DTAX_FFE* are also more likely to restate their earnings and compensate their top executives with more variable pay (i.e., bonus and stock-based pay) than firms in the middle quintiles of *DTAX_FFE*. Thus, based on the quintile data in Table 3, it appears that firms in the highest quintile of *DFIN_FFE* are roughly similar to those in the highest quintile of *DTAX_FFE*.

As previously discussed, we partition pre-SOX sample firms into *HI_BOTH*, *AVERAGE*, and *LO_BOTH* groups based upon quintiles of financial and tax reporting aggressiveness, where *HI_BOTH* (*LO_BOTH*) firms have relatively high (low) financial and tax reporting aggressiveness compared to *AVERAGE* firms. Table 4 contains results for statistical tests of differences in the mean values of firm characteristics across the three groups. Consistent with

the results in Table 3, the results in Table 4 indicate that relative to *AVERAGE* firms, *HI_BOTH* firms are significantly larger, older firms with higher market-to-book ratios, are more likely to restate their earnings, and they compensate top executives with greater variable pay than *AVERAGE* firms. However, there are a few results that differ from those in Table 3, as well. *HI_BOTH* firms exhibit the lowest rates of pre-tax profitability, but that profitability is less volatile compared to that of *AVERAGE* and *LO_BOTH* firms. In addition, *HI_BOTH* firms have more extensive foreign operations, significantly greater analyst following, and also experience greater CEO turnover than *AVERAGE* firms.

We also note that while the statistics in Table 3 suggest that firms in Q1 of *DFIN_FFE* or *DTAX_FFE* are somewhat similar to firms in Q5 of those variables, the results in Table 4 indicate that firms classified as *LO_BOTH* are significantly different from *HI_BOTH* firms in many dimensions. Thus, our method of classifying firms as *HI_BOTH* vs. *LO_BOTH* successfully identifies substantially different types of firms. Overall, Table 4 provides an interesting profile of firms that we classify as *HI_BOTH* (i.e., aggressive reporting) firms.

[INSERT TABLE 4 HERE]

## 4. Discussion of Main Empirical Results

### *4.1 Aggressive Reporting and Other Corporate Policies in the Pre-SOX Time Period*

We predict that firms with aggressive financial and tax reporting also exhibit other aggressive corporate policies. We test this prediction in two ways. First, we examine Spearman correlations between a *HI_BOTH* indicator variable and the other corporate policy firm fixed effects variables. Second, we also perform simple OLS regression analyses that regress each

corporate policy firm fixed effect variable on our financial and tax reporting firm fixed effect variables. The basic regression model is presented in equation (2) below:

$$CORP\_POLICY\_FFE = \beta_0 + \beta_1 HI\_TAX + \beta_2 HI\_FIN + \beta_3 HI\_BOTH + \varepsilon \quad (2)$$

where *CORP_POLICY_FFE* represents one of ten corporate policy firm fixed effects variables; *HI_TAX* equals 1 for firms in the fourth or fifth quintile of *DTAX_FFE*, and zero otherwise; *HI_FIN* equals 1 for firms in the fourth or fifth quintile of *DFIN_FFE*, and zero otherwise; and *HI_BOTH* = 1 for firms previously classified as *HI_BOTH* firms, and zero otherwise. This analysis tests whether firms with aggressive financial *and* tax reporting exhibit aggressiveness in their other corporate policies that is incremental to financial *or* tax reporting aggressiveness in isolation. Importantly, in both the correlation and regression analyses, we only compare *HI_BOTH* firms to *AVERAGE* firms and eliminate *LO_BOTH* firms from the sample. We eliminate *LO_BOTH* firms from the sample because we are most interested in how firms with "aggressive" reporting compare to firms with "average" reporting behaviors. Similar to *HI_BOTH* firms, *LO_BOTH* firms also exhibit extreme reporting behaviors but in the opposite direction, and thus would be interesting to study in their own right. Given our focus on aggressive reporting, we leave such analyses to future research.

Table 5 contains the Spearman correlations between *HI_BOTH* and the other corporate policy firm fixed effects variables in the pre-SOX time period. Consistent with our empirical predictions, the results in Panel A suggest that *HI_BOTH* firms are more likely to acquire other firms, have higher capital expenditures and leverage ratios, lower interest coverage, greater reliance on short-term debt (relative to total debt), larger stock and debt securities issuances, and larger cash holdings and dividend yields in the pre-SOX time period. Only the correlation between *HI_BOTH* and R&D expenditures is contrary to expectations (i.e., not significant).

Thus, the results in Table 5 suggest that firms with aggressive financial and tax reporting also exhibited other aggressive corporate practices in the pre-SOX time period.

[INSERT TABLE 5 HERE]

Table 6 presents results for ten different estimations of equation (2), where each estimation is based on a different corporate policy firm fixed effect dependent variable (e.g., *CAPX_FFE*, *R&D_FFE*). We predict that firms with aggressive financial and tax reporting also exhibit other aggressive corporate policies. Thus, we predict that the coefficients on *HI_BOTH* should be significant in each estimation. Many of the coefficients on *HI_BOTH* in Table 6 are consistent with expectations. In particular, the results indicate that *HI_BOTH* firms are more highly levered, have lower interest coverage, issue more stock and debt, have greater cash holdings and higher dividend yields than *AVERAGE* firms. However, while the coefficients on *HI_TAX* suggest that tax aggressiveness is associated with greater capital expenditures and more frequent acquisitions, the coefficients on *HI_BOTH* are not significant in those corporate policy regressions. In addition, the coefficient on *HI_BOTH* in the *R&D_FFE* regression is significant and negative, consistent with *HI_BOTH* firms making *smaller* R&D expenditures than *AVERAGE* firms (and relative to firms with *only* aggressive financial *or* tax reporting). This last result is consistent with aggressive reporting firms engaging in real earnings management through R&D expenditures. Taken together, the results in Tables 5 and 6 provide some evidence that firms with aggressive financial and tax reporting in the pre-SOX time period also exhibit other aggressive corporate policies, consistent with these firms possessing aggressive corporate cultures.

[INSERT TABLE 6 HERE]

*4.2 Impact of SOX on Aggressive Reporting and Other Corporate Policies*

Given recent empirical evidence of improved financial reporting quality in the post-SOX time period (e.g., Cohen et al. 2008; Lobo and Zhou 2006, 2009), and our prediction that aggressive reporting is indicative of an aggressive corporate culture, we conjecture that SOX may have also altered other corporate practices. In particular, we predict that firms with aggressive reporting in the pre-SOX time period *reduce* the aggressiveness of their investing and financing policies in the post-SOX time period. To test this prediction, we impose the same sample selection criteria as required for the pre-SOX sample (e.g., firms must have at least five years of data and be cumulatively profitable in the post-SOX time period) and create a post-SOX sample of firms. However, we require that post-SOX sample firms also be present in our pre-SOX sample, which allows us to investigate corporate policy changes for a fixed set of firms.

Table 7 illustrates how firms classified as *LO_BOTH*, *AVERAGE*, and *HI_BOTH* in the pre-SOX time period are subsequently classified in the post-SOX time period. For example, of the 167 firms classified as *HI_BOTH* firms in the pre-SOX time period, 19 of them are also classified as *HI_BOTH* firms in the post-SOX time period, while 136 (12) are classified as *AVERAGE* (*LO_BOTH*) firms in the post-SOX time period. Thus, the vast majority of pre-SOX *HI_BOTH* firms have less aggressive reporting in the post-SOX time period. Of the 546 firms classified as *AVERAGE* firms in the pre-SOX time period, 420 of them remain *AVERAGE* in the post-SOX time period, while 56 (70) migrate to *HI_BOTH* (*LO_BOTH*) status. Thus, most pre-SOX *AVERAGE* firms do not increase the aggressiveness of their financial and tax reporting in the post-SOX time period. Overall, the preliminary results in Table 7 are consistent with SOX moderating the aggressive reporting behavior of firms that are present in both our pre- and post-SOX samples.[16]

[16] Table 7 excludes firms that only exist in *either* the pre- or post-SOX time period. In particular, it excludes 250 (82) firms classified as *HI_BOTH* in the pre-SOX (post-SOX) time period; it excludes 904 (375) firms classified as

[INSERT TABLE 7 HERE]

Table 8 contains mean and median changes in corporate policy firm fixed effect variables from the pre- to the post-SOX time period, conditional on whether the firm was classified as a *LO_BOTH*, *AVERAGE*, or *HI_BOTH* firm in the pre-SOX time period. Recall our prediction that SOX reduced the aggressiveness of the investing and financing policies of *HI_BOTH* firms, consistent with SOX having a broad impact on the corporate culture of firms with aggressive reporting. Thus, we focus our discussion on firms classified as *HI_BOTH* firms in the pre-SOX time period (i.e., the far right column in Table 8). The results indicate that on average, *HI_BOTH* firms increased their adjusted financial reporting aggressiveness (*DFIN_FFE*), but their average increase is significantly smaller than that for *AVERAGE* and *LO_BOTH* firms. In contrast, *HI_BOTH* firms decreased their adjusted tax reporting aggressiveness (*DTAX_FFE*), and their average decrease is significantly larger than that for *AVERAGE* and *LO_BOTH* firms. These results could be driven by SOX altering the financial and tax reporting practices of *HI_BOTH* firms relative to *AVERAGE* and *LO_BOTH* firms. Alternatively, they could also reflect mean reversion, since *HI_BOTH* firms experienced the smallest (i.e., least positive or most negative) changes in *DFIN_FFE* and *DTAX_FFE*.

[INSERT TABLE 8 HERE]

Turning to changes in other corporate policy firm fixed effect variables in Table 8, we find that *HI_BOTH* firms decreased their capital (*CAPX_FFE*) and R&D expenditures (*R&D_FFE*) more than *AVERAGE* and *LO_BOTH* firms, consistent with a decrease in their investment policy aggressiveness.[17] *HI_BOTH* firms also increased their stock issuances

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*AVERAGE* in the pre-SOX (post-SOX) time period; and it excludes 257 (73) firms classified as *LO_BOTH* in the pre-SOX (post-SOX) time period.

[17] Alternatively, the decrease in R&D expenditures is also consistent with increased real earnings management in the post-SOX time period, consistent with Cohen et al. (2008).

(*STOCK_ISSUE_FFE*) and cash holdings (*CASH_FFE*) less than *AVERAGE* and *LO_BOTH* firms. However, *HI_BOTH* firms increased the aggressiveness of most other financing policies. For example, *HI_BOTH* firms increased total leverage (*TOTLEV_FFE*), decreased interest coverage (*INT_COV_FFE*), issued more debt securities (*DEBT_ISSUE_FFE*), and increased dividend yields (*DIV_YLD*) more than *AVERAGE* and *LO_BOTH* firms. In sum, although we find some evidence that SOX reduced the financial and tax reporting aggressiveness of *HI_BOTH* firms relative to *AVERAGE* and *LO_BOTH* firms, our results are mixed as to whether SOX systematically reduced the aggressiveness of their other corporate policies.[18]

## 5. The Valuation Implications of Aggressive Reporting

Our final analyses examine the valuation implications of aggressive financial and tax reporting. Prior research suggests that capital market pressures cause managers to adopt aggressive practices. Graham et al. (2006) provide survey evidence that most senior financial managers believe that earnings is the most important measure of value reported to outside stakeholders. This belief causes managers to fixate on meeting earnings benchmarks, which compels them to make value-decreasing decisions to meet quarterly earnings targets. Jensen (2005) specifically considers the causes and consequences of overvalued equity, where "equity is overvalued when a firm's stock price is higher than its underlying value" (p. 5). Jensen opines

[18] In untabulated analyses, we replicate the corporate policy regressions in Table 6, but we utilize the post-SOX time period rather than the pre-SOX time period. Results from these regressions uniformly indicate that aggressive reporting is *not* associated with other aggressive corporate policies. In fact, the regression analyses suggest that *HI_BOTH* firms make fewer acquisitions, smaller debt and equity securities issuances, and maintain lower cash balances and dividend yields than firms with average financial and tax reporting in the post-SOX time period. These results are consistent with SOX significantly altering the systematic relation between aggressive reporting and other corporate practices in the post-SOX time period. However, these untabulated results are not directly comparable to those in Table 8, since Table 8 examines changes in corporate policies for firms classified as *HI_BOTH* in the pre-SOX time period, while our untabulated analyses independently identify *HI_BOTH* firms based on post-SOX data, and then examines whether aggressive reporting is associated with other aggressive corporate policies for this new sample of *HI_BOTH* firms.

that managers know the capital markets will punish a firm's stock price if the firm does not meet earnings expectations. Consequently, managers are willing to engage in inappropriate behaviors when equity prices are substantially overvalued to appear to satisfy market expectations and to avoid substantial reductions in firm value, and often, personal wealth. Jensen claims that managers at firms with overvalued equity are likely to make value-destroying acquisitions, investments, and debt and equity financing decisions, and eventually turn to accounting manipulations and fraud (i.e., aggressive financial and tax reporting). Jensen then links these inappropriate behaviors to firms with higher Tobin's *q* and market-to-book ratios. Thus, one explanation for the systematic association between aggressive reporting and aggressive investing and financing policies is that aggressive reporting firms have overvalued equity and managers utilize aggressive corporate practices to maintain the equity overvaluations.

Prior accounting research investigates whether investors properly impound information in accruals into stock price. The results generally indicate that the market overprices aggressive financial reporting, as evidenced by negative abnormal stock returns in the year *following* large positive accruals (e.g., Sloan 1996; Xie 2001). More recent studies consider alternative measures of financial reporting quality (e.g., Lev and Nissim 2004; Hanlon 2005). These studies demonstrate that various measures of current year book-tax differences contain information useful for predicting future earnings (and thus future earnings quality) and that large positive book-tax differences are associated with lower future stock returns.

In contrast, the valuation implications of aggressive tax reporting are less clear. Desai and Dharmapala (2009) and Wilson (2009) provide evidence that aggressive tax avoidance is associated with higher valuations and stock returns, but only at well-governed firms. In contrast, Hanlon and Slemrod (2009) document a small, but significant, stock price decline surrounding

news of tax shelter involvement. Thus, aggressive tax avoidance could have positive shareholder wealth effects due to the tax savings it generates, or it could have negative wealth effects if the market perceives the tax avoidance as value-decreasing or if aggressive tax avoidance masks managerial rent extraction (e.g., Desai and Dharmapala 2006).

Frank et al. (2009) also examine the future stock returns of firms with aggressive financial and tax reporting. Consistent with prior research in accounting, they find evidence of negative abnormal stock returns in the year *after* a firm reports large positive accruals. However, they also find that the negative relation between current year accruals and future stock returns is driven by firms with *both* aggressive financial and tax reporting. Thus, the evidence in Frank et al. (2009) suggests that aggressive tax reporting is an important – but previously overlooked – factor for investors' mispricing of accruals.

We build on these prior studies and investigate the current valuation implications of aggressive financial and tax reporting. Jenson (2005) argues that managers are willing to engage in "inappropriate behaviors" to meet market expectations and maintain stock prices, including undertaking value-destroying acquisitions, investments, and financing decisions, and aggressive financial reporting. While most prior research investigates the *future* stock returns of firms ranked on accrual-based and book-tax difference measures, we examine the *current* valuation implications of aggressive reporting behaviors.[19] Based on evidence of negative *future* stock returns for firms with large accruals and book-tax differences (Sloan 1996; Xie 200X; Lev and Nissim 2004; Hanlon 2005), *we predict that the equity of firms with aggressive reporting is valued at a premium at the time of the aggressive reporting, relative to firms with less aggressive reporting.* We also argue that the improved financial reporting quality in the post-SOX time

[19] One exception is Desai and Dharmapala (2009), which examines the association between tax avoidance and firm value as measured by Tobin's *q*. They find that their measure of tax avoidance (i.e., scaled U.S. book-tax differences) is associated with higher firm value, but only for firms with high institutional ownership.

period documented in Cohen et al. (2008) and Lobo and Zhou (2006, 2009) should allow investors to more accurately impound financial statement information into stock price and reduce any valuation premium associated with aggressive reporting that may have existed in the pre-SOX time period.[20] Thus, *we predict that the valuation premium associated with aggressive reporting is higher in the years leading up to SOX, but is significantly reduced in the years following SOX.*

To test these predictions, we rely on Tobin's *q* as our measure of firm value, since Jensen (2005) specifically cites higher Tobin's *q* as an indicator of overvalued equity. In addition, Tobin's *q* has been widely used in the finance literature as a measure of firm value, starting with Demsetz and Lehn (1985) and Morck, Shleifer, and Vishny (1988) and continuing to more recent studies such as Kaplan and Zingales (1997), Gompers, Ishii, and Metrick (2003), and Desai and Dharmapala (2009). We compute Tobin's *q* consistent with the latter three studies.

We utilize the following regression model to test our prediction that aggressive reporting is valued at a premium in the pre-SOX time period, relative to the post-SOX time period. We separately measure all variables in the pre- and post-SOX time periods; hence, *t* designates either the pre- or post-SOX time period.

$$Q_{it} = \beta_0 + \beta_1 PRE\_SOX_{it} + \beta_2 HI\_TAX_{it} + \beta_3 HITAX \times PRESOX_{it} + \beta_4 HI\_FIN_{it} + \beta_5 HIFIN \times PRESOX_{it} + \beta_6 HI\_BOTH_{it} + \beta_7 HIBOTH \times PRESOX_{it} + \Sigma\beta_{8\text{-}17} CORP\_POLICY\_FFE_{it} + \Sigma\beta_{18\text{-}27} CORP\_POLICY \times PRESOX_{it} + \Sigma\beta_{28\text{-}31} CONTROLS_{it} + \Sigma\beta_{32\text{-}35} CONTROLS \times PRESOX_{it} + \varepsilon \quad (3)$$

[20] Our analyses may be confounded due to our multi-year research design. In particular, while prior research analyzes annual data, we utilize 7- and 5-year time periods, pre- and post-SOX respectively. Thus, investors may be able to unravel the aggressive reporting and adjust stock prices within our measurement periods.

where $Q$ is firm $i$'s mean Tobin's $q$ measured over the pre- or post-SOX time period; *PRE_SOX* equals 1 for the pre-SOX time period, and 0 otherwise. *CORP_POLICY_FFE* is the vector of corporate policy firm fixed effects variables, which are separately measured over the pre- and post-SOX time periods. *CONTROLS* is a vector of firm-specific control variables, including *SIZE_AVG*, *PTROA_AVG*, *PTCFO_AVG*, and *ΔSALES_AVG*, which are calculated as the mean values of *SIZE*, *PTROA*, *PTCFO*, and *ΔSALES* for firm $i$ over the pre- and post-SOX time periods. We interact all variables with *PRE_SOX* to allow for differential valuation of each underlying characteristic in the pre- and post-SOX time periods, consistent with our prediction that SOX altered a broad set of corporate practices.

If investors value aggressive reporting at a premium relative to less aggressive reporting, then the coefficient on *HI_BOTH* will be positive and significant. If investors value aggressive reporting at an additional premium in the pre-SOX time period relative to aggressive reporting in the post-SOX time period, then the coefficient on *HIBOTH×PRESOX* will be positive and significant. To avoid the problems associated with correlated omitted variables, we include in equation (3) the investing and financing firm fixed effect variables (*CORP_POLICY_FFE*), since we expect aggressive reporting to be correlated with other corporate policies. We also include other firm characteristics (*CONTROLS*) that prior research shows are related to Tobin's $q$, including firm size (*SIZE*), pre-tax return on assets (*PTROA*), pre-tax cash flow from operations (*PTCFO*), and *ΔSALES* (e.g., Lang and Stulz 1994; Rountree, Weston, and Allayannis 2008).

Similar to the analyses in Tables 5 and 6, we estimate equation (3) based on firms classified as *HI_BOTH* or *AVERAGE* in the pre- or post-SOX time periods, since we are most interested in comparing *HI_BOTH* and *AVERAGE* firms. Table 9 presents two sets of results for equation (3). The first set does *not require* firms to be present in the regression sample in both

the pre- and post-SOX time periods (labeled "Non-Matched Samples"), while the second set *does require* firms to exist in the regression sample in both the pre- and post-SOX time periods (labeled "Matched Samples"). That is, to be included in the "Matched Samples" regression, a firm must be classified as a *HI_BOTH* or *AVERAGE* firm in *both* time periods; in contrast, the "Non-Matched Samples" results also includes firms that are classified as *HI_BOTH* or *AVERAGE* in at least one time period, but could be classified as *LO_BOTH* or lack requisite data in the other time period.

[INSERT TABLE 9 HERE]

The results in Table 9 are not consistent with our predictions. First, the coefficients on *HI_BOTH* are not positive and significant in either regression. In fact, the *HI_BOTH* coefficient is negative and significant for the non-matched sample regression, consistent with aggressive financial and tax reporting being valued at a small discount in the post-SOX time period. In addition, the coefficients on *HI_BOTH* interacted with *PRE_SOX* are not significant in either regression. Perhaps the only aggressive reporting result of interest is the positive and significant coefficient on *HI_TAX* in the non-matched sample regression, which suggests that aggressive tax reporting (that is *not* accompanied by aggressive financial reporting) is valued at a small premium in the post-SOX time period. We also note that the coefficient on *PRE_SOX* is large and highly significant, consistent with the market generally valuing firms at higher levels in the pre-SOX time period, relative to the post-SOX time period. Overall, we find little support for our prediction that aggressive reporting is valued more highly than average reporting in the pre- *or* post-SOX time periods.

## 6. Conclusions and Limitations

This study provides descriptive evidence that aggressive financial and tax reporting was systematically associated with other aggressive corporate policies in the years leading up to the Sarbanes-Oxley Act of 2002. We utilize the combination of aggressive financial and tax reporting over a multi-year time period as one manifestation of an aggressive corporate culture. Prior research describes corporate culture as shared beliefs within an organization about the "right" corporate practices. These shared beliefs can reduce agency costs by decreasing monitoring costs, increasing delegation, and facilitating coordination across functional groups (e.g., Kreps 1990; Van den Steen 2005a). We do not directly measure corporate culture in this study. We instead conjecture that an aggressive corporate culture should systematically influence all functions across an organization, where our focus is on financial and tax reporting, investment, and financing decisions.

We initially focus on the pre-SOX time period (1994-2000), when stock prices surged and aggressive corporate practices were evident at many firms. Our empirical analyses provide evidence that firms with aggressive reporting in the pre-SOX time period also maintained other aggressive policies, including greater capital expenditures, more frequent acquisitions, higher leverage, lower interest coverage, larger debt and equity securities issuances, greater reliance on short-term debt, and larger cash holdings and dividend yields. However, our results also suggest that SOX significantly altered the systematic associations between aggressive reporting and other corporate policies during the post-SOX time period (2003-2007), consistent with SOX dampening previously aggressive corporate cultures. We find little evidence that firms with aggressive reporting in either the pre- or post-SOX time period were valued at a premium relative to firms with average reporting behaviors. Instead any overvaluations appear to be driven by other investment and financing practices.

This study has numerous limitations that may affect inferences from empirical results. Perhaps most notable are our definitions of financial and tax reporting aggressiveness, which are reflected in our empirical proxies for those underlying constructs. Our findings are also subject to our sample selection procedures, since we require firms to have at least five years of data and be cumulatively profitable over the pre- and post-SOX time periods to remain in our sample. Our empirical models that generate each corporate policy firm fixed effect currently exclude manager fixed effects; thus, some of the associations between the aggressive reporting and corporate policy firm fixed effects could be driven by individual managers rather than an aggressive corporate culture. Lastly, we acknowledge that corporate governance strength is an important factor that is also currently absent from our empirical tests. We intend to address the corporate governance and manager fixed effects issues in future drafts. Nonetheless, our current study provides a promising foundation on which we can further investigate the systematic relations between aggressive financial and tax reporting and other corporate practices.

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## APPENDIX A
## Variable Definitions

| **Tax and Financial Reporting Variables** | |
|---|---|
| *DFIN* | = Firm *i*'s performance-adjusted, discretionary accruals in year *t,* based on the modified-Jones model in Dechow, Sloan, and Sweeney 1995, which is estimated using data from the statement of cash flows to measure total accruals (Hribar and Collins 2002), and then performance-adjusted based on Francis, LaFond, Olsen, and Schipper (2003). To estimate the model yearly by two-digit SIC code, we require that at least 10 observations be available. The model is: $TAC_{Cj,t} / T_{Aj, t-1} = {}_{a1}*[1 / T_{Aj, t-1}] + {}_{a2}*[(\Delta RE_{Vj, t} - \Delta T_{Rj, t})/TAj, {}_{t-1}] + {}_{a3}*[PP_{Ej, t} / TAj, {}_{t-1}]$, where: *TACC* is total accruals for firm *j* in year *t*, which is defined as income before extraordinary items adjusted for total tax expense (#123 + #16), less net cash flow from operating activities adjusted for income taxes paid from the statement of cash flow and extraordinary items and discontinued operations (#308 + #317 – #124). *TA* is the beginning-of-the-year total assets (lagged #6). *ΔREV* is the change in sales in year *t* (#12); *PPE* is gross property, plant, and equipment in year *t* (#7); *ΔTR* is the change in trade receivables in year *t* (#151). All variables are standardized by total assets at year-end *t-1*. |
| *DTAX* | = Firm *i*'s discretionary permanent differences in year *t*, estimated based on the permanent difference model in Frank et al. (2009). To estimate the model yearly by two-digit SIC code, we require that at least 15 observations be available. The model is: $PERMDIFF_{it} = \beta_0 + \beta_1 INTANG_{it} + \beta_2 UNCON_{it} + \beta_3 MI_{it} + \beta_4 CSTE_{it} + \beta_5 \Delta NOL_{it} + \beta_6 LAGPERM_{it} + e_{it}$; where *PERMDIFF* = total book-tax differences – temporary book-tax differences = *[{BI – [(CFTE +CFOR) / STR]} – (DTE / STR)],* scaled by beginning of year assets (#6); *BI* = pretax book income (#170); *CFTE* = current federal tax expense (#63); *CFOR* = current foreign tax expense (#64); *STR* = statutory tax rate; *DTE* = deferred tax expense (#50); *INTANG* = goodwill and other intangible assets (#33), scaled by beginning of year assets (#6); *UNCON* = income (loss) reported under the equity method (#55), scaled by beginning of year assets (#6); *MI* = income (loss) attributable to minority interest (#49), scaled by beginning of year assets (#6); *CSTE* = current state tax expense (#173), scaled by beginning of year assets; *ΔNOL* = change in net operating loss carryforwards (#52), scaled by beginning of year assets (#6); *LAGPERM* = *PERMDIFF* in year *t-1*. |
| **Other Corporate Policy Variables** | |
| *CAPX* | = Capital expenditures (*CAPX*), divided by beginning net property, plant, and equipment (*PPENT*); |
| *NUM_ACQ* | = The number of acquisitions over time period *t*, as reported by the SDC Platinum database; |
| *R&D* | = Research and development expenditures (*XRD*), divided by net sales (*SALE*); |
| *TOTLEV* | = Leverage, defined as the sum of long-term debt (*DLTT*) and debt in current liabilities (*DLC*) divided by the sum of long-term debt (*DLTT*), debt in current liabilities (*DLC*), and book value of common equity (*CEQ*); |
| *INT_COV* | = Interest coverage, defined as earnings before depreciation, interest and tax (OIBDP), divided by interest expenses (*XINT*); |

*%LTDEBT* = Long-term debt (DLTT) divided by the sum of the debt in current liabilities (DLC) and long-term debt (DLTT).

*STOCK_ISSUE* = Stock issued (SSTK) less stock repurchased (PRSTKC), divided by total assets.

*DEBT_ISSUE* = Debt issued (DLTIS) less debt redeemed (DLTR), divided by total assets.

*CASH* = Cash and cash equivalents (*CHE*), divided by lagged total assets (*AT*);

*DIV_YLD* = Dividend yield, defined as the sum of common dividends (*DVC*) and preferred dividends (*DVP*), divided by earnings before depreciation, interest and tax (*OIBDP*);

**Descriptive Variables**

*PTROA* = Pre-tax income (*PI*) divided by lagged total assets (*AT*);

*STD_PTROA* = The standard deviation of *PTROA* for firm *i* over time period *t*;

*CASH_FLOW* = The sum of earnings before extraordinary items (*IB*) and depreciation (*DP*) divided by beginning total assets;

*ΔPTCFO* = The change in pre-tax cash flow from operations (*OANCF - XIDOC + TXPD*) divided by beginning total assets;

*CASH_ETR* = The cash effective rate, defined as cash tax paid (*TXPD*) divided by pre-tax income (*PI*) before special items (*SPI*). ETRs with negative pretax income are set to missing. The remaining non-missing ETRs are winsorized (reset) so that the largest observation is 1 and the smallest is 0;

*ASSETS* = Total assets (*AT*);

*SIZE* = The natural log of total assets (*AT*);

*FIRM_AGE* = The number of months since firm *i*'s first stock return record appeared on CRSP, divided by 12;

*NOL_D* = 1 if firm *i* has non-zero tax loss carry-forwards (*TLCF*), and 0 otherwise;

*FOR_D* = 1 if pre-tax foreign income (*PIFO*) is not equal to 0, and 0 otherwise;

*AF_D* = 1 if firm *i* has at least one analyst covering the firm on I/B/E/S; 0 otherwise;

*STOCK_RET* = The annual percentage change in firm *i*'s closing price at fiscal year end $((PRCC\_F_t - PRCC\_F_{t-1})/PRCC\_F_{t-1})$;

*STD_STOCK_RET* = Standard deviation of *STOCK_RET* for firm *i* over time period *t*;

*TOBINSQ* = Tobin's Q, defined as the market value of assets divided by the book value of assets (*AT*), where the market value of assets equals the book value of assets (*AT*) plus the market value of common equity (*PRCC_F * CSHO*) less the book value of common equity (*CEQ*), and less balance sheet deferred taxes (*TXDB*);

*MTB* = Market value of common equity (*PRCC_F * CSHO*) divided by book value of common equity (CEQ);

*ΔSALES* = The annual percentage change in sales $((SALE_t - SALE_{t-1})/SALE_{t-1})$;

*RESTATE* = 1 if firm *i* restated its earnings over the sample period, and 0 otherwise;

*PCT_MBE* = The number of years that firm *i* meets or beats I/B/E/S analyst consensus forecast of annual EPS divided by the number of years with sufficient I/B/E/S data over

the sample period;

*PCT_MBE_Q* = The number of quarters that firm *i* meets or beats I/B/E/S analyst consensus forecast of quarterly EPS divided by the number of quarters with sufficient I/B/E/S data over the sample period;

*TOP5_VARPAY* = Mean variable pay of top five paid executives at firm *i*, where variable pay is calculated as the ratio of bonus, restricted stock and stock options to total compensation;

*CEO_VARPAY* = CEO variable pay, where variable pay is calculated as the ratio of bonus, restricted stock and stock options to total compensation;

*NUM_CEOS* = Firm *i*'s number of CEOs during 1994-2000 as reported on Execucomp;

*CEO_TENURE* = The number of years the CEO was in office, calculated as the difference between the date the CEO took office (BECAMECEO) and the date the CEO left office (LEFTOFC). If the CEO was still in office in 2000, tenure is calculated as of the end of fiscal year 2000.

## APPENDIX B
## Model Specifications for Corporate Policy Variable Regressions

**Models for Generating Firm Fixed Effects ($\gamma_i$) for Tax and Financial Reporting Variables**

$$DTAX = \alpha_t + \gamma_i + \beta_1 PTROA_{it} + \beta_2 SIZE_{it} + \beta_3 NOL\_D_{it} + \beta_4 FOR\_D_{it} + \varepsilon_{it}$$

$$DFIN = \alpha_t + \gamma_i + \beta_1 STOCK\_RET_{it} + \beta_2 AF\_D_{it} + \beta_3 \Delta PTCFO_{it} + \beta_4 SIZE_{it} + \varepsilon_{it}$$

**Models for Generating Firm Fixed Effects ($\gamma_i$) for Investing and Financing Policy Variables**

$$CAPX = \alpha_t + \gamma_i + \beta_1 CASH\_FLOW_{it} + \beta_2 LAG\_Q_{it} + \beta_3 LAG\_SIZE_{it} + \varepsilon_{it}$$

$$NUM\_ACQ = \alpha_t + \gamma_i + \beta_1 PT\_ROA_{it} + \beta_2 LAG\_SIZE_{it} + \varepsilon_{it}$$

$$R\&D = \alpha_t + \gamma_i + \beta_1 PT\_ROA_{it} + \beta_2 CASH\_FLOW_{it} + \beta_3 SIZE_{it} + \varepsilon_{it}$$

$$TOTLEV = \alpha_t + \gamma_i + \beta_1 PT\_ROA_{it} + \beta_2 CASH\_FLOW_{it} + \beta_3 LAG\_SIZEit + \varepsilon_{it}$$

$$INT\_COV = \alpha_t + \gamma_i + \beta_1 PT\_ROA_{it} + \beta_2 CASH\_FLOW_{it} + \beta_3 LAG\_SIZEit + \varepsilon_{it}$$

$$\%LTDEBT = \alpha_t + \gamma_i + \beta_1 PT\_ROA_{it} + \beta_2 CASH\_FLOW_{it} + \beta_3 LAG\_SIZEit + \varepsilon_{it}$$

$$STOCK\_ISSUE = \alpha_t + \gamma_i + \beta_1 PT\_ROA_{it} + \beta_2 CASH\_FLOW_{it} + \beta_3 LAG\_SIZEit + \varepsilon_{it}$$

$$DEBT\_ISSUE = \alpha_t + \gamma_i + \beta_1 PT\_ROA_{it} + \beta_2 CASH\_FLOW_{it} + \beta_3 LAG\_SIZEit + \varepsilon_{it}$$

$$CASH = \alpha_t + \gamma_i + \beta_1 PT\_ROA_{it} + \beta_2 CASH\_FLOW_{it} + \beta_3 LAG\_SIZEit + \varepsilon_{it}$$

$$DIV\_YLD = \alpha_t + \gamma_i + \beta_1 PT\_ROA_{it} + \beta_2 CASH\_FLOW_{it} + \beta_3 LAG\_SIZEit + \varepsilon_{it}$$

**TABLE 1**
**Sample Selection Procedures**

| | Firm-Years | Firms |
|---|---|---|
| All observations available on *Compustat* from 1994-2007 | 146,456 | 20,019 |
| Less: | | |
| Subsidiary of another company | 3,315 | 393 |
| Foreign incorporation | 28,820 | 4,165 |
| Book value of equity is not positive | 14,691 | 824 |
| Utilities and financial services firms | 24,849 | 3,329 |
| Subtotal | 74,781 | 11,308 |
| Less: | | |
| Data not available to estimate *DFIN*[a] | 20,541 | 2,436 |
| Data not available to estimate *DTAX*[b] | 4,296 | 373 |
| **Total observations available prior to sample partitioning** | **49,944** | **8,499** |
| Observations from the Pre-SOX time period (1994-2000) | 28,143 | 6,874 |
| Less: | | |
| Firm that have less than five years of data | 8,932 | 3,823 |
| Firms that are cumulatively unprofitable | 4,439 | 737 |
| **Pre-SOX observations: Firms with positive cumulative pre-tax income and five or more years of data 1994-2000** | **14,772** | **2,314** |
| Observations from the Post-SOX time period (2003-2007) | 15,121 | 4,433 |
| Less: | | |
| Firm that have less than five years of data | 6,096 | 2,628 |
| Firms that are cumulatively unprofitable | 1,925 | 385 |
| **Post-SOX observations: Firms with positive cumulative pre-tax income and five or more years of data 2003-2007** | **7,100** | **1,420** |
| **Observations from transition years (2001 and 2002)** | **6,680** | **3,772** |

**TABLE 2**
**Descriptive Statistics for the Pre-SOX Sample**

**Panel A: Descriptive Statistics for Firm-Year Observations**

| Variable | N | Mean | Std Dev | 25th | 50th | 75th |
|---|---|---|---|---|---|---|
| **General Firm Characteristics:** | | | | | | |
| *PTROA* | 14,772 | 0.124 | 0.138 | 0.048 | 0.109 | 0.185 |
| *CASH_FLOW* | 14,772 | 0.134 | 0.108 | 0.076 | 0.123 | 0.178 |
| *ΔPTCFO* | 14,669 | 0.024 | 0.121 | -0.031 | 0.019 | 0.074 |
| *CASH_ETR* | 14,772 | 0.271 | 0.208 | 0.110 | 0.273 | 0.378 |
| *ASSETS* | 14,772 | 1,936 | 11,001 | 59 | 205 | 805 |
| *SIZE* | 14,772 | 5.428 | 1.939 | 4.070 | 5.325 | 6.691 |
| *NOL_D* | 14,772 | 0.199 | 0.399 | 0.000 | 0.000 | 0.000 |
| *FOR_D* | 14,772 | 0.348 | 0.476 | 0.000 | 0.000 | 1.000 |
| *AF_D* | 14,772 | 0.747 | 0.435 | 0.000 | 1.000 | 1.000 |
| *STOCK_RET* | 13,243 | 0.159 | 0.713 | -0.218 | 0.027 | 0.329 |
| *TOBINSQ* | 14,399 | 1.969 | 1.724 | 1.088 | 1.465 | 2.193 |
| **Unadjusted Corporate Policy Variables:** | | | | | | |
| *DTAX* | 14,772 | 0.012 | 0.237 | -0.020 | 0.001 | 0.027 |
| *DFIN* | 14,772 | -0.001 | 0.167 | -0.058 | -0.006 | 0.046 |
| *CAPX* | 14,552 | 0.403 | 0.467 | 0.160 | 0.263 | 0.461 |
| *NUM_ACQ* | 14,772 | 0.690 | 1.685 | 0.000 | 0.000 | 1.000 |
| *R&D* | 14,762 | 0.031 | 0.062 | 0.000 | 0.000 | 0.034 |
| *TOTLEV* | 14,772 | 0.282 | 0.236 | 0.043 | 0.265 | 0.458 |
| *%LTDEBT* | 12,697 | 0.723 | 0.305 | 0.585 | 0.847 | 0.963 |
| *INT_COV* | 12,877 | 60.779 | 205.591 | 4.553 | 9.318 | 23.694 |
| *STOCK_ISSUE* | 14,748 | 0.016 | 0.107 | -0.009 | 0.000 | 0.008 |
| *DEBT_ISSUE* | 14,746 | 0.014 | 0.086 | -0.015 | 0.000 | 0.031 |
| *CASH* | 14,771 | 0.180 | 0.311 | 0.018 | 0.065 | 0.221 |
| *DIV_YLD* | 14,715 | 0.064 | 0.130 | 0.000 | 0.000 | 0.092 |

**Panel B: Descriptive Statistics for Corporate Policy Firm Fixed Effects (*FFE*) Variables**

| Variable | N | Mean | Std Dev | 25th | 50th | 75th |
|---|---|---|---|---|---|---|
| *DTAX_FFE* | 2,314 | 0.071 | 0.101 | 0.035 | 0.065 | 0.096 |
| *DFIN_FFE* | 2,285 | 0.061 | 0.091 | 0.020 | 0.058 | 0.094 |
| *CAPX_FFE* | 2,269 | 0.112 | 0.300 | -0.073 | 0.103 | 0.284 |
| *NUM_ACQ_FFE* | 2,313 | -2.054 | 1.114 | -2.591 | -2.325 | -1.902 |
| *R&D_FFE* | 2,313 | 0.035 | 0.058 | 0.003 | 0.011 | 0.041 |
| *TOTLEV_FFE* | 2,313 | 0.091 | 0.185 | -0.053 | 0.065 | 0.213 |
| *%LTDEBT_FFE* | 2,197 | 0.575 | 0.258 | 0.430 | 0.628 | 0.769 |
| *INT_COV_FFE* | 2,186 | -169.468 | 186.268 | -245.023 | -225.982 | -190.773 |
| *STOCK_ISSUE_FFE* | 2,312 | -0.399 | 0.147 | -0.493 | -0.398 | -0.304 |
| *DEBT_ISSUE_FFE* | 2,313 | -0.121 | 0.049 | -0.155 | -0.124 | -0.088 |
| *CASH_FFE* | 2,313 | -0.670 | 0.324 | -0.898 | -0.689 | -0.461 |
| *DIV_YLD_FFE* | 2,309 | 0.033 | 0.110 | -0.038 | -0.008 | 0.083 |

See Appendix A for complete variable definitions.

**TABLE 3**
**Mean Values of Firm Characteristics for Quintiles of Pre-SOX Sample Firms Ranked by *DFIN* and *DTAX* Firm Fixed Effects (*FFE*)**

**Panel A: Firms Ranked by *DFIN_FFE* Quintiles**

| | Q1 (Least Aggressive) | Q2 | Q3 | Q4 | Q5 (Most Aggressive) |
|---|---|---|---|---|---|
| N (Sample size) | 457 | 457 | 457 | 457 | 457 |
| *DTAX* | 0.028 | 0.004 | 0.009 | 0.003 | 0.020 |
| *CASH_ETR* | 0.265 | 0.293 | 0.280 | 0.272 | 0.238 |
| *DFIN* | -0.086 | -0.030 | -0.006 | 0.018 | 0.099 |
| **Basic Firm Characteristic Variables:** | | | | | |
| *ASSETS* | 734 | 1,323 | 1,024 | 3,205 | 2,773 |
| *FIRM_AGE* | 11 | 15 | 17 | 19 | 16 |
| *FOR_D* | 0.302 | 0.331 | 0.366 | 0.412 | 0.311 |
| *PTROA* | 0.141 | 0.120 | 0.120 | 0.117 | 0.129 |
| *STD_PTROA* | 0.122 | 0.083 | 0.076 | 0.068 | 0.105 |
| Δ*PTCFO* | 0.036 | 0.025 | 0.021 | 0.019 | 0.022 |
| *NOL_D* | 0.201 | 0.191 | 0.181 | 0.213 | 0.219 |
| **Growth and Market Pressure Variables:** | | | | | |
| *STOCK_RETURN* | 0.197 | 0.133 | 0.145 | 0.114 | 0.228 |
| *STD_STOCK_RET* | 0.638 | 0.511 | 0.539 | 0.463 | 0.664 |
| *MTB* | 3.473 | 2.583 | 2.980 | 3.144 | 3.403 |
| Δ*SALES* | 0.240 | 0.186 | 0.165 | 0.164 | 0.255 |
| *AF_D* | 0.723 | 0.763 | 0.790 | 0.807 | 0.691 |
| *RESTATE* | 0.094 | 0.090 | 0.136 | 0.133 | 0.147 |
| *PCT_MBE* | 0.637 | 0.611 | 0.616 | 0.618 | 0.618 |
| *PCT_MBE_Q* | 0.664 | 0.633 | 0.646 | 0.645 | 0.639 |
| **Compensation Variables:** | | | | | |
| *TOP5_VARPAY* | 0.573 | 0.529 | 0.508 | 0.548 | 0.564 |
| *CEO_VARPAY* | 0.606 | 0.570 | 0.537 | 0.583 | 0.608 |
| *NUM_CEOS* | 1.462 | 1.540 | 1.557 | 1.595 | 1.514 |
| *CEO_TENURE* | 9.467 | 10.013 | 9.432 | 9.191 | 9.885 |

**Panel B: Firms Ranked by *DTAX_FFE* Quintiles**

| | Q1 (Least Aggressive) | Q2 | Q3 | Q4 | Q5 (Most Aggressive) |
|---|---|---|---|---|---|
| N (Sample size) | 462 | 463 | 463 | 463 | 463 |
| *DTAX* | -0.074 | -0.005 | 0.005 | 0.012 | 0.127 |
| *CASH_ETR* | 0.274 | 0.293 | 0.281 | 0.267 | 0.234 |
| *DFIN* | 0.002 | -0.001 | -0.007 | -0.008 | 0.009 |
| **Basic Firm Characteristic Variables:** | | | | | |
| *ASSETS* | 978 | 347 | 596 | 2,426 | 4,865 |
| *FIRM_AGE* | 11 | 14 | 15 | 20 | 18 |
| *FOR_D* | 0.331 | 0.369 | 0.311 | 0.376 | 0.326 |
| *PTROA* | 0.169 | 0.139 | 0.108 | 0.097 | 0.110 |
| *STD_PTROA* | 0.126 | 0.084 | 0.074 | 0.067 | 0.100 |
| Δ*PTCFO* | 0.039 | 0.023 | 0.019 | 0.016 | 0.025 |
| *NOL_D* | 0.229 | 0.179 | 0.167 | 0.193 | 0.238 |
| **Growth and Market Pressure Variables:** | | | | | |
| *STOCK_RETURN* | 0.224 | 0.171 | 0.117 | 0.119 | 0.187 |
| *STD_STOCK_RET* | 0.668 | 0.561 | 0.496 | 0.495 | 0.593 |
| *MTB* | 3.643 | 2.697 | 2.392 | 3.301 | 3.553 |
| Δ*SALES* | 0.246 | 0.183 | 0.171 | 0.184 | 0.220 |
| *AF_D* | 0.667 | 0.710 | 0.757 | 0.828 | 0.766 |
| *RESTATE* | 0.136 | 0.078 | 0.102 | 0.138 | 0.140 |
| *PCT_MBE* | 0.630 | 0.594 | 0.606 | 0.626 | 0.646 |
| *PCT_MBE_Q* | 0.665 | 0.631 | 0.620 | 0.646 | 0.667 |
| **Compensation Variables:** | | | | | |
| *TOP5_VARPAY* | 0.567 | 0.504 | 0.514 | 0.538 | 0.585 |
| *CEO_VARPAY* | 0.585 | 0.540 | 0.551 | 0.577 | 0.629 |
| *NUM_CEOS* | 1.453 | 1.443 | 1.512 | 1.624 | 1.580 |
| *CEO_TENURE* | 10.692 | 10.261 | 9.590 | 9.274 | 8.680 |

See Appendix A for complete variable definitions.

**TABLE 4**
**Mean Values of Firm Characteristics for Pre-SOX Sample Firms Partitioned into Three Groups (*LO_BOTH*, *AVERAGE*, and *HI_BOTH*), with Respect to their Financial (*DFIN_FFE*) and Tax (*DTAX_FFE*) Firm Fixed Effects**

| Variable | *LO_BOTH* | | *AVERAGE* | | *HI_BOTH* |
|---|---|---|---|---|---|
| N | 524 | | 1673 | | 528 |
| *DTAX* | -0.040 | *** | 0.014 | ### | 0.061 |
| *CASH_ETR* | 0.287 | *** | 0.274 | ### | 0.238 |
| *DFIN* | -0.057 | *** | 0.000 | ### | 0.054 |
| **Basic Firm Characteristic Variables:** | | | | | |
| *ASSETS* | 506 | *** | 1,137 | ### | 5,467 |
| *FIRM_AGE* | 12.219 | *** | 14.432 | ### | 23.858 |
| *FOR_D* | 0.348 | | 0.331 | ## | 0.387 |
| *PTROA* | 0.155 | *** | 0.124 | ### | 0.102 |
| *STD_PTROA* | 0.113 | *** | 0.087 | ## | 0.080 |
| Δ*PTCFO* | 0.035 | *** | 0.024 | ### | 0.016 |
| *NOL_D* | 0.199 | | 0.191 | ## | 0.237 |
| **Growth and Market Pressure Variables:** | | | | | |
| *STOCK_RETURN* | 0.174 | | 0.166 | | 0.143 |
| *STD_STOCK_RET* | 0.574 | * | 0.574 | ## | 0.512 |
| *MTB* | 3.100 | * | 2.974 | ## | 3.630 |
| Δ*SALES* | 0.210 | | 0.203 | | 0.191 |
| *AF_D* | 0.715 | *** | 0.750 | ### | 0.812 |
| *RESTATE* | 0.077 | *** | 0.122 | # | 0.156 |
| *PCT_MBE* | 0.628 | | 0.614 | | 0.634 |
| *PCT_MBE_Q* | 0.651 | | 0.642 | | 0.652 |
| **Compensation Variables:** | | | | | |
| *TOP5_VARPAY* | 0.550 | | 0.532 | ### | 0.570 |
| *CEO_VARPAY* | 0.588 | | 0.564 | ### | 0.612 |
| *NUM_CEOS* | 1.490 | ** | 1.502 | ### | 1.652 |
| *CEO_TENURE* | 10.151 | ** | 9.827 | ## | 8.658 |

See Appendix A for complete variable definitions.
***, **, * in the *LO_BOTH* column indicates a significant difference between *LO_BOTH* and *HI_BOTH* firms at the less than 0.01, 0.05, 0.10 level or better, respectively, based on two-sided t-tests.
###, ##, # in the *AVERAGE* column indicates a significant difference between *AVERAGE* and *HI_BOTH* firms at the less than 0.01, 0.05, 0.10 level or better, respectively, based on two-sided t-tests.

**TABLE 5**
**Spearman Correlations between the *HI_BOTH* Indicator Variable and Other Corporate Policy Firm Fixed Effects, where the Sample Only Includes *AVERAGE* and *HI_BOTH* Firms in the Pre-SOX Time Period (1994-2000)**

| | *CAPX_ FFE* | *NUM_ ACQ_FFE* | *R&D_FFE* | *TOTLEV_ FFE* | *INT_COV FFE* | *%LTDEBT FFE* | *STOCK_ ISSUE_ FFE* | *DEBT_ ISSUE_ FFE* | *CASH_FF E* | *DIV_YLD_ FFE* |
|---|---|---|---|---|---|---|---|---|---|---|
| *NUM_ACQ_FFE* | **0.104** | | | | | | | | | |
| *R&D_FFE* | **0.083** | **0.038** | | | | | | | | |
| *TOTLEV_FFE* | **-0.118** | **0.126** | **-0.376** | | | | | | | |
| *INT_COV_FFE* | **-0.169** | **-0.160** | -0.012 | **-0.347** | | | | | | |
| *%LTDEBT_FFE* | **-0.216** | -0.029 | **-0.172** | **0.292** | 0.015 | | | | | |
| *STOCK_ISSUE_FFE* | **0.691** | **0.123** | **0.042** | **-0.051** | **-0.296** | **-0.201** | | | | |
| *DEBT_ISSUE_FFE* | **0.458** | **0.213** | 0.013 | **0.231** | **-0.359** | 0.006 | **0.627** | | | |
| *CASH_FFE* | **0.652** | 0.032 | **0.223** | **-0.274** | -0.139 | **-0.259** | **0.627** | **0.502** | | |
| *DIV_YLD_FFE* | **0.270** | **0.046** | **0.082** | **-0.141** | **-0.212** | **-0.156** | **0.042** | **0.389** | **0.493** | |
| *HI_BOTH* | **0.196** | **0.042** | 0.002 | **0.085** | **-0.122** | **-0.057** | **0.280** | **0.198** | **0.226** | **0.144** |

See Appendix A for complete variables definitions.
Correlations in bold are significant at the 0.10 level or better, based on two-sided t-tests.

**TABLE 6**
**Results for OLS Regressions of Corporate Policy Firm Fixed Effect Variables on Indicator Variables for whether the Firm Is Classified as a *HI_TAX*, *HI_FIN*, or a *HI_BOTH* Observation, where the Sample Only Includes *AVERAGE* and *HI_BOTH* Firms in the Pre-SOX Time Period (1994-2000)**

| Dependent Variable → | (1) *CAPX_FFE* | (2) *NUM_ACQ_FFE* | (3) *R&D_FFE* | (4) *TOTLEV_FFE* | (5) *INT_COV_FFE* | (6) *%LTDEBT_FFE* | (7) *STOCK_ISSUE_FFE* | (8) *DEBT_ISSUE_FFE* | (9) *CASH_FFE* | (10) *DIV_YLD_FFE* |
|---|---|---|---|---|---|---|---|---|---|---|
| Intercept | 0.05*** | -2.11*** | 0.02*** | 0.10*** | -187.49*** | 0.62*** | -0.43*** | -0.13*** | -0.74*** | 0.02*** |
| (T-Stat) | (4.04) | (-39.04) | (9.49) | (11.20) | (-23.38) | (51.79) | (-65.54) | (-55.31) | (-51.72) | (4.75) |
| *HI_TAX* | 0.13*** | 0.26*** | 0.01*** | 0.01 | 13.30 | -0.04** | 0.06*** | 0.01*** | 0.16*** | 0.02** |
| (T-Stat) | (6.75) | (3.46) | (3.15) | (1.02) | (1.19) | (-2.25) | (7.16) | (4.04) | (7.76) | (2.41) |
| *HI_FIN* | 0.01 | -0.08 | 0.01*** | -0.02* | 42.02*** | -0.05*** | -0.01 | -0.01* | -0.01 | -0.01 |
| (T-Stat) | (0.75) | (-1.02) | (3.40) | (-1.86) | (3.75) | (-3.18) | (-1.05) | (-1.91) | (-0.27) | (-0.72) |
| *HI_BOTH* | 0.02 | 0.02 | -0.02*** | 0.04** | -76.04*** | 0.02 | 0.06*** | 0.02*** | 0.07** | 0.03*** |
| (T-Stat) | (0.60) | (0.21) | (-3.63) | (2.11) | (-4.75) | (1.05) | (4.85) | (3.89) | (2.44) | (2.84) |
| N | 1,852 | 1,866 | 1,866 | 1,866 | 1,776 | 1,787 | 1,866 | 1,866 | 1,866 | 1,863 |
| Adj $R^2$ | 0.051 | 0.013 | 0.007 | 0.008 | 0.016 | 0.008 | 0.115 | 0.052 | 0.088 | 0.023 |

See Appendix A for complete variable definitions.
***, **, * indicates significance at the 0.01, 0.05, 0.10 level or better, respectively, based on two-sided t-tests.

**TABLE 7**
**Migration of *LO_BOTH*, *AVERAGE*, and *HI_BOTH* Firms from the Pre-SOX Time Period (1994-2000) to the Post-SOX Time Period (2003-2007)**

| **Classification in the Pre-SOX Time Period ↓** | **Classification in the Post-SOX Time Period** | | | **Pre-SOX Sub-Total** |
|---|---|---|---|---|
| | *LO_BOTH* | *AVERAGE* | *HI_BOTH* | |
| *LO_BOTH* | 27 | 112 | 22 | 161 |
| *AVERAGE* | 70 | 420 | 56 | 546 |
| *HI_BOTH* | 12 | 136 | 19 | 167 |
| **Post-SOX Sub-Total** | 109 | 668 | 97 | 874 |

See Appendix A for complete variable definitions.

**TABLE 8**
**Mean and Median Values for Changes in Corporate Policy Firm Fixed Effect Variables from the Pre-SOX Time Period to the Post-SOX Time Period for *LO_BOTH*, *AVERAGE*, and *HI_BOTH* Firms**

| | **Classification in the Pre-SOX Time Period:** | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | *LO_BOTH* | | | | *AVERAGE* | | *HI_BOTH* | |
| Fixed Effect Variables ↓ | Mean | | Median | | Mean | Median | Mean | Median |
| *DFIN_FFE* | 0.08 | ** | 0.07 | *** | 0.05 | 0.05 ### | 0.04 | 0.02 |
| *DTAX_FFE* | -0.09 | *** | -0.11 | *** | -0.18 ### | -0.17 ### | -0.26 | -0.24 |
| *CAPX_FFE* | 0.10 | *** | 0.14 | *** | 0.01 ### | 0.01 ### | -0.12 | -0.17 |
| *NUM_ACQ_FFE* | 2.39 | | 2.42 | | 2.35 | 2.44 | 2.55 | 2.57 |
| *R&D_FFE* | -0.03 | * | -0.03 | *** | -0.03 ### | -0.03 ### | -0.04 | -0.04 |
| *TOTLEV_FFE* | 0.13 | *** | 0.14 | *** | 0.18 ### | 0.17 ### | 0.22 | 0.24 |
| *INT_COV_FFE* | 104.34 | *** | 94.77 | *** | 57.10 ### | 41.74 ### | -6.01 | -25.38 |
| *%LTDEBT_FFE* | -0.38 | | -0.34 | | -0.36 | -0.33 | -0.32 | -0.30 |
| *STOCK_ISSUE_FFE* | 0.43 | *** | 0.44 | *** | 0.40 ### | 0.40 ### | 0.35 | 0.35 |
| *DEBT_ISSUE_FFE* | 0.46 | *** | 0.47 | *** | 0.51 ### | 0.52 ### | 0.56 | 0.57 |
| *CASH_FFE* | 1.22 | *** | 1.23 | *** | 1.17 ### | 1.17 ### | 1.12 | 1.12 |
| *DIV_YLD_FFE* | 0.06 | ** | 0.05 | *** | 0.07 ## | 0.06 ### | 0.09 | 0.08 |

See Appendix A for complete variable definitions.
***, **, * in the *LO_BOTH* column indicates a significant difference between the mean or median values of *LO_BOTH* and *HI_BOTH* firms at the 0.01, 0.05, 0.10 level or better, respectively, based on two-sided t-tests and Wilcoxon rank sum test.
###, ##, # in the *AVERAGE* column indicates a significant difference between the mean or median values of *AVERAGE* and *HI_BOTH* firms at the 0.01, 0.05, 0.10 level or better, respectively, based on two-sided t-tests and Wilcoxon rank sum test.

**TABLE 9**
**Results for OLS Regressions of Tobin's Q on *HI_BOTH* and *PRE_SOX* Indicator Variables, and Other Corporate Policy and Control Variables, where the Sample Only Includes *AVERAGE* and *HI_BOTH* Firms in the Pre- and Post-SOX Time Periods[a]**

| | Non-Matched Samples | | | Matched Samples[b] | | |
|---|---|---|---|---|---|---|
| | Coefficient | T-Stat | | Coefficient | T-Stat | |
| Intercept | 0.857 | 4.12 | *** | 0.298 | 1.02 | |
| *PRE_SOX* | 2.578 | 6.20 | *** | 3.238 | 4.77 | *** |
| *HI_TAX* | 0.120 | 1.87 | ** | 0.043 | 0.49 | |
| *HI_TAX×PRESOX* | -0.003 | -0.04 | | 0.112 | 0.92 | |
| *HI_FIN* | 0.014 | 0.22 | | -0.043 | -0.59 | |
| *HI_FIN×PRESOX* | 0.049 | 0.63 | | 0.076 | 0.71 | |
| *HI_BOTH* | -0.155 | -1.67 | * | 0.014 | 0.11 | |
| *HIBOTH×PRESOX* | 0.052 | 0.45 | | -0.061 | -0.36 | |
| *CAPX_FFE* | -0.150 | -1.23 | | -0.378 | -2.06 | ** |
| *CAPX×PRESOX* | -0.972 | -6.56 | *** | -1.191 | -5.07 | *** |
| *NUM_ACQ_FFE* | 0.038 | 1.85 | ** | 0.006 | 0.27 | |
| *NUMACQ×PRESOX* | -0.020 | -0.80 | | 0.012 | 0.41 | |
| *R&D_FFE* | 3.425 | 6.65 | *** | 2.929 | 4.13 | *** |
| *R&D×PRESOX* | 2.645 | 4.12 | *** | 2.668 | 2.79 | *** |
| *TOTLEV_FFE* | 0.402 | 2.99 | *** | 0.356 | 1.91 | * |
| *TOTLEV×PRESOX* | -0.214 | -1.21 | | 0.165 | 0.62 | |
| *INT_COV_FFE* | 0.001 | 4.08 | *** | 0.000 | 2.26 | ** |
| *INTCOV×PRESOX* | 0.000 | -0.34 | | 0.000 | -0.18 | |
| *%LTDEBT_FFE* | -0.188 | -2.35 | ** | -0.138 | -1.21 | |
| *%LTDEBT×PRESOX* | -0.177 | -1.62 | | -0.387 | -2.28 | ** |
| *STOCK_ISSUE_FFE* | -0.966 | -1.51 | | -2.489 | -2.64 | *** |
| *STOCKISSUE×PRESOX* | 3.176 | 4.21 | *** | 4.470 | 3.83 | *** |
| *DEBT_ISSUE_FFE* | -2.420 | -5.59 | *** | -2.364 | -3.79 | *** |
| *DEBTISSUE×PRESOX* | 2.245 | 3.41 | *** | 0.592 | 0.55 | |
| *CASH_FFE* | 1.106 | 6.33 | *** | 0.744 | 2.87 | *** |
| *CASH×PRESOX* | 0.058 | 0.27 | | 1.041 | 3.09 | *** |
| *DIV_YLD_FFE* | 0.329 | 1.48 | | 0.253 | 0.92 | |
| *DIVYLD×PRESOX* | -0.480 | -1.68 | * | -0.186 | -0.44 | |
| N | 2,779 | | | 1,142 | | |
| Adjusted $R^2$ | 0.6019 | | | 0.6444 | | |

See Appendix A for complete variable definitions.
***, **, * indicates significance at the 0.01, 0.05, 0.10 level or better, respectively, based on two-sided t-tests.
[a] Results for other control variables not tabulated, including coefficients for *SIZE_AVG*, *PTROA_AVG*, *ΔSALES_AVG*, and *PTCFO_AVG*, and each variable interacted with *PRESOX*.
[b] The "Matched-Samples" column requires firms to be classified as either *HI_BOTH* or *AVERAGE* in both the pre- *and* post-SOX time periods (and thus must be present in the regression sample for both time periods), while the "Non-Matched Samples" column includes all firms classified as *HI_BOTH* or *AVERAGE* in the pre- *or* post-SOX time period (and thus are not required to be present in the regression sample for both time periods).