Internal Control Weaknesses and Acquisition Performance

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ABSTRACT

The Sarbanes-Oxley Act of 2002 (“SOX”) requires most publically traded firms to periodically disclose information about their internal control environments. I study a previously unexplored context where SOX internal control disclosures should be relevant; mergers and acquisitions transactions. Poor internal control quality at the acquiring firm is likely to impact acquisition profitability through a pre-merger “decision effect” and/or a post-merger “integration effect.” Weak internal controls at an acquiring firm suggest that management’s decision to acquire a particular firm is based on less timely/less accurate internal reports and projections – information crucial to selection of profitable acquisitions. Once an acquisition is made, weak internal controls may then impair the acquirer’s ability to quickly and effectively integrate the target to capture anticipated synergies.

I expect that these internal control problems will affect acquisition performance, and accordingly I predict that lower internal control quality at the acquiring firm will lead to poorer acquisition performance in both operating performance and stock returns. I find that lower internal control quality predicts significantly lower post-acquisition operating performance. Investors seem to partially understand and anticipate the impact of internal control quality on acquisition performance, as I find a significant relationship between internal control quality and announcement period abnormal returns. However, investors apparently do not fully anticipate the implications of internal control information; I find that SOX material weakness information available pre-announcement predicts significant negative post-acquisition abnormal returns. My findings contribute to both the mergers and acquisitions literature and the SOX cost-benefit debate.

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INTERNAL CONTROL WEAKNESSES AND ACQUISITION PERFORMANCE

I. Introduction

Just after signing the Sarbanes-Oxley Act of 2002 (“the Act” or “SOX”) into law, President Bush described the Act as “the most far-reaching reforms of American business practices since the time of Franklin Delano Roosevelt” (Bumiller 2002, 1). Researchers have been studying the effects of SOX for nearly a decade, and overall find that it provides mixed benefits to investors.¹ However, the impact of SOX within the context of mergers and acquisitions (“M&A”) has received very little academic attention. Examining the impact of SOX in an M&A context is important because acquisitions represent significant investments by acquirers with billions of dollars spent on acquisitions in the U.S. each year; \$996.5 billion was spent in the U.S. on M&A transactions in 2011 (Ovide 2011). And, while M&A activity had slowed amidst the recent financial crisis, the combined dollar value of U.S. M&A deals in 2011 increased 12 percent over 2010 (Ovide 2011). The objective of this dissertation is to understand the role that internal control quality plays in M&A transactions. Specifically, I examine how SOX internal control weaknesses at the acquiring firm may affect the acquirer’s fundamental performance and stock performance.

I investigate the potential influence that SOX internal control weaknesses have on M&A for at least two reasons. First, my research contributes to the ongoing debate

¹ For example, Jain et al. (2008) find that market liquidity improved from pre-SOX to post-SOX period. Cohen et al. (2008) find that accruals-based earnings management declined significantly post-SOX, but real earnings management increased significantly post-SOX. Beneish et al. (2008) find that only SOX Section 302 material weaknesses (but not the more costly, audited Section 404 disclosures) are informative to the market.

regarding the costs and benefits of SOX. Much of the debate focuses on Section 404 of SOX, which requires annual disclosure of material internal control weaknesses and an independent audit opinion on the effectiveness of the internal control environment. The results of several archival studies call into question the benefits of making costly Section 404 material weakness disclosures to investors (e.g. Doyle et al. 2007a; Ogneva et al. 2007; Beneish et al. 2008). However, disclosures about the quality of a firm's internal control environment may be especially informative within the M&A context, since poor quality internal control systems may impede a quick and effective integration of the target firm. Finding evidence of the relationship I predict in this study between internal control quality and M&A performance can be interpreted as an unanticipated benefit of SOX internal control disclosures, since these disclosures may be helpful to investors as they try to predict the success of acquisitions. My findings are valuable to practitioners, academic researchers, and regulators seeking to understand and evaluate the benefits and costs to making SOX internal control quality disclosures.

Second, M&A transactions have typically been characterized as value-destructive for the acquiring firm's shareholders, although some acquirers are able to achieve value-enhancement for their shareholders (see Moeller et al. 2005; also see Halebian et al. 2009 for a literature review). Extant research has identified several variables that appear to improve acquisition performance for acquiring firm shareholders. I posit that the internal control environment of acquiring firms is an important firm-specific characteristic that impacts the value of an acquisition to

acquirer shareholders. Thus, I contribute to the subset of the acquisitions literature that “importantly reveals conditions and situations under which acquisitions do benefit acquirers” (Haleblian et al. 2009, 470). My results on the moderating impact of acquiring firms’ internal control environments should be informative to managers, investors, and academic researchers.

I study acquisitions for which a U.S. public firm purchased a U.S. target from August 29, 2002 to December 31, 2009.² I predict that the acquisition value to acquirer shareholders will be negatively related to material weaknesses reported by the acquirer. The primary underlying support for my hypothesis is that firms with poorer internal controls may make poorer decisions and they may experience more difficulty integrating the target quickly to achieve synergies. Moody’s Investors Services warns the presence of certain “company-level” material weaknesses reported under SOX “call into question not only management’s ability to prepare accurate financial reports, but also its ability to control the business” (Doss and Jonas 2004, 1). Feng et al. (2009) also suggest that internal control quality impacts the quality of internal reports which in turn impacts the quality of a variety of management decisions, including merger and acquisitions decisions. If Moody’s concerns and Feng et al.’s (2009) suggestions are valid, then acquiring firms with low quality internal control environments will make relatively poorer acquisition decisions and have more post-

² Section 302 of SOX was effective for all U.S. publically-traded firms as of August 29, 2002. Compliance with Section 404 was required beginning with fiscal years ending on or after November 15, 2004 and is only required for accelerated filers. I form a Section 302 and a Section 404 sample and test all my hypotheses on both samples, since prior research suggests that Section 302 weaknesses may be more influential than Section 404 (e.g., Beneish et al. 2008). The Section 404 sample is significantly more restricted both by years of available disclosures and by the number of firms required to comply.

merger difficulties. I examine the post-acquisition operating performance of acquirers and measure acquisition value to acquirer shareholders by examining abnormal returns over the announcement period, the interim period, and the post-acquisition period as suggested by Oler (2008) because the implications of internal control information may not be immediately and fully impounded into stock prices at the announcement date. I more fully develop the logic behind my predictions in the Hypotheses Development Section.

I find that poor internal control quality of the acquiring firm pre-acquisition is predictive of significantly lower post-acquisition operating performance. This finding holds regardless as to whether Section 302 or Section 404 material weaknesses are used to proxy for internal control quality. I find that investors appear to use Section 302 internal control disclosures to anticipate the poorer post-acquisition operating performance of material weakness acquirers as evidenced through their significantly negative response in the announcement period. My findings in the post-acquisition period suggest that investors' response to internal control information during the announcement period is incomplete. I find a significantly negative relationship between post-acquisition abnormal returns and pre-announcement Section 302 disclosures. My findings provide evidence of another benefit of SOX internal control disclosures, and they also contribute to the M&A literature by identifying a new firm-specific characteristic that moderates acquisition performance.

The investor response to the more costly Section 404 material weaknesses in both the announcement period and the post-acquisition period is also negative, but

overall only marginally significant. The lack of strong results when using Section 404 versus Section 302 is consistent with prior research finding Section 302 disclosures to be more informative (e.g., Beneish et al. 2008; Ogneva et al. 2007). It is also consistent with the notion that audited Section 404 material weaknesses may be less severe and less detrimental to a firm than unaudited Section 302 material weaknesses (identified by management) because auditors may apply a lower materiality threshold than management when assessing internal control quality (Doyle et al. 2007a; Beneish et al. 2008).

In the next section I provide a brief background on the SOX requirements for internal control reporting along with a summary of the SOX internal control literature. I develop my hypotheses in the following section. The Research Method Section follows with a discussion of my data collection and research methods. The next section presents the results. A Sensitivity Tests and Additional Analyses section follows and then I conclude.

II. Background on SOX Requirements and Literature Review

The Sarbanes-Oxley Act of 2002 was signed into law on July 30, 2002 “to protect investors by improving the accuracy and reliability of corporate disclosures made pursuant to the securities laws, and for other purposes” (U.S. House of Representatives 2002, 1). Academic researchers have studied the effectiveness of the Act in broadly achieving these goals. For example, Jain et al. (2008) find that market liquidity improved from pre-SOX to post-SOX and interpret these results as evidence that investors’ confidence increased after SOX and public information was perceived

as more reliable. Other researchers focus on the specific effects of two of the most controversial sections within the Act – Section 302 and Section 404.

Section 302 and Section 404 both require management (and auditors under Section 404) to communicate information to the public about the overall effectiveness of the company’s internal controls over financial reporting. Prior to SOX, this information was not required to be disclosed to the public. Internal control weaknesses reported under Section 302 and Section 404 suggest problems that could potentially lead to undetected misstatements in the firm’s financial statements. Appendix A provides examples of Section 302 and Section 404 material weakness disclosures taken from selected acquiring firms in my sample.

While both Section 302 and Section 404 disclosures provide information on internal control quality, there are important differences between these two sections that may impact their ability to inform investors. Section 302 disclosures represent management’s *unaudited* assessment of internal control quality, whereas Section 404 disclosures represent *audited* disclosures. The distinction between audited and unaudited is important because some have suggested that auditors may apply a lower materiality threshold when assessing internal control quality as compared to management; thus, audited disclosures under Section 404 may include material weaknesses that would not have been considered material by management in their unaudited Section 302 disclosures (Doyle et al. 2007a; Beneish et al. 2008).³ Another

³ Supporting this notion, a recent SEC study analyzing research on internal control issues found that “the majority of internal control deficiencies that were classified by the auditor as a significant deficiency or a material weakness were initially classified by the issuer as less severe” (“SEC Report” 2011).

significant difference between the sections is the difference in the size of companies that are required to comply. All U.S. public firms must comply with Section 302 whereas only the larger, accelerated filers must comply with Section 404. Some evidence suggests that internal control quality information may be more informative to market participants for smaller firms (i.e. those subject to Section 302, but not Section 404) because these smaller firms operate in less rich information environments that inherently present higher information uncertainty to investors (Beneish et al. 2008).

As Section 302 and Section 404 of SOX are costly for public companies to comply with, a debate arose on whether disclosures made in accordance with these sections are informative to investors and offer sufficient benefits to warrant these costs. Consistent with the suggested materiality differences and company size effect arguments discussed above, researchers generally find that internal control disclosures made in accordance with Section 302 are more informative than the audited Section 404 internal control disclosures. Beneish et al. (2008) find that companies disclosing material weaknesses under Section 302 experience statistically significant abnormal negative returns around the disclosure time, an abnormal increase in their implied cost of capital, and abnormal negative earnings forecast revisions. However, they do not find any of these results for the companies disclosing Section 404 material weaknesses. Likewise, Ogneva et al. (2007) are not able to find a statistically significant relationship between Section 404 internal control weaknesses and higher costs of equity. Hammersley et al. (2008) find that the severity of the internal control

problem disclosed under Section 302 is also informative, as they find larger negative abnormal returns for more severe weaknesses.

Other studies focus on the relationship between earnings quality and Section 302 and Section 404 internal control weaknesses. Doyle et al. (2007a) find a negative association between Section 302 material weaknesses and accruals quality, but a negative association between Section 404 material weaknesses and accruals quality only when the weaknesses are classified as company-wide. Ashbaugh-Skaife et al. (2008) examine changes in internal control quality reported under both Section 302 and 404, and find that improvements in accruals quality are associated with remediation of material weaknesses.

While SOX internal control assessments made under both Sections 302 and 404 are limited to controls that prevent or detect material misstatements in *external* financial reporting, there is some evidence to suggest that internal control problems reported under SOX may also indicate lower quality *internal* financial reports. Specifically, Feng et al. (2009) suggest that firms with SOX Section 404 material weaknesses may have lower quality internal financial reports used by management to make projections and operational decisions. Consistent with this proposed relationship, they find lower management forecast accuracy for firms with Section 404 material weaknesses.⁴ The authors suggest that the lower internal control quality in these firms leads to managers using “lower quality financial inputs to form this

⁴ Feng et al. (2009) focus primarily on Section 404 material weaknesses; however, they replicate their analyses using Section 302 material weaknesses. Though tables are not presented, the authors report in footnotes 9 and 21 that the results from their analyses using Section 302 material weaknesses are consistent with their Section 404 results.

guidance.” They also suggest that weak internal controls have the potential to impact important management decisions, including mergers and acquisitions.

III. Hypotheses Development

Poor internal control quality at the acquiring firm may impact acquisition profitability through two possible mechanisms: a pre-acquisition “decision effect” and a post-acquisition “integration effect.” The “decision effect” arises because of a reliance on poorer quality internal information to make an acquisition decision. When contemplating an acquisition, acquirer managers use internal financial reports, projections, and other internal operational reports to determine whether a particular acquisition should be undertaken. Some suggest and provide empirical evidence that internal control weaknesses disclosed under Section 404 of SOX negatively impact the quality of these internal reports used by management to make decisions. For example, Moody’s Investors Services questions the “quality of internal data that management uses to make decisions” for companies that report “company-wide” material weaknesses under Section 404 of SOX (Doss and Jonas 2004, 1). Feng et al. (2009) provide empirical evidence regarding the impact of SOX internal control problems on internal reports. They find a significantly negative relationship between management forecast accuracy and SOX Section 404 material weaknesses, and conclude that “internal control quality has an economically significant effect on internal management reports and thus decisions based on these figures” (Feng et al. 2009, 190). Thus, I expect that acquiring firms with internal control quality problems will have less reliable, less accurate, and/or less timely internal information needed to

make sound acquisition decisions.⁵ Therefore, all else equal, the lack of high quality internal reports should lead to poorer, more value-destructive acquisition decisions.

The “integration effect” of internal control problems on acquisition performance arises after the acquisition deal closes. Acquirer firms with poorer internal control quality may experience more problems carrying out their post-merger integration plans and achieving necessary synergies with the target firm after acquisition; these potential operational problems could impact the value of the acquisition for acquiring firm shareholders. Achieving quick integration and synergies is commonly considered as one of the most crucial factors in an acquisition’s profitability. A professional publication on M&A by Bruner (2004, 7) cautions that “no matter how good the deal design, implementing the merger integration is where the hypothesized deal benefits are won or lost.” Several companies also describe the importance of a quick integration process. For example, Dow Chemical’s Randy Croyle described the role of speed in its acquisition integration process as follows:

Speed is one of the key elements for us...the way we have speed is to have a really robust implementation plan...speed is a way of synergy capture...to get costs out of the system as quickly as we can (Saint-Onge and Chatzkel 2009, 211).

⁵ As an illustration of how SOX material weaknesses might impact the quality of *internal* reports used to make operational decisions, consider the examples of Section 302 and Section 404 material weaknesses provided in Appendix A. The disclosures describe problems in both preparation and review of financial information due to limited or strained finance/accounting personnel. It is likely that these limitations within the finance/accounting departments impact the ability of the company to produce accurate and timely reports used for internal purposes.

Tony Kuhel of BP has a similar view of the role of speed in an integration which he described during a discussion of BP's acquisition of Amoco:

The number one priority was speed. For BP, [our goal] was very simple: Get through integration as fast as possible (Saint-Onge and Chatzkel 2009, 217).

Ogneva et al. (2007, 1256) suggest that internal control weaknesses “may be symptomatic of poor management controls in general.” Likewise, in a special comment on SOX Section 404 reports, Moody's Investors Service warns that company-wide material weaknesses in internal control raise concerns over the management's “ability to control the business” (Doss and Jonas 2004, 1). While Moody's does not directly elaborate on how these internal control problems may harm management's abilities, it is clear that the ratings agency perceives a connection between weak internal controls and management's operational prowess. One possibility is that internal control problems at the acquiring firm impact the quality of acquisition performance because upper management is distracted by internal control issues.⁶ Coates (2007) contends that the disclosure of internal control weaknesses required by Section 404 creates strong incentives to remediate these problems, even if the cost of remediating exceeds the expected benefits. Engel et al. (2007, 121) also warn that CEO and CFO certifications of financial statements required by SOX “may divert the attention of these decision-makers from other aspects of the business.” If the certification process is made more difficult by material weaknesses in controls that

⁶ For example, in 2005 the Federal Reserve banned Citigroup from major M&A activity until it improved its internal controls. The Fed justified this ban by saying that it was “important that management's attention not be diverted from these efforts by the demands that mergers and acquisitions place on management resources” (Reuters 2005).

may result in undetected material misstatements, then CEOs and CFOs should be even more distracted from other business activities in the presence of poor internal control quality. Thus, relative to firms with better internal control quality, management at firms with internal control problems may not be able to focus as much energy and resources on post-acquisition integration/operational tasks due to internal control distractions.⁷ This leads to my first hypothesis:

H1: Controlling for other factors that impact post-acquisition return on net operating assets, there is a negative association between material weaknesses reported by the acquirer in accordance with Sections 302 and 404 of SOX and post-acquisition return on net operating assets.

Assuming that the market anticipates poorer post-acquisition operating performance for acquirers with SOX internal control problems (as predicted in H1) and quickly impounds this information into stock price, my second hypothesis follows:

H2: Controlling for other factors that impact acquirer announcement period returns, pre-announcement material weaknesses reported by an acquirer in accordance with Sections 302 and 404 of SOX are negatively associated with announcement period returns to acquirer shareholders.

⁷ The SOX material weaknesses described in Appendix A exemplify how poor internal control quality might negatively impact post-merger integration activities. The selected SOX disclosures indicate that the companies are struggling to meet their current financial reporting needs; integrating another company into the acquirer will put additional strain on already overly burdened finance/accounting personnel. Additionally, both acquirers described remediation plans in their SEC filings, thus management will likely be juggling post-merger integration and internal control remediation efforts.

Although H2 assumes that the market quickly impounds the potential negative effects of poor internal control quality into price, I examine multiple periods and measures of acquisition value because investors may not fully impound internal control information into stock price during various periods. Associations between internal control quality and acquirer value detected in different periods have different interpretations. Of course, a failure to detect a significant association in any of the three periods could mean that there is severe measurement error in my proxy for internal control quality or that internal control quality has no effect on acquisition value. I discuss the specific interpretations of finding (or failing to find) associations in each period after each hypothesis.

One explanation for a failure to fully impound information quickly into stock price is the limited attention hypothesis suggested by Hirshleifer and Teoh (2003). Their model suggests that if time and attention are costly to investors, then it is rational for investors to ignore the implications of public information that is less salient and more difficult to process. Oler (2008) finds evidence of limited investor attention to pre-announcement cash level in acquiring firms, in that cash level can be used to predict post-acquisition returns. Accordingly, I examine acquisition value creation or destruction for acquirers in three distinct periods: the announcement period, the interim period, and the post-acquisition period. Figure 1 depicts the three time periods I examine. Oler (2008, 281) recommends using this empirical analysis in situations where “information is revealed to the market at a specific date, but where the market may fail to fully impound all implications of that information until later.”

Finding support for H2 would mean that my measure of internal control quality is adequate, that poor internal control quality has the predicted negative effects on acquisition performance, and that shareholders understand the implications of SOX material weaknesses existing at the acquiring firm and impound this information quickly into price. However, as discussed above, it is possible that investors need more time than just the short window of time around the announcement date to realize the potential negative implications of poor acquirer internal control quality.

Acquirer shareholders are less likely to quickly and fully realize the impacts that poor internal controls at the acquirer have on acquisition performance for at least two reasons. First, while SOX internal control information is publically available through the acquirer's most recent 10-Q and 10-K filings, this information is very unlikely to be presented in the acquisition announcement. Second, even if shareholders invest the time to gather the acquirer's SOX internal control information, the implications on acquisition performance are relatively ambiguous. Investors may lack an understanding of how internal control problems may impact efficient post-acquisition integration. They also may not understand that poor internal control quality could mean that acquirers rely on potentially low-quality internal financial information and projections in making their acquisition decisions. Thus, investors may need to spend more time and attention to estimate the effect that poor internal controls at the acquirer has on acquisition value as compared to more easily processed information such as the acquirer's operating performance.

Investors may also get additional information between the announcement date and the deal closing (i.e. the interim period) that helps them interpret acquirer internal control quality's effects. For example, a longer interim period than expected at the announcement date or other public announcements occurring in the interim period about the deal might signal that the acquirer is having problems developing an implementable, speedy integration plan. This additional information may result in a market response to the acquisition over the interim period. The slower processing of data suggested by Hirshleifer and Teoh (2003) and the possibility of new information reaching the market results in my third hypothesis:

H3: Controlling for other factors that impact acquirer interim period returns, pre-announcement material weaknesses reported by an acquirer in accordance with Sections 302 and 404 of SOX are negatively associated with interim period returns to acquirer shareholders.

Finding support for H3 would mean that my measure of internal control quality is adequate, that poor internal control quality has the predicted negative effects on acquisition performance, and that shareholders become aware of the implications of SOX material weaknesses during the interim period. However, it is possible that market prices do not fully reflect the implications of acquirer internal control quality until a more prominent, easily processed signal emerges in the post-acquisition period. As discussed above, the internal control quality at the acquirer may lead to poorer acquisition decisions and more difficulties carrying out post-merger integration plans. If this suggested relationship holds, then it follows that post-acquisition operating

performance of the acquirer will be lower than expected (H1). This lower than expected operating performance in the post-acquisition period may also lead to lower acquirer post-acquisition abnormal returns. This leads to my final hypothesis:

H4: Controlling for other factors that impact post-acquisition returns to acquirer shareholders, there is a negative association between material weaknesses reported by the acquirer in accordance with Sections 302 and 404 of SOX and post-acquisition returns to acquirer shareholders.

Finding support for H4 would mean that my measure of internal control quality is adequate, poor internal control quality has the predicted negative effects on acquisition performance (as proxied by return on net operating assets, “RNOA”), and the market failed to quickly and fully impound the effect of poor internal control quality when that information was available at the announcement date. While shareholders probably never fully recognize the implications of poor acquirer internal control quality, they respond to the lower than expected RNOA.

IV. Research Method

In this section I describe my sample selection process and research design. I discuss methods used to calculate the two key dependent variables (RNOA and abnormal stock market returns), the primary variable of interest (acquirer internal control quality), and control variables. The section also reports descriptive statistics and correlations for my samples.

Sample Selection

I draw my initial sample of acquisitions from the Securities Data Corporation's ("SDC") U.S. Mergers and Acquisitions Database. My sample selection procedures are also described in Table 1. I queried SDC's database to include mergers and acquisitions of U.S. targets announced between 1/1/2002 and 12/31/2010. I then restricted my sample to deals announced between 8/29/2002 (the effective date of SOX Section 302) and 12/31/2009. Some prior research has questioned the accuracy and/or completeness of M&A data provided by SDC, however, these concerns are primarily problematic for much older data than the sample years I collect (Barnes et al. 2011). My SDC query excluded spinoffs, recapitalizations, self-tenders, exchange offers, repurchases, minority stake purchases, acquisitions of remaining interest, and privatizations. I removed observations with missing acquirer or target cusip information, duplicate observations (i.e., where the same acquirer cusip, target cusip, and announcement date are listed multiple times), observations where acquirer information is not provided by CRSP or Compustat, and firms where the acquirer was private at the time of the announcement (i.e. it was delisted according to CRSP prior to the announcement date). I removed observations where the acquirer purchases less than 100% of the target's stock, observations where either the acquirer or target was an American Depositary Receipt (ADR), Real Estate Investment Trust (REIT), or closed-end fund, and observations where there was no Section 302 or 404 information available for the acquirer in Audit Analytics before the announcement date. Finally, I removed observations where there is no effective date (as I only test completed deals),

observations where shareholders' equity is negative, observations where the acquirer is in the financial services or utilities industries, and observations missing information needed to calculate variables of interest. My final samples to test the relationship between acquirer internal control quality and acquirer abnormal stock returns (H2-H4) contain 7,751 announced acquisitions with SOX Section 302 information available and 4,060 announced acquisitions with SOX Section 404 information available. To test H1, the final samples used for H2-H4 are reduced for observations missing information needed to calculate pre- and post-RNOA. The final Section 302 and Section 404 samples to test the relationship between acquirer internal control quality and acquirer post-acquisition operating performance (H4) contain 5,731 observations and 3,087 observations, respectively.

I perform all testing separately on the Section 302 sample (where Section 302 disclosed material weaknesses are used to proxy for poor internal control quality) and the Section 404 sample (where Section 404 disclosed material weaknesses are used to proxy for poor internal control quality).

Research Design

To test H1, I regress acquirer post-acquisition RNOA on internal control quality and a set of control variables. To test H2-H4, I regress acquirer abnormal returns on internal control quality and a set of control variables previously shown to impact abnormal returns. I perform ordinary least squares regression, reporting p-values that reflect clustered standard errors as suggested in Petersen (2009) and Gow et al. (2010). I cluster by both acquiring firm and announcement date year, since

residuals of a given acquirer may be correlated across years and residuals of a given year may be correlated across different acquiring firms. In addition to ordinary least squares regression with clustered standard errors, I also perform robust regressions (Huber 1973) to control for the possibility of significant outliers in my dependent variables.

Calculating acquirer return on net operating assets (RNOA)

I measure an acquirer's post-acquisition operating performance by taking the average of the first two full years of RNOA after the acquisition effective date. I calculate RNOA using the Nissim and Penman (2001) definition, I winsorize all RNOA variables at 4%, and use only the first full year RNOA after the effective date if the second full year is not available. Following Barber and Lyon (1996), when regressing post-acquisition RNOA on internal control quality and control variables, I also control for the acquirer's operating performance prior to the acquisition, using average RNOA for the two years prior to the acquisition. When the -2 prior year RNOA information is missing, I use only the -1 year RNOA instead of the average. Finally, I calculate peer matched prior- and post-RNOA variables for the 5 matching firms in my peer firm portfolios that are closest in size to the acquirer firm (or closest in number of days the material weakness is outstanding compared to the acquirer under my alternate matching method). The peer portfolio selection process is the same as described below for use in calculating abnormal returns.

Calculating acquirer abnormal returns

As discussed in the Hypotheses Development section, I measure the value of the acquisition using abnormal returns to the acquirer during the announcement period (H2), the interim period (H3), and the post-acquisition period (H4). I measure abnormal returns by first calculating buy-and-hold returns (BHARs) for the acquirer in each distinct period, and then subtracting the average return for a portfolio of five peer firms matched with the acquirer on internal control quality, industry and market capitalization. The following equation illustrates how I calculate the BHAR for acquiring firm i

$$BHAR_{(t_1, t_2)}^i = BHR_{(t_1, t_2)}^i - BHR_{(t_1, t_2)}^{mean_matching_portfolio_i}$$

where t_1 and t_2 take on different values depending on the time period for which I am calculating returns. Figure 1 provides an illustration of the time periods used in calculating returns. The announcement period BHAR for firm i is calculated using the above equation where $BHR_{(t_1, t_2)}^i$ is the buy-and-hold return for acquiring firm i accumulated over the period starting two trading days before the announcement date and ending two trading days after the announcement date and

$BHR_{(t_1, t_2)}^{mean_matching_portfolio_i}$ represents the mean buy-and-hold return for the five firms in firm i 's matching portfolio over the same period. The same method is followed when calculating firm i 's interim period BHAR, except that t_1 is set to the third trading day after the announcement date and t_2 is set to the effective date of the transaction. When calculating the post-acquisition period BHAR, the same method is

followed with t_1 set to the first trading day after the effective date of the transaction and t_2 set to 24 months after the effective date of the transaction.

I form matching portfolios of peer firms for the acquiring firm in each acquisition following/adapting a combination of the matching portfolio methods used by Oler (2008) and Savor and Lu (2009). I first create a universe of potential matching firms that are in CRSP, Compustat, and Audit Analytics. I remove firms that have a stock price of less than \$3, firms that are ADRs, REITs, or closed-end funds, and firms in the financial services or utilities industries. Firms are also eliminated as potential match for acquiring firm i if the potential matching firm was involved in an acquisition any time within a three year window prior to firm i 's acquisition announcement date. Next, I sort the universe of potential matching firm-years into two categories – those with material weaknesses and those without material weaknesses so that I can match on internal control quality. I match on internal control quality to address a potential alternative explanation that my results are not indicative of a relationship between internal control quality and M&A performance as I suggest, but are instead driven by poorer operating performance potentially common to *all* internal control weakness firms. For my Section 302 sample (where SOX disclosures are made quarterly), I assign a firm-year within my universe of potential matching firms to the “Material Weakness” category if Audit Analytics reports that the firm disclosed at least one material weakness in the fourth quarter of the year prior to the announcement date. For my Section 404 sample (where disclosures are only made annually) I assign a firm-year to the “Material Weakness” category if Audit Analytics

reports that a specific firm-year reported at least one material weakness in the year prior to the announcement date. The process discussed next for finding matches is then performed separately for acquisitions involving acquirers with material weaknesses and those without.

Within each industry I form five size portfolios based on market capitalization. I then select the 12 firms from the same material weakness/industry/size portfolio that are closest in size compared to the acquirer firm i . I define industry using each acquirer firm i 's 4-digit GICS code, unless there are fewer than 12 matches using that definition, in which case I relax the definition to be more general (e.g., going from 4-digits to 2-digit matching industries). I then select the first five matching firms for acquirer firm i to form my portfolio of matching firms. If any of the firms in the portfolio delist prior to the end of the 24 month post-acquisition window, I replace it with the next closest match; if all possible matches delist before the 24 month window ends, I use the CRSP equal-weighted returns including dividends.

I also form an alternate portfolio of five peer firms matched only on industry, existence of a material weakness in the year prior to the announcement year, and the number of days the material weakness remains outstanding (calculated starting with the year/period just before the announcement year and ending with the period-end in which the material weakness drops off or 12/31/2010, whichever comes first).⁸ Note that this alternative matching method does not specifically match based on size (although size is always a control variable in my regressions), due to the difficulty in

⁸ I refer to this alternate matching method in later text and tables as "Matching Method B." I refer to the first matching method discussed as "Matching Method A."

finding suitable ‘days outstanding’ matches if size is also included in the match. This alternate matching peer portfolio is useful in my testing of long-run operating performance and stock returns, since it is likely that peer portfolio firms may match with the sample firm on internal control quality before the announcement date, but after 24 months the peer firms and the sample firm may not be good internal control quality matches. Matching based on days the material weakness is outstanding ensures that the peer firms continue to be good internal control quality matches for acquirers throughout the 24 month period after the deal closes. A limitation to this alternate matching method is that I am peeking ahead with respect to future internal control information to find matches. While investors would not be able to implement a trading strategy based on results I find with the alternate matching technique, it is useful in attempting to determine the effects that ongoing material weaknesses have on M&A transactions.⁹

Internal control quality variables and control variable calculations

I measure internal control quality using SOX material weakness disclosures available in Audit Analytics. My internal control quality proxy for the Section 302 sample (Section 404 sample) is an indicator variable set to one if the acquirer reported at least one SOX Section 302 (Section 404) material weakness in the most recent SEC filing prior to the acquisition announcement date. I ensure that the material weakness

⁹ Without matching on the length of time a material weakness is outstanding, one could argue that finding a negative association with acquirer material weaknesses and post-acquisition performance in long-run analyses may be due to the matching peer firms resolving their material weakness problems more quickly than the acquiring firms. By finding matches that remain close in internal control quality throughout the 24 months after the acquisition, I help rule out the alternative explanation that my long-run results are driven by poorer long-run performance by *all* firms with ongoing material weaknesses, regardless of their involvement in M&A.

disclosure was publically available prior to the announcement date so that investors are potentially aware of internal control problems that may impact acquisition performance at the announcement date.

In testing the relationship between internal control quality and acquisition performance, I control for several factors that are likely to impact acquirer abnormal returns and post-acquisition RNOA. Small acquirers have been shown to perform better than large acquirers in the announcement period (Moeller et al. 2004), thus I control for “small acquirers” using an indicator variable following Moeller et al.’s (2004) small acquirer definition. I also control for the size of the acquirer using the natural log of the acquirer’s market capitalization. I control for the acquirer’s book-to-market (BTM) ratio since prior research finds that acquirers with higher BTM ratios tend to perform better (Rau and Vermaelen 1998). I also define and control for momentum, net operating assets, sales growth, and total accruals following Oler (2008). Acquisitions paid for with only stock consideration have been shown to yield lower acquirer returns in both the announcement period (Travlos 1987; Servaes 1991; Bhagat et al. 2005) and post-acquisition (Loughran and Vijh 1997; Rau and Vermaelen 1998). I control for this effect by using an indicator variable equal to 1 when the deal is paid for entirely using stock (as reported in SDC), and 0 otherwise. Hostile takeovers have been associated with higher returns (Loughran and Vijh 1997). Thus, although there is a very small proportion of hostile deals in my sample, I control for hostile takeovers using an indicator set to 1 when SDC reports that the acquisition is hostile and 0 otherwise. Oler (2008) finds that an acquirer’s pre-announcement cash

level is a negative predictor of post-acquisition returns and Harford (1999) finds that high-cash acquirers tend to have lower announcement period returns. Thus, I control for the acquirer's cash level as defined in Oler (2008). My sample contains both public and private target firms, and there is some evidence suggesting that acquirer shareholders of private target firms enjoy higher abnormal returns as compared to acquisitions of public targets (Fuller et al. 2002). As such, I control for the public status of the target firm by using an indicator variable set to 1 when the target firm is public, else 0. Acquisitions involving acquirers and targets within different industries have been associated with lower acquirer returns (Morck et al. 1990; Moeller et al. 2004). Thus I control for the effect of diversifications with an indicator variable that takes on a value of 1 when the acquirer and target are in different industries. All variables used in my analyses are more specifically defined in Appendix B.

Descriptive Statistics

Table 2 presents descriptive statistics about the Section 302 and Section 404 samples used to test the relationship between internal control quality and acquirer RNOA (H1). There are 5,731 observations in the Section 302 sample, compared to 3,087 observations in the Section 404 sample. The significantly smaller sample size in the Section 404 sample is explained by the fact that it is significantly more restricted both by years of available disclosures and by the number of firms required to comply. See the Background on SOX Requirements and Literature Review section for further information on the differences between Section 302 and Section 404 requirements that lead to these sample size differences. Post-acquisition mean BHARs for both

samples are negative, which is consistent with prior research conclusions that acquisitions are on average value destructive for acquirer shareholders. I report that 3.2% (6.5%) of acquirers in my Section 302 (Section 404) sample disclosed at least one material weakness in their most recent SEC filing before the acquisition announcement date. The higher percentage of internal control problems reported in the Section 404 sample is consistent with suggestions that these audited Section 404 disclosures are subject to a lower materiality threshold (Doyle et al. 2007a; Beneish et al. 2008). The acquirers in the Section 404 sample are larger, as reflected in higher mean and median values of market cap and a smaller percentage of “small acquirers” in the Section 404 sample. Larger acquirers in the Section 404 sample is consistent with the fact that only larger, accelerated filers are required to comply with SOX Section 404, whereas all U.S. public firms are required to comply with SOX Section 302. There is a higher proportion of stock-only deals in the Section 302 sample. Both the Section 302 and Section 404 samples are made up of acquisitions of privately held targets. Only about 6.5% of each sample is made up of acquisitions involving a publically traded target firm. Other control variables are similar between the two samples.

Descriptive statistics on the samples used to test the relationship between internal control quality and abnormal returns (H2-H4) are presented in Table 3. The Section 302 and Section 404 samples in Table 2 for RNOA testing discussed above represent sub-samples of the samples in Table 3 (because some observations are

missing RNOA information). The relationships discussed in the more restricted RNOA sample are consistent in the more expanded returns sample reported in Table 3.

I present both Pearson and Spearman correlations for the samples used to test H1 in Table 4. The indicator variable for a material weakness is strongly and negatively associated with post-acquisition RNOA and post-acquisition BHARs in the Section 302 and Section 404 samples. Neither sample shows significant correlations between the presence of a material weakness and announcement period or interim period returns. Post-acquisition acquirer BHARs are significantly and positively correlated with post-acquisition operating performance, which is consistent with investors reacting positively to firms reporting higher operating performance after the merger. Table 4 also reveals a strong negative correlation between acquirer size and the presence of a material weakness in both samples (i.e., the market cap variable is strongly and negatively correlated with the material weakness variable and the “small acquirer” variable is strongly and positively correlated with the material weakness variable). This is consistent with prior studies (Doyle et al. 2007b) that show that smaller firms are more likely to report SOX material weaknesses.

Pearson and Spearman correlations for the samples used to test H2-H4 are not tabulated, as most are similar to the correlations presented in Table 4.

V. Results

Table 5 presents both ordinary least squares (OLS) and robust (Huber 1973) regression results to test the relationship between internal control quality and post-acquisition operating performance (H1), as measured by RNOA. I present results for

the two alternative matching methodologies discussed in Section 4.2. “Matching Method A” as shown in the left-hand columns of Table 5 includes RNOA matching portfolio control variables which are calculated using the match on industry, the existence of a material weakness prior to the announcement date, and size. “Matching Method B” calculates RNOA matching portfolio control variables using the match on industry, the existence of a material weakness prior to the announcement date, and the number of days a material weakness is outstanding. Table 5 presents results for the two alternative methods for calculating peer portfolios since the testing involves long-run performance where peer portfolio firms may not continue to be close internal control quality matches in the 24 months after the deal closes. Without matching on the number of days a material weakness is outstanding as in this alternative match, one could potentially argue that my results in Table 5 could be attributed to a failure to control for differences in how long a material weakness remains outstanding in the sample firm versus the peer portfolio. As discussed in the Research Design section p-values reported for OLS reflect clustered standard errors (clustered on both acquiring firm and year) as suggested in Petersen (2009) and Gow et al. (2010). I find that acquirers with SOX material weaknesses are significantly associated with lower post-merger operating performance in both the Section 302 and Section 404 samples. Thus, I find strong support for H1, regardless as to whether internal control quality is measured using Section 302 or Section 404 material weaknesses. My evidence suggests that internal control quality helps determine post-acquisition operating performance, perhaps by facilitating a smoother, faster integration of the target firm.

Other variables are generally as expected based on my post-acquisition abnormal returns regression results and prior research.

I present both ordinary least squares (OLS) and robust (Huber 1973) regression results for acquirer announcement period abnormal returns in Table 6. Regression results suggest that the presence of at least one material weakness at the acquirer firm is negatively and significantly associated with lower announcement period abnormal returns in the Section 302 sample, with a marginally significant relationship displayed in the Section 404 sample. This result implies that the market anticipates acquisition performance problems for acquirers with material weakness(es) during a brief five day announcement period. H2 is strongly supported only when internal control quality is proxied by Section 302 disclosures. Control variables are generally consistent with expectations based on prior research. Larger acquirers experience lower abnormal announcement period returns as expected. Consistent with prior research I find that stock deals and acquisitions of public targets tend to significantly underperform. The results for other control variables are generally in the expected directions.

While investors appear to respond negatively to acquirers with material weaknesses during the short announcement period, it is possible that this response is incomplete. As discussed in Section 3, investors with limited attention may fail to fully and quickly impound publically available internal control quality information into stock price (Hirshleifer and Teoh 2003). The next set of analyses examines investor response in the interim period (i.e., the period starting the third day after the announcement and ending on the deal's effective date).

Table 7 reports the OLS and robust regression results for acquirer interim period abnormal returns. Material weaknesses at the acquirer firm are not significantly associated with interim period abnormal returns for either the Section 302 or the Section 404 sample. It is possible that the stock market reaction during the announcement period is complete, or perhaps no new significant information was revealed during the interim period that helped investors understand the implications of poor internal control quality on acquisition performance. Thus, H3 is not supported. Control variables are again generally consistent with expectations based on prior research, with stock deals and acquisitions of public targets significantly underperforming and hostile takeovers exhibiting superior performance.

As discussed above, I find that investors react negatively to acquisitions involving acquirers with internal control problems in the announcement period (for both Section 302 and Section 404 samples) and that negative reaction disappears in the interim period. The next set of analyses addresses the question of whether those negative reactions displayed in the announcement period are complete or if post-acquisition abnormal returns can be predicted by an acquirer's pre-announcement internal control quality. Table 8 presents OLS and robust regression results testing H4. For the Section 302 sample, my regression results estimate a negative association between the presence of at least one material weakness at the acquirer and post-acquisition abnormal returns, and the relationship is significant for nearly all the analyses. In contrast, the relationship in the Section 404 sample is only significant in

the alternate matching technique regressions.¹⁰ Taken together with the H2 and H3 findings, it appears that investors partially anticipate poorer acquisition performance in the announcement period, but the response is not complete (especially for the Section 302 sample). H4 is strongly supported only for the Section 302 sample. For the Section 404 sample, it is possible that the negative effects of poor internal control quality were fully impounded into stock price in the announcement period. Perhaps investors are better able to understand and quickly impound the implications of internal control problems on M&A for the larger, accelerated filers required to make Section 404 disclosures. Prior SOX research findings also suggest the possibility that internal control problems reported in accordance with Section 404 may simply have a weaker association with post-acquisition stock performance as compared to Section 302 problems because they are less informative. It is possible that Section 404 internal control problems are less serious, due to auditors applying a lower materiality threshold than management when assessing internal control quality (Doyle et al. 2007a; Beneish et al. 2008). Additionally, internal control quality information may simply be more informative to market participants for smaller firms (i.e. those subject to Section 302, but not Section 404) since these smaller firms operate in less rich information environments that inherently present higher information uncertainty to investors (Beneish et al. 2008). Analysis of post-acquisition returns in Table 8 also yields some interesting results for one of my control variables. While stock acquirers

¹⁰ In both the Section 302 and Section 404 samples, results reported in Table 8 for “Acquirer with MW(s)” are stronger when abnormal returns are calculated under Matching Method B. The higher adjusted R-squared values under Matching Method B compared to Matching Method A analyses suggests there may be less noise in these analyses due to better matches achieved under method B.

continue to underperform in the Section 302 sample, I find that small acquirers also tend to underperform post-acquisition. This is in contrast to the market expectation of superior performance for smaller acquirers I show in Table 6.

Taken together, the analyses of RNOA in the post-acquisition period and abnormal returns in all three periods are consistent with the notion that internal control quality (especially as measured by the presence of at least one Section 302 material weakness) is related to acquisition performance, and investors seem to only partially anticipate the negative effect of internal control problems on acquisition performance. Investors do not fully realize the effect of internal control quality on acquisition performance until a more prominent signal (RNOA) arrives in the post-acquisition period. My evidence is consistent with the logic from earlier work finding that investors fail to quickly impound information into price (e.g., Bernard and Thomas 1989; Sloan 1996). My results suggest that internal control quality disclosures provided by SOX (especially Section 302) are useful to investors as they attempt to predict the success of M&A deals.

My finding that primarily Section 302 (and not Section 404) material weaknesses are informative for acquisition stock performance is consistent with prior SOX research that finds that Section 302 material weaknesses are generally more informative than Section 404 material weaknesses (e.g., Beneish et al. 2008; Ogneva et al. 2007). However, this interpretation must be made with caution since it is possible that Section 404 disclosures are also predictive of poorer acquisition performance, but other factors make the effect difficult to find. For example, the

Section 302 sample size is nearly twice that of the Section 404 sample, thus, my Section 404 samples may suffer from a relative lack of power. Additionally, compliance with Section 404 was required beginning with fiscal years ending on or after November 15, 2004 whereas Section 302 was effective in August 2002. Thus, the Section 302 sample has return information from 2002 to 2009, whereas the Section 404 sample has return information from 2005 to 2009. There may be an effect of Section 404 material weakness disclosures on acquisition performance, but it may be more difficult to find since the 404 sample may have noisier return information due to the financial crisis having a bigger impact in that sample as compared to the impact it had in the wider Section 302 sample. I perform additional analyses below to try to determine why I fail to find strong results for the Section 404 sample.

VI. Sensitivity Tests and Additional Analyses

In the Sensitivity Tests section below I discuss a variety of sensitivity tests aimed at evaluating the robustness of my results described above. Next I discuss additional analyses performed in an attempt to determine *how* internal control quality impacts acquisition performance and *why* internal control quality appears to be less important in the Section 404 sample.

Sensitivity Tests

Sample selection bias

Since a firm's decision to acquire another firm is a non-random event, sample selection bias is a potential threat to my findings. In my primary analyses, I attempt to overcome sample selection bias through selection of control firms that are as similar as

possible to each sample firm except for the decision to acquire. However, unobservable factors affecting *both* the decision to acquire and performance outcomes (i.e., operating performance measured with RNOA and stock market returns) could lead to estimation bias (Heckman 1979). To determine whether my findings are robust after controlling for management's choice to acquire, I perform analyses following Heckman's 2-stage approach (Heckman 1979). In the first stage, I estimate an acquisition choice model using a probit regression. In the second stage I include the Inverse Mills ratio (IMR) which serves as a sample selection bias correction variable. I perform Heckman 2-stage analyses to re-examine H1 through H4 and find results generally consistent with those reported in Tables 5 through 8 after controlling for the decision to acquire. Appendix C presents the full results and discussion of my Heckman 2-stage testing.

Alternative measures of stock market abnormal returns

My analyses presented in Tables 6 through 8 test H2 through H4 using abnormal returns estimated using a portfolio of peer firms matched with each acquirer based on internal control quality, industry, and size.¹¹ In those analyses, I find strong support for only H2 and H4 when Section 302 is used to measure internal control quality and marginal support for H2 and H4 when Section 404 is used to measure internal control quality. To determine whether the results I find above are sensitive to

¹¹ I also test the relationship between internal control quality and post-acquisition returns using a measure of abnormal returns based on a peer portfolio of firms match on only industry, existence of a material weakness before the announcement date, and how long the material weakness remains outstanding. This matching method controls for how long a material weakness remains outstanding, and is particularly important in Table 8 since the returns period is considerable (two years past the effective date) and a sample firm and a control firm may differ as to whether or not the material weakness remains unremediated after two years.

my particular measure of abnormal returns (buy-and-hold returns adjusted by the mean buy-and-hold return for the matching portfolio), I perform the following untabulated robustness checks. I estimate three alternative measures for abnormal returns: 1) by calculating cumulative returns for the acquirer and then adjusting those by the mean cumulative return for the peer portfolio; 2) by calculating acquirer cumulative returns and adjusting those by CRSP equal-weighted returns including dividends; and 3) by calculating acquirer buy-and-hold returns and then adjusting them by the CRSP equal-weighted return including dividends. I perform OLS regressions (with p-values based on clustered standard errors, clustered by acquiring firm and year) and robust regressions using each of the three alternative measures of returns discussed above.

Regarding H2, results of analyses using the three alternative abnormal returns measures are consistent with those reported in Table 6 for Section 302 and Section 404, with one minor exception. In the Section 302 sample, the relationship between announcement period returns and internal control quality is only marginally significant when I perform the robust regression using BHARs adjusted by the CRSP equal-weighted return including dividends (estimate = -0.005, one-tailed p-value = 0.056). A possible explanation for the decrease in significance is that my primary method for estimating abnormal returns using the peer portfolio matching method provides a cleaner measure of abnormal returns when compared to the more general method of calculating abnormal returns by subtracting the CRSP equal-weighted return.

In re-examining H4 with alternative measures for abnormal returns, the results reported in Table 8 remain strong for the Section 302 sample, with only one small

departure. The relationship between post-acquisition returns and internal control quality is only marginally significant when I perform the robust regression using CARs adjusted by the CRSP equal-weighted return including dividends (estimate = -0.036, one-tailed p-value = 0.098). As before, the loss of significance is likely due to the use of a more blunt measure for calculating abnormal returns compared to my primary measure which uses peer portfolio matched firms. For the Section 404 sample, results presented in Table 8 (little to marginal support for H4) are consistent when regressions are performed on the alternative measures of post-acquisition returns. Overall, the sensitivity analyses performed using alternative measures of abnormal returns support my results displayed in Tables 6 through 8.

Alternative explanation for results – corporate governance

A potential challenge to my findings is that poor internal control quality is not detrimental to acquisition performance as I suggest, but instead there is a correlated omitted variable driving my results. Prior research finds that companies with weak corporate governance are more likely to experience certain types of SOX material weaknesses in internal control (Doyle et al. 2007b). Prior research using the limited internal control information available pre-SOX (i.e., internal control problems as disclosed in 8-Ks surrounding an auditor change) also finds that firms with higher quality corporate governance report fewer internal control problems (Krishnan 2005). Prior research in the M&A literature finds that acquiring firms with relatively poorer corporate governance experience significantly lower announcement period returns (Masulis et al. 2007). Taken together, these two streams of research suggest that

poorer corporate governance could be causing both the SOX internal control problems and poorer acquisition performance.

To rule out the above alternative explanation for my results, I re-perform my testing for H1 through H4 including a variable measuring corporate governance. Samples sizes are severely restricted in these analyses due to limited availability of corporate governance information; however, results indicate that corporate governance does not appear to pose a correlated omitted variable problem. Reductions in significance for some of my results are consistent with a relative lack of power and do not seem to be driven by corporate governance acting as a correlated omitted variable. Appendix D presents full results and discussion.

Additional Analyses

Analyses on how internal control quality impacts acquisition performance

Table 9 presents the results of regressing 1) acquirer post-acquisition operating performance (RNOA) and 2) acquirer post-acquisition abnormal returns on acquirer internal control quality and control variables. I analyze three different models that differ only in the definition of the key variable of interest “Acquirer with MW(s).” The various definitions assist in distinguishing the severity of internal control problems and their effects on operating performance. Model 1 simply presents a replication of the robust regression results presented in Table 5 and Table 8 for ease of comparison. The definition of “Acquirer with MW(s)” in Model 1 is the most broad and sets the indicator variable to 1 if the acquirer firm reported one or more material weaknesses in its most recent SEC filing prior to the acquisition announcement, else 0.

This definition does not consider when or if the material weakness is later remediated. In Model 2, the definition of the indicator variable “Acquirer with MW(s)” is the same as in Model 1, with the additional restriction that the material weakness must continue to be reported on periodic SEC filings through at least the effective date of the deal, else 0. In this definition, acquirers with internal controls problems continue to have these problems throughout the entire due diligence process. These problems continuing throughout the due diligence process likely impede management’s ability to plan an efficient and effective integration plan. These problems may also be more serious since they are not resolved quickly. The restriction required in Model 2 reduces percentage of acquisitions where the acquirer is deemed to have a material weakness from 3.1% to 2.9% in the Section 302 sample (the variable goes from 6.5% to 6.2% in the Section 404 sample). Finally, in Model 3, “Acquirer with MW(s)” is as before, but the material weakness must continue to be reported at least one year past the deal effective date, else 0. Under this definition, the internal controls problems of acquirers must persist at least one year past the deal effective date. Management should be carrying out its post-acquisition integration plan in this crucial time after the deal closes. Management’s integration activities may be hindered by control problems that remain un-remediated in the first year after the deal closes.¹² This restriction reduces the percentage of acquisitions where the acquirer is deemed to have a material weakness to 0.9% in the Section 302 sample (the variable decreases to 1.7% in the Section 404 sample).

¹² Refer to the Hypotheses Development section for a more thorough discussion of how internal control problems may hinder the post-acquisition integration process.

While the primary concern of this paper is to demonstrate that poor internal control quality at the acquirer has a negative effect on acquisition performance, analyses presented in Table 9 represent my endeavor to provide evidence on *how* internal control quality impacts acquisition performance. In the Hypotheses Development section, I identify two possible mechanisms through which internal control quality at the acquirer may impact acquisition performance. First, I suggest that poor internal control quality at the acquirer may indicate that management is using lower quality/less timely internal reports/projections to make an acquisition decision. All else equal, I expect that poorer information quality will lead to poorer acquisition decisions. Thus, under the first possible mechanism, it is the poor internal information environment at the acquiring firm existing pre-announcement that drives the poor acquisition performance. The issue of whether or not the control problems are remediated after the deal announcement should not significantly impact acquisition performance if this first mechanism drives the relationship.

Second, I suggest in the Hypotheses Development section that poor internal control quality at the acquiring firm may negatively impact acquisition performance by hindering an efficient and effective post-merger integration process. Under this second possible mechanism, internal control problems that persist throughout the post-acquisition integration process should be most damaging to acquisition performance. The analyses presented in Table 9 utilize varying definitions for the variable “Acquirer with MW(s)” in an attempt to provide initial evidence on which of these two mechanisms appears to be driving poorer acquisition performance.

The varying definitions of “Acquirer with MW(s)” as described above are intended to help discriminate between the two proposed mechanisms for how internal control quality impacts acquisition performance. If the first mechanism drives the relationship, I would expect to see little change in regression results for the “Acquirer with MW(s)” variable between Model 1, 2 and 3. Alternatively, if the second mechanism drives the relationship, I would expect to see much stronger negative results for the “Acquirer with MW(s)” variable as I move from the definitions in Model 1 to Model 2 to Model 3.

Evidence presented in Table 9 for Section 302 is consistent with the second mechanism being more important in driving the association between internal control quality and acquisition performance. When post-acquisition RNOA is the dependent variable, moving from Model 1 to Model 2 results in the coefficient for the internal control variable slightly increasing (from -0.040 to -0.049) and remaining highly significant (one-tailed p-value <0.0001). This implies that when the material weakness lingers to at least the effective date of the deal, the negative relationship between internal control quality and post-acquisition operating performance gets slightly stronger. One explanation for this result is that the internal control problem existing throughout the due diligence period is detrimental to post-integration planning activities that should be occurring during that time.

Moving from Model 2 to Model 3 testing RNOA in the Section 302 sample, the coefficient triples (from -0.040 to -0.129) and remains highly significant (one-

tailed p-value <0.0001).¹³ This implies that when the material weakness lingers to at least one year past the deal effective date, the negative relationship gets much stronger. This finding is consistent with my suggestion that internal control problems hinder the post-acquisition integration activities that are so important to acquisition success. For post-acquisition BHARs, moving from Model 2 to Model 3 causes the coefficient on “Acquirer with MW(s)” to increase by nearly 50 percent (remaining significant), suggesting that investors do not anticipate the more negative consequences that a persistent internal control problem has on integration efficiency and appear more surprised by the poorer operating performance.

For the Section 404 sample, the relationship between internal control quality and post-acquisition RNOA also gets much stronger when moving from Model 1 to Model 3 (the estimated coefficient increases from -0.037 to -0.094, remaining highly significant). Comparing the Section 302 results to the Section 404 results for Table 9 RNOA testing, it is interesting to note that there is a larger increase in coefficient estimates from Model 1 to Model 3 for Section 302 sample and the coefficient estimates are larger in the Section 302 sample. This is consistent with the notion that Section 404 problems are generally less severe and less meaningful.

The relationship between long-run BHARs and internal control quality exhibits a strange pattern for the Section 404 sample. The coefficient estimate is negative and

¹³ Analyses in Table 9 are performed on abnormal returns (and RNOA peer portfolio control variables) calculated using a peer portfolio matched on industry, existence of a material weakness in the year prior to the announcement date, and the number of days a material weakness is outstanding (Matching Method B). Without matching on the number of days outstanding, one could argue that my results in Table 9 could be attributed to differences in how long a material weakness remains outstanding in the sample firm versus the peer portfolio.

significant for both Model 1 and Model 2, but when the variable is defined to reflect problems that continue for at least one year past the deal effective date (i.e., Model 3) the relationship switches from negative to positive. This implies that investors are positively surprised by performance of acquirers with material weaknesses that last at least one year past the deal's effective date. A possible explanation for this seemingly bizarre finding is that investors may over-react to these problems in the announcement period, and then are surprised by better than expected operating performance in the post-acquisition period.

Based on overall results in Table 9, it appears that the more important driving force behind *how* internal control problems at the acquirer impact post-acquisition performance is through their detrimental effects on integrating the target post-acquisition. This finding is consistent with conventional wisdom from practice that “no matter how good the deal design, implementing the merger integration is where the hypothesize deal benefits are won or lost” (Bruner 2004, 7).

Analyses on why Section 404 material weaknesses appear less meaningful

My primary analyses find that Section 302 material weaknesses tend to be more informative for acquisition performance. Prior research in a variety of contexts also finds that Section 302 material weaknesses tend to be more informative (see discussion in the Background on SOX Requirements and Literature Review section). Prior researchers have suggested two possible reasons for this phenomenon: First, it is possible that Section 404 internal control problems are less serious, but are reported because of auditors applying a lower materiality threshold than management when

assessing internal control quality (Doyle et al. 2007a; Beneish et al. 2008). Second, internal control quality information may simply be more informative to market participants for smaller firms (i.e. those subject to Section 302, but not Section 404) since these smaller firms operate in less rich information environments that inherently present higher information uncertainty to investors (Beneish et al. 2008).

In this section I perform additional, untabulated analyses to determine if the two possible explanations put forth by prior research are responsible for my less significant results when Section 404 material weaknesses are used to measure internal control quality. To test whether increases in the severity of Section 404 material weaknesses impact the relationship with acquisition performance, I replace my dummy variable for acquirer internal control quality with one that should reflect only more serious internal control problems. Recall that my original testing variable of interest is a dummy variable set to 1 if there is at least one material weakness in the acquirer's most recent SEC filing prior to the deal announcement date, else 0. For the Section 302 sample, Audit Analytics tracks material weaknesses only with a "1" (if there is at least one material weakness) or "0" (if internal control is deemed effective and there are no material weaknesses). However, for Section 404, Audit Analytics maintains a count variable for the number of material weaknesses disclosed. If Section 404 material weaknesses are less severe than Section 302 material weaknesses, perhaps a more comparable measure of internal control quality in terms of severity is "Multiple MWs." I re-define my variable of interest "Acquirer with MW(s)" as only equal to 1 when there are *at least two* Section 404 material

weaknesses reported by Audit Analytics in the most recent year prior to the announcement date, else 0.

Next, I restrict my Section 404 sample to include only acquisitions with acquirers that are smaller than the sample median acquirer size. If internal control problems are more informative for smaller firms as suggested by prior researchers, this restriction may help me find more significant results by isolating the sample to firms where the effect of internal control quality is likely to be most important.

I re-perform testing on post-acquisition RNOA (H1) using the restricted sample of smaller acquirers (i.e., acquirers smaller than the sample median size) with more severe internal control problems (i.e., the internal control quality dummy variable is set to 1 for acquirers with multiple Section 404 material weaknesses, else 0). I also calculate peer portfolios for use in the peer-portfolio RNOA control variables by matching on the existence of *multiple* Section 404 material weaknesses reported prior to the announcement date. The sample size is reduced to only 1,559 due to the acquirer size restriction. The percentage of acquirers classified as “Acquirer with MW(s)” in this sample (3.3%) is much smaller compared to the full Section 404 sample used in primary analyses (6.5%) because an acquirer must have two or more material weaknesses to be considered an “Acquirer with MW(s)” for these analyses.

In comparison to the results reported in Table 5 for Section 404, I find that the more severe measure of internal control quality appears to be more strongly related to post-acquisition RNOA. The coefficient estimate on the internal control variable increases from -0.028 (one-tailed p-value = 0.009) as estimated by the OLS regression

adjusted for clustered standard errors on Table 5 to -0.051 (one-tailed p-value = 0.029). The coefficient estimated by robust regression on Table 5 increases from -0.038 (one tailed p-value = <0.0001) to -0.060 (one-tailed p-value = 0.0001). Control variables are consistent with those reported in Table 5.

The stronger relationship between Section 404 internal control quality and post-acquisition operating performance after restricting to smaller acquirers with more severe internal control problems provides support for prior researchers' claims that internal control quality is more important for relatively smaller firms. It also supports the suggestion that Section 404 material weaknesses generally represent less serious problems, perhaps due to auditors applying a lower materiality threshold than management when assessing internal control.

VII. Conclusion

I examine internal control problems disclosed under Section 302 and Section 404 of SOX in a previously unexplored context – mergers and acquisitions. I predict that an acquirer's pre-acquisition internal control environment quality (proxied by SOX material weakness disclosures) has implications for acquisition performance. I argue that poor internal controls over external financial reporting disclosed in compliance with SOX may signal poor quality *internal* financial information (i.e., projections, cost information, etc.) that management will likely rely upon to make an M&A decision. If the internal information needed to make an acquisition decision is less reliable and/or less timely, then it follows that companies with poorer information will make poorer acquisition decisions. I further suggest that internal control

problems at an acquiring firm may impede a quick and effective integration of the target firm. Efficient and effective integration post-merger is crucial to obtaining synergies, thus, firms struggling with integration are likely to experience poorer post-acquisition performance.

I find that both Section 302 and Section 404 material weaknesses disclosed prior to the acquisition announcement predict significantly negative post-merger operating performance. My results suggest that the market uses these SOX disclosures (especially Section 302 disclosures, and to a lesser extent Section 404 disclosures) to anticipate poorer post-merger operating performance as indicated by a significant and negative announcement period response. Although the market responds during the announcement period, the response is not complete and pre-announcement internal control information predicts significantly negative post-acquisition returns. These results are consistent with Hirshleifer and Teoh's (2003) limited attention hypothesis. Since internal control information is not disclosed in acquisition announcements and its impact on M&A may be relatively ambiguous, rational investors with limited attention may fail to fully and quickly impound the publically available internal control quality information into stock price.

My findings suggest a previously unidentified benefit of SOX material weakness disclosures – that is, internal control quality information conveyed by these disclosures can be used to help predict M&A performance. These findings contribute to the SOX cost-benefit debate. I find that investors have a significant and negative response to acquirers with Section 302 internal control problems in the announcement

period, and the negative association between Section 302 problems and post-acquisition operating performance and post-acquisition abnormal returns is also strongly significant. My failure to find a more significant relationship between Section 404 material weaknesses and investor response may suggest that the less costly, unaudited Section 302 disclosures are more informative in an M&A context. However, due to a relative lack of power and potentially noisier returns in the Section 404 sample that make an effect more difficult to find, this interpretation must be made with caution. In limited additional analyses I attempt to determine why Section 404 problems appear to be less important to acquisition performance. I find evidence consistent with the explanation that Section 404 material weaknesses are less informative than Section 302 because they are less severe and apparently less detrimental to operations in the larger firms required to comply with Section 404. My findings also contribute to the M&A literature. I identify a new firm-specific acquirer characteristic (internal control quality) that impacts the value of an acquisition to acquirer shareholders.

My primary evidence suggests that internal control quality is associated with acquisition performance; through additional analyses I provide preliminary evidence on *how* internal control quality impacts acquisition performance. I present two viable options for how poor internal control quality may negatively impact acquisition performance (i.e., through lower quality internal reports used to make an acquisition decision and/or through disrupting the post-merger integration process). My limited additional analyses in this paper suggest that the latter option is more likely the driving

force behind the relationship between internal control quality and acquisition performance. However, future research could further investigate the mechanism(s) through which internal control quality at the acquiring firm impacts acquisition performance. Future research could also address whether the internal control quality of the target firm is an important determinant in acquisition performance. More research is also needed to better understand why Section 404 material weaknesses appear to have a weaker relationship with acquisition performance as compared to Section 302 material weaknesses. Finally, future research may investigate if other significant operational decisions are impacted by poor internal control quality.

Returns Measurement Windows – adapted from Oler (2008)

This figure presents the measurement windows used in my analyses in conjunction with the availability of public information related to the acquirer. SOX material weakness information is gathered from the most recent SEC form 10-Q or 10-K filing prior to the deal announcement. For Section 404, this information is only available in the annual 10-K. The announcement period window begins two trading days before the acquisition is announced, and ends two trading days after the announcement. The interim window begins three trading days after the announcement, and ends on the effective date of the transaction. The post-acquisition period begins on the day following the transaction effective date, and ends at the end of the month falling 24 months after the effective date. The less prominent signal, acquirer SOX internal control disclosures, is part of the background information available for the acquirer when the acquisition is announced. The more prominent signal, return on net operating assets (RNOA), is reported in the years following the acquisition effective date.

Figure 1 Returns Measurement Windows

Table 1 Sample Selection Procedure

This table reports the number of observations from SDC's Mergers and Acquisitions (Domestic) database downloaded on March 4, 2011. The initial download includes mergers and acquisitions of U.S. targets announced between 1/1/2002 and 12/31/2010. My SDC query excluded spinoffs, recapitalizations, self-tenders, exchange offers, repurchases, minority stake purchases, acquisitions of remaining interest, and privatizations. I first restrict my sample to deals announced between 8/29/2002 (the effective date of SOX Section 302) and 12/31/2009. I then remove observations with missing acquirer or target cusip information, duplicate observations (i.e., where the same acquirer cusip, target cusip, and announcement date are listed multiple times), observations where no matching firm can be found in CRSP and Compustat, and firms where the acquirer was private at the time of the announcement (i.e. it was delisted according to CRSP prior to the announcement date). I then remove observations that have neither an effective date nor a withdrawn date, because it is ambiguous whether or not these deals were completed or withdrawn. I then remove observations where the acquirer purchases less than 100% of the target's stock, observations where either the acquirer or target was an American Depository Receipt (ADR), Real Estate Investment Trust (REIT), or closed-end fund, and where there was no Section 302 or 404 information available for the acquirer in Audit Analytics before the announcement date. Finally, I remove observations where there is no effective date (since I only test completed deals), observations where shareholders' equity is negative, observations where the acquirer is in the financial services or utilities industries, and observations missing information needed to calculate variables of interest.

Sample Selection	No. of Observations	
	<u>Section 302 Sample</u>	<u>Section 404 Sample</u>
Acquisitions reported by SDC from 1/1/2002 to 12/31/2010	75,671	75,671
Remove acquisitions where the announcement date is before 8/29/2002	(4,569)	(4,569)
Remove acquisitions where the announcement date is after 12/31/2009	(7,580)	(7,580)
Remove acquisitions missing acquirer or target cusip information	(14)	(14)
Remove duplicate acquisitions	(70)	(70)
Remove acquirers delisted prior to the announcement date	(1,534)	(1,534)
Remove acquisitions where the acquirer's permno (CIK) is not found on CRSP (Compustat)	(41,166)	(41,166)
Remove acquisitions where no effective or withdrawn date is reported	(1,794)	(1,794)
Remove acquisitions where acquirer purchased less than 100% of the target	(477)	(477)
Remove acquisitions where target or acquirer is an ADR, REIT, or closed-end fund	(1,735)	(1,735)
Remove acquisitions where acquirer SOX 302 info is not available	(1,210)	N/A
Remove acquisitions where acquirer SOX 404 info is not available	N/A	(8,303)
Remove acquisitions where CRSP/Compustat info is missing to calculate variables of interest	(1,026)	(356)

Table 1 Continued

Sample Selection	No. of	
	<u>Section 302 Sample</u>	<u>Section 404 Sample</u>
Remove acquisitions where acquisition effective date is missing	(303)	(175)
Remove acquisitions where shareholder's equity is negative	(306)	(152)
Remove acquisitions where the acquirer is in the financial services or utilities industries	(3,524)	(2,006)
Remove acquisitions where return information is not available in all three periods of interest	(2,612)	(1,680)
Final sample for testing relationship between internal control quality and abnormal returns	7,751	4,060
Remove acquisitions where information needed to calculate RNOA is missing	(2,020)	(973)
Final sample for testing relationship between internal control quality and RNOA	5,731	3,087

Table 2 Descriptive Statistics – Acquirer Internal Control Quality and Acquirer RNOA Sample

This table reports descriptive statistics for the samples used to test the association between acquirer internal control quality and post-acquisition operating performance (proxied using RNOA). The left panel reports descriptives for the sample in which Section 302 material weaknesses are used to measure an acquirer's internal control quality, whereas the right-hand panel reports the descriptives for the sample in which Section 404 material weaknesses are used. To be included in the sample, only the acquirer is required to be public; additionally Compustat information needed to calculate RNOA for the acquirer firm, CRSP price information needed to calculate returns must be available for the acquirer firm, SOX material weakness information must be available for the acquirer from Audit Analytics, and Compustat information needed to calculate variables of interest must be available for the acquirer. I include only completed deals in my samples. Values reported below for RNOA variables have been winsorized at the 4% level and all other continuous control variables have been winsorized at the 2% level. Variable definitions are in Appendix B.

Variable	302 Sample n=5,731						404 Sample n=3,087					
	Mean	P25	Median	P75	Min	Max	Mean	P25	Median	P75	Min	Max
Acquirer Post-AQ RNOA	0.099	0.035	0.103	0.180	-0.310	0.470	0.098	0.027	0.098	0.177	-0.250	0.446
Acquirer Annmt BHARs	0.006	-0.025	0.003	0.034	-0.631	0.743	0.004	-0.025	0.003	0.031	-0.638	0.776
Acquirer Interim BHARs	-0.002	-0.024	-0.001	0.022	-1.374	1.765	-0.001	-0.021	0.000	0.021	-0.625	1.608
Acquirer Post-AQ BHARs	-0.093	-0.419	-0.123	0.164	-5.277	12.317	-0.108	-0.368	-0.117	0.140	-3.965	3.443
Acquirers with MW(s)	0.032	0	0	0	0	1	0.065	0	0	0	0	1
Natural Log AQ Market Cap (\$M)	14.433	13.080	14.176	15.701	10.490	18.927	14.868	13.452	14.576	16.115	11.880	18.947
Acquirer Book-to-Market	0.422	0.239	0.352	0.536	0.064	1.344	0.408	0.245	0.346	0.516	0.076	1.190
Announcement Momentum	0.111	-0.061	0.075	0.231	-0.377	0.987	0.059	-0.088	0.040	0.182	-0.386	0.698
Acquirer NOA	0.691	0.484	0.672	0.834	0.094	1.912	0.684	0.484	0.663	0.823	0.118	1.798
Acquirer Sales Growth	0.188	0.047	0.121	0.260	-0.259	1.193	0.188	0.067	0.133	0.254	-0.127	0.901
Acquirer Total Accruals	0.102	0.001	0.056	0.134	-0.238	0.963	0.099	0.007	0.062	0.130	-0.153	0.745
Only Stock Offer	0.017	0	0	0	0	1	0.010	0	0	0	0	1
Hostile	0.000	0	0	0	0	1	0.000	0	0	0	0	1
Small Acquirer	0.166	0	0	0	0	1	0.105	0	0	0	0	1
Acquirer Cash	0.142	0.026	0.072	0.200	0.002	0.653	0.135	0.028	0.070	0.193	0.002	0.609
Target Public	0.063	0	0	0	0	1	0.065	0	0	0	0	1
Different Industry	0.461	0	0	1	0	1	0.480	0	0	1	0	1
Acquirer Prior-AQ RNOA	0.162	0.073	0.130	0.223	-0.305	0.826	0.201	0.091	0.152	0.243	-0.068	0.863
Prior-AQ RNOA for Peer Portfolio	0.242	0.074	0.186	0.345	-1.147	1.915	0.226	0.110	0.212	0.360	-1.003	1.123
Post-AQ RNOA for Peer Portfolio	0.207	0.064	0.178	0.310	-0.556	1.233	0.221	0.065	0.175	0.323	-0.430	1.191

Table 3 Descriptive Statistics – Acquirer Internal Control Quality and Acquirer Returns Sample

This table reports descriptive statistics for the samples used to test the association between acquirer internal control quality and abnormal returns to the acquirer. The left-hand panel reports descriptives for the sample in which Section 302 material weaknesses are used to measure an acquirer's internal control quality, whereas the right-hand panel reports the descriptives for the sample in which Section 404 material weaknesses are used. To be included in the sample, only the acquirer is required to be public; additionally CRSP price information needed to calculate returns must be available for the acquirer firm, SOX material weakness information must be available for the acquirer from Audit Analytics, and Compustat information needed to calculate variables of interest must be available for the acquirer. I include only completed deals in my samples. Values reported below for all continuous control variables have been winsorized at the 2% level. Variable definitions are in Appendix B.

Variable	302 Sample n=7,751						404 Sample n=4,060					
	Mean	P25	Median	P75	Min	Max	Mean	P25	Median	P75	Min	Max
Acquirer Anndt BHARs	0.007	-0.026	0.003	0.035	-0.631	0.743	0.004	-0.026	0.002	0.031	-0.638	0.776
Acquirer Interim BHARs	-0.002	-0.025	-0.001	0.023	-1.374	1.813	-0.001	-0.022	0.000	0.022	-0.625	1.608
Acquirer Post-AQ BHARs	-0.094	-0.422	-0.120	0.171	-5.277	12.317	-0.099	-0.363	-0.109	0.156	-6.145	8.980
Acquirers with MW(s)	0.033	0	0	0	0	1	0.070	0	0	0	0	1
Natural Log AQ Market Cap (\$M)	14.270	12.881	14.058	15.575	10.203	18.960	14.793	13.365	14.479	16.069	11.551	19.076
Acquirer Book-to-Market	0.424	0.233	0.350	0.541	0.054	1.412	0.405	0.235	0.342	0.518	0.061	1.194
Announcement Momentum	0.100	-0.071	0.065	0.225	-0.415	0.997	0.051	-0.094	0.036	0.174	-0.415	0.690
Acquirer NOA	0.655	0.443	0.655	0.822	-0.039	1.871	0.646	0.448	0.650	0.811	-0.036	1.719
Acquirer Sales Growth	0.186	0.042	0.121	0.255	-0.307	1.326	0.182	0.065	0.131	0.249	-0.180	0.918
Acquirer Total Accruals	0.102	-0.002	0.056	0.135	-0.256	1.042	0.093	0.003	0.061	0.128	-0.185	0.752
Only Stock Offer	0.021	0	0	0	0	1	0.012	0	0	0	0	1
Hostile	0.000	0	0	0	0	1	0.000	0	0	0	0	1
Small Acquirer	0.201	0	0	0	0	1	0.125	0	0	0	0	1
Acquirer Cash	0.164	0.029	0.086	0.236	0.002	0.710	0.156	0.030	0.084	0.228	0.002	0.664
Target Public	0.064	0	0	0	0	1	0.067	0	0	0	0	1
Different Industry	0.453	0	0	1	0	1	0.470	0	0	1	0	1

Table 4 Correlations – Acquirer Internal Control Quality and Acquirer RNOA Sample

This table reports correlations for the sample used to test the association between acquirer internal control quality and post-acquisition RNOA for the acquirer. Panel A reports the sample in which Section 302 material weaknesses are used to measure an acquirer's internal control quality, whereas Panel B reports the sample in which Section 404 material weaknesses are used. Pearson correlations are presented in the upper, right triangle, Spearman correlations are presented in the lower, left triangle. Correlations significant at the 5% level or better are presented in bold. All variables are defined in Appendix B.

Table 4 Continued

Panel A		SOX 302 Sample									
		1	2	3	4	5	6	7	8	9	10
1	Acquirer Post-AQ RNOA	1	0.002 0.864	0.028 0.031	0.261 <0.001	-0.060 <0.001	0.333 <0.001	-0.302 <0.001	0.065 <0.001	-0.135 <0.001	-0.024 0.070
2	Acquirer Anndt BHARs	-0.004 0.758	1	0.066 <0.001	0.011 0.426	-0.003 0.804	-0.105 <0.001	0.024 0.069	0.034 0.010	0.000 0.999	-0.002 0.868
3	Acquirer Interim BHARs	0.034 0.011	0.146 <0.001	1	0.005 0.701	0.018 0.177	-0.054 <0.001	0.005 0.697	-0.001 0.965	0.019 0.144	0.034 0.009
4	Acquirer Post-AQ BHARs	0.298 <0.001	0.013 0.310	0.022 0.091	1	-0.029 0.028	-0.071 <0.001	0.020 0.127	-0.009 0.493	0.010 0.442	-0.045 0.001
5	Acquirers with MW(s)	-0.068 <0.001	-0.017 0.205	0.008 0.538	-0.020 0.128	1	-0.068 <0.001	0.006 0.637	-0.008 0.560	0.007 0.604	0.021 0.112
6	Natural Log AQ Market Cap	0.327 <0.001	-0.087 <0.001	-0.047 <0.001	-0.006 0.662	-0.067 <0.001	1	-0.344 <0.001	-0.073 <0.001	-0.147 <0.001	-0.057 <0.001
7	Acquirer Book-to-Market	-0.367 <0.001	0.020 0.138	0.018 0.178	0.011 0.414	0.006 0.631	-0.322 <0.001	1	-0.240 <0.001	0.104 <0.001	-0.147 <0.001
8	Announcement Momentum	0.116 <0.001	0.018 0.171	-0.008 0.531	0.003 0.817	-0.025 0.063	-0.014 0.289	-0.238 <0.001	1	0.017 0.195	0.035 0.008
9	Acquirer NOA	-0.195 <0.001	-0.001 0.963	-0.001 0.944	-0.014 0.302	-0.007 0.611	-0.146 <0.001	0.152 <0.001	0.029 0.027	1	0.392 <0.001
10	Acquirer Sales Growth	0.018 0.167	-0.001 0.937	0.032 0.017	-0.058 <0.001	0.028 0.033	-0.024 0.073	-0.191 <0.001	0.028 0.033	0.324 <0.001	1
11	Acquirer Total Accruals	-0.015 0.271	0.019 0.148	0.006 0.639	-0.050 <0.001	0.019 0.152	-0.093 <0.001	-0.081 <0.001	0.013 0.334	0.406 <0.001	0.470 <0.001
12	Only Stock Offer	-0.049 <0.001	-0.066 <0.001	-0.027 0.043	-0.031 0.017	-0.016 0.222	-0.030 0.024	-0.015 0.243	0.047 <0.001	-0.048 <0.001	-0.014 0.298
13	Hostile	-0.006 0.649	0.020 0.123	0.001 0.947	-0.006 0.669	-0.003 0.798	0.014 0.304	0.001 0.963	0.008 0.526	0.002 0.867	0.006 0.631
14	Small Acquirer	-0.192 <0.001	0.064 <0.001	0.031 0.020	0.013 0.310	0.051 <0.001	-0.641 <0.001	0.210 <0.001	-0.034 0.009	0.022 0.097	-0.034 0.009
15	Acquirer Cash	0.088 <0.001	0.003 0.796	0.011 0.392	0.008 0.554	0.043 0.001	-0.054 <0.001	-0.148 <0.001	-0.001 0.918	-0.571 <0.001	0.034 0.010
16	Target Public	-0.016 0.230	-0.070 <0.001	-0.025 0.063	-0.019 0.151	-0.018 0.174	0.123 <0.001	-0.023 0.076	0.019 0.160	-0.083 <0.001	-0.024 0.066
17	Different Industry	0.006 0.665	-0.036 0.006	0.005 0.701	-0.020 0.122	-0.021 0.114	0.145 <0.001	-0.008 0.527	-0.029 0.030	-0.082 <0.001	-0.054 <0.001
18	Acquirer Prior-AQ RNOA	0.383 <0.001	-0.007 0.619	0.002 0.892	0.017 0.212	-0.030 0.025	0.291 <0.001	-0.417 <0.001	-0.037 0.005	-0.123 <0.001	0.222 <0.001
19	Prior-AQ RNOA for Peer Portfolio	0.095 <0.001	-0.021 0.112	-0.003 0.838	-0.013 0.318	-0.061 <0.001	0.234 <0.001	-0.121 <0.001	-0.059 <0.001	-0.060 <0.001	0.099 <0.001
20	Post-AQ RNOA for Peer Portfolio	0.211 <0.001	-0.046 0.001	-0.032 0.016	-0.080 <0.001	-0.065 <0.001	0.328 <0.001	-0.145 <0.001	0.015 0.264	-0.095 <0.001	0.057 <0.001

Table 4 Continued

Panel A Continued		SOX 302 Sample									
		11	12	13	14	15	16	17	18	19	20
1	Acquirer Post-AQ RNOA	-0.019 0.161	-0.052 <0.001	-0.003 0.847	-0.207 <0.001	-0.002 0.903	-0.008 0.570	-0.003 0.823	0.339 <0.001	0.091 <0.001	0.161 <0.001
2	Acquirer Anndt BHARs	-0.004 0.754	-0.060 <0.001	0.012 0.359	0.092 <0.001	-0.011 0.401	-0.067 <0.001	-0.032 0.016	-0.025 0.063	-0.002 0.904	-0.033 0.012
3	Acquirer Interim BHARs	0.000 0.987	-0.018 0.165	0.008 0.535	0.025 0.058	0.017 0.206	0.007 0.613	-0.001 0.910	-0.014 0.300	-0.023 0.081	-0.016 0.217
4	Acquirer Post-AQ BHARs	-0.020 0.126	-0.027 0.045	-0.005 0.684	0.079 <0.001	-0.011 0.413	-0.018 0.176	-0.033 0.013	-0.004 0.754	-0.001 0.928	-0.073 <0.001
5	Acquirers with MW(s)	0.047 <0.001	-0.016 0.222	-0.003 0.798	0.051 <0.001	0.032 0.015	-0.018 0.174	-0.021 0.114	-0.011 0.400	-0.033 0.013	-0.043 0.001
6	Natural Log AQ Market Cap	-0.068 <0.001	-0.028 0.036	0.008 0.522	-0.616 <0.001	-0.112 <0.001	0.128 <0.001	0.145 <0.001	0.221 <0.001	0.115 <0.001	0.226 <0.001
7	Acquirer Book-to-Market	-0.083 <0.001	0.002 0.894	-0.004 0.737	0.278 <0.001	-0.101 <0.001	-0.023 0.082	-0.012 0.363	-0.292 <0.001	-0.065 <0.001	-0.136 <0.001
8	Announcement Momentum	-0.002 0.908	0.071 <0.001	0.003 0.817	0.022 0.089	0.014 0.300	0.017 0.199	-0.033 0.012	-0.074 <0.001	-0.053 <0.001	-0.011 0.405
9	Acquirer NOA	0.543 <0.001	-0.041 0.002	0.002 0.879	0.031 0.019	-0.489 <0.001	-0.066 <0.001	-0.072 <0.001	-0.113 <0.001	-0.033 0.0139	-0.073 <0.001
10	Acquirer Sales Growth	0.498 <0.001	0.002 0.864	0.001 0.915	0.009 0.480	0.088 <0.001	-0.027 0.043	-0.063 <0.001	0.151 <0.001	0.039 0.003	0.029 0.03
11	Acquirer Total Accruals	1 0.303	-0.014 0.303	-0.001 0.955	0.028 0.037	0.061 <0.001	-0.032 0.016	-0.080 <0.001	0.226 <0.001	0.064 <0.001	0.045 0.001
12	Only Stock Offer	-0.031 0.018	1 0.852	-0.002 0.852	0.035 0.008	0.061 <0.001	0.265 <0.001	-0.019 0.142	-0.072 <0.001	-0.025 0.060	-0.006 0.627
13	Hostile	0.007 0.613	-0.002 0.852	1 0.528	-0.008 0.528	-0.011 0.389	0.072 <0.001	0.001 0.912	0.000 0.973	0.010 0.467	-0.001 0.957
14	Small Acquirer	0.012 0.364	0.035 0.008	-0.008 0.528	1 0.528	0.088 <0.001	-0.069 <0.001	-0.007 0.602	-0.141 <0.001	-0.182 <0.001	-0.284 <0.001
15	Acquirer Cash	-0.076 <0.001	0.052 <0.001	-0.010 0.470	0.042 0.002	1 0.002	0.060 <0.001	-0.059 <0.001	0.207 <0.001	0.034 0.011	0.082 <0.001
16	Target Public	-0.033 0.013	0.265 <0.001	0.072 <0.001	-0.069 <0.001	0.063 <0.001	1 0.157	-0.019 0.157	0.022 0.098	-0.001 0.918	0.043 0.001
17	Different Industry	-0.070 <0.001	-0.019 0.142	0.001 0.912	-0.007 0.602	-0.041 0.002	-0.019 0.157	1 0.157	-0.011 0.410	-0.057 <0.001	-0.070 <0.001
18	Acquirer Prior-AQ RNOA	0.264 <0.001	-0.087 <0.001	0.006 0.637	-0.178 <0.001	0.188 <0.001	0.017 0.207	0.009 0.516	1 0.516	0.124 <0.001	0.122 <0.001
19	Prior-AQ RNOA for Peer Portfolio	0.059 <0.001	-0.026 0.053	0.017 0.204	-0.239 <0.001	0.089 <0.001	0.014 0.305	-0.059 <0.001	0.190 <0.001	1 0.305	0.398 <0.001
20	Post-AQ RNOA for Peer Portfolio	0.005 0.706	0.002 0.873	0.001 0.952	-0.337 <0.001	0.108 <0.001	0.054 <0.001	-0.038 0.004	0.144 <0.001	0.493 <0.001	1 0.493

Table 4 Continued

Panel B		SOX 404 Sample									
		1	2	3	4	5	6	7	8	9	10
1	Acquirer Post-AQ RNOA	1	0.019 0.297	0.043 0.018	0.256 <0.001	-0.070 <0.001	0.373 <0.001	-0.405 <0.001	0.072 <0.001	-0.207 <0.001	-0.026 0.155
2	Acquirer Anndt BHARs	0.023 0.193	1	0.077 <0.001	0.030 0.093	-0.003 0.859	-0.086 <0.001	0.008 0.677	-0.010 0.596	-0.005 0.774	-0.008 0.665
3	Acquirer Interim BHARs	0.038 0.036	0.152 <0.001	1	-0.059 0.001	0.029 0.102	-0.044 0.015	0.013 0.472	0.028 0.114	0.035 0.050	0.011 0.529
4	Acquirer Post-AQ BHARs	0.302 <0.001	0.034 0.056	-0.029 0.102	1	-0.049 0.006	-0.014 0.431	-0.007 0.680	0.016 0.382	-0.019 0.293	-0.050 0.006
5	Acquirers with MW(s)	-0.084 <0.001	-0.025 0.161	0.010 0.560	-0.050 0.006	1	-0.068 <0.001	0.032 0.078	0.005 0.777	-0.041 0.021	0.019 0.280
6	Natural Log AQ Market Cap	0.373 <0.001	-0.073 <0.001	-0.021 0.255	0.030 0.096	-0.081 <0.001	1	-0.356 <0.001	0.033 0.064	-0.176 <0.001	-0.055 0.002
7	Acquirer Book-to-Market	-0.460 <0.001	0.000 0.994	0.010 0.573	-0.039 0.030	0.049 0.007	-0.371 <0.001	1	-0.312 <0.001	0.162 <0.001	-0.141 <0.001
8	Announcement Momentum	0.110 <0.001	-0.011 0.531	0.007 0.699	0.047 0.009	-0.015 0.402	0.073 <0.001	-0.302 <0.001	1	0.021 0.237	0.066 <0.001
9	Acquirer NOA	-0.268 <0.001	0.003 0.887	-0.009 0.603	-0.053 0.003	-0.049 0.007	-0.186 <0.001	0.194 <0.001	0.031 0.083	1	0.379 <0.001
10	Acquirer Sales Growth	0.021 0.234	0.000 0.985	0.021 0.254	-0.066 <0.001	0.001 0.950	-0.035 0.052	-0.175 <0.001	0.073 <0.001	0.311 <0.001	1
11	Acquirer Total Accruals	-0.028 0.115	0.029 0.107	-0.006 0.732	-0.057 0.002	0.005 0.785	-0.116 <0.001	-0.071 <0.001	0.016 0.374	0.372 <0.001	0.512 <0.001
12	Only Stock Offer	-0.049 0.007	-0.037 0.041	-0.023 0.210	-0.006 0.728	0.025 0.168	-0.029 0.104	-0.030 0.098	0.035 0.053	-0.032 0.072	0.048 0.008
13	Hostile	0.003 0.864	0.025 0.174	0.025 0.171	0.015 0.406	-0.005 0.792	0.010 0.585	0.001 0.973	0.005 0.775	-0.022 0.228	-0.010 0.563
14	Small Acquirer	-0.201 <0.001	0.065 <0.001	0.007 0.710	0.011 0.542	0.077 <0.001	-0.530 <0.001	0.255 <0.001	-0.112 <0.001	0.033 0.065	-0.065 <0.001
15	Acquirer Cash	0.144 <0.001	0.001 0.936	0.004 0.823	0.039 0.030	0.039 0.031	-0.004 0.811	-0.169 <0.001	-0.009 0.610	-0.625 <0.001	0.030 0.095
16	Target Public	0.005 0.800	-0.042 0.018	-0.018 0.312	0.009 0.600	-0.016 0.362	0.132 <0.001	-0.050 0.005	0.039 0.031	-0.087 <0.001	0.009 0.610
17	Different Industry	0.011 0.548	-0.038 0.035	0.004 0.821	-0.028 0.117	0.007 0.708	0.151 <0.001	0.001 0.935	-0.041 0.023	-0.040 0.026	-0.040 0.027
18	Acquirer Prior-AQ RNOA	0.432 <0.001	-0.001 0.949	-0.017 0.352	0.021 0.240	-0.092 <0.001	0.299 <0.001	-0.474 <0.001	0.000 0.986	-0.256 <0.001	0.191 <0.001
19	Prior-AQ RNOA for Peer Portfolio	0.098 <0.001	-0.015 0.405	-0.005 0.764	0.019 0.294	-0.112 <0.001	0.168 <0.001	-0.137 <0.001	0.032 0.077	-0.111 <0.001	0.084 <0.001
20	Post-AQ RNOA for Peer Portfolio	0.202 <0.001	-0.046 0.010	-0.010 0.563	-0.027 0.127	-0.051 0.004	0.273 <0.001	-0.179 <0.001	0.053 0.003	-0.093 <0.001	0.112 <0.001

Table 4 Continued

Panel B Continued		SOX 404 Sample									
		11	12	13	14	15	16	17	18	19	20
1	Acquirer Post-AQ RNOA	-0.039 0.029	-0.058 0.001	0.002 0.928	-0.208 <0.001	0.058 0.001	0.004 0.806	-0.001 0.971	0.325 <0.001	0.044 0.015	0.150 <0.001
2	Acquirer Anndt BHARs	0.009 0.626	-0.038 0.033	0.017 0.344	0.098 <0.001	-0.008 0.664	-0.047 0.009	-0.028 0.116	-0.019 0.299	0.000 0.997	-0.031 0.088
3	Acquirer Interim BHARs	0.003 0.871	-0.037 0.039	0.013 0.464	0.039 0.029	-0.014 0.451	0.007 0.686	0.006 0.751	-0.013 0.472	-0.011 0.533	0.005 0.774
4	Acquirer Post-AQ BHARs	-0.025 0.160	0.002 0.925	0.009 0.625	0.053 0.003	0.022 0.214	0.010 0.595	-0.021 0.250	-0.003 0.866	0.006 0.741	-0.026 0.155
5	Acquirers with MW(s)	0.022 0.223	0.025 0.168	-0.005 0.792	0.077 <0.001	0.039 0.029	-0.016 0.362	0.007 0.708	-0.034 0.059	-0.057 0.001	-0.018 0.306
6	Natural Log AQ Market Cap	-0.089 <0.001	-0.030 0.095	0.005 0.796	-0.487 <0.001	-0.065 <0.001	0.136 <0.001	0.148 <0.001	0.212 <0.001	0.064 <0.001	0.152 <0.001
7	Acquirer Book-to-Market	-0.044 0.015	-0.017 0.346	-0.004 0.805	0.314 <0.001	-0.123 <0.001	-0.051 0.005	0.003 0.858	-0.347 <0.001	-0.075 <0.001	-0.157 <0.001
8	Announcement Momentum	-0.006 0.747	0.043 0.016	0.002 0.927	-0.102 <0.001	-0.033 0.067	0.035 0.049	-0.051 0.005	-0.022 0.223	0.031 0.082	0.041 0.023
9	Acquirer NOA	0.502 <0.001	-0.018 0.326	-0.017 0.344	0.023 0.1994	-0.524 <0.001	-0.075 <0.001	-0.044 0.014	-0.277 <0.001	-0.045 0.013	-0.061 0.001
10	Acquirer Sales Growth	0.558 <0.001	0.086 <0.001	-0.009 0.614	-0.033 0.065	0.121 <0.001	0.004 0.823	-0.070 <0.001	0.177 <0.001	0.063 0.001	0.087 <0.001
11	Acquirer Total Accruals	1 0.018 0.317	0.031 0.080	-0.006 0.740	0.021 0.236	0.090 <0.001	-0.023 0.202	-0.090 <0.001	0.208 <0.001	0.054 0.003	0.065 <0.001
12	Only Stock Offer	0.018 0.317	1 0.919	-0.002 0.919	0.028 0.126	0.091 <0.001	0.219 <0.001	-0.034 0.057	0.017 0.343	-0.007 0.712	-0.029 0.108
13	Hostile	-0.005 0.796	-0.002 0.919	1 0.919	-0.006 0.732	-0.013 0.486	0.068 <0.001	-0.017 0.337	0.001 0.940	-0.003 0.856	0.001 0.973
14	Small Acquirer	0.006 0.729	0.028 0.126	-0.006 0.732	1 0.916	0.042 0.020	-0.056 0.002	-0.005 0.7743	-0.123 <0.001	-0.142 <0.001	-0.252 <0.001
15	Acquirer Cash	-0.060 0.001	0.069 <0.001	-0.015 0.412	0.002 0.916	1 <0.001	0.087 <0.001	-0.074 <0.001	0.437 <0.001	0.087 <0.001	0.110 <0.001
16	Target Public	-0.016 0.367	0.219 <0.001	0.068 <0.001	-0.056 0.002	0.095 <0.001	1 <0.001	-0.041 0.024	0.056 0.002	0.009 0.636	0.040 0.028
17	Different Industry	-0.054 0.003	-0.034 0.057	-0.017 0.337	-0.005 0.774	-0.051 0.005	-0.041 0.024	1 <0.001	-0.037 0.041	-0.063 0.001	-0.096 <0.001
18	Acquirer Prior-AQ RNOA	0.221 <0.001	-0.033 0.065	0.012 0.522	-0.159 <0.001	0.298 <0.001	0.044 0.015	0.003 0.868	1 <0.001	0.129 <0.001	0.140 <0.001
19	Prior-AQ RNOA for Peer Portfolio	0.034 0.061	0.004 0.845	-0.011 0.556	-0.186 <0.001	0.152 <0.001	0.038 0.035	-0.073 <0.001	0.170 <0.001	1 <0.001	0.401 <0.001
20	Post-AQ RNOA for Peer Portfolio	0.038 0.033	-0.022 0.216	0.006 0.734	-0.282 <0.001	0.130 <0.001	0.055 0.002	-0.053 0.003	0.173 <0.001	0.537 <0.001	1

Table 5 Regression Results – Acquirer RNOA on Acquirer Internal Control Quality

This table reports the results of regressing the acquirer post-acquisition RNOA on the acquirer's internal control quality and control variables. I report ordinary least squares regression results (p-values are adjusted for clustered standard errors, clustered on acquiring firm and year) and robust regression results (Huber 1973). I report the results of regression based on two different measures of RNOA peer portfolio control variables. The left columns report results when the RNOA peer portfolio control variables are calculated using a matching sample of peer firms, matched on industry, existence of a material weakness in the period just prior to the announcement date, and size (Matching Method A). The right columns report results when the RNOA peer portfolio control variables are calculated by forming a portfolio of peer firms matched on industry, existence of a material weakness in the period just prior to the announcement date, and the number of days a material weakness remains outstanding (Matching Method B). Panel A reports the results where internal control quality at the acquirer is measured using Section 302 material weaknesses, and Panel B reports the results using Section 404 material weaknesses to measure acquirer internal control quality. All variables are defined in Appendix B or as described above. Year dummies are not shown. P-values presented are two-tailed except for p-values for the hypothesized variable which are one-tailed. P-values are presented in bold if significant at the 5% level or better.

Panel A

Dependent Variable=Acquirer Post-AQ RNOA			Section 302 - Matching Method A				Section 302 - Matching Method B			
			Clustered		Robust		Clustered		Robust	
Variable	Predicted Sign		estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Acquirer with MW(s)	-	(H1)	-0.017	0.083	-0.026	0.001	-0.028	0.024	-0.040	<0.001
Natural Log AQ Market Cap	-		0.019	<0.001	0.014	<0.001	0.019	<0.001	0.014	<0.001
Acquirer Book-to-Market	+		-0.095	<0.001	-0.066	<0.001	-0.090	<0.001	-0.064	<0.001
Announcement Momentum	-		0.033	0.003	0.038	<0.001	0.041	<0.001	0.046	<0.001
Acquirer NOA	-		-0.035	0.002	-0.053	<0.001	-0.041	0.001	-0.059	<0.001
Acquirer Sales Growth	-		-0.016	0.082	-0.017	0.014	-0.017	0.040	-0.017	0.015
Acquirer Total Accruals	-		-0.016	0.508	-0.005	0.662	-0.006	0.799	0.003	0.747
Only Stock Offer	-		-0.035	0.033	-0.036	0.002	-0.034	0.059	-0.042	<0.001
Hostile	+		-0.045	<0.001	-0.060	0.440	-0.047	<0.001	-0.058	0.464
Small Acquirer	+		0.022	0.064	0.017	0.001	0.013	0.317	0.006	0.213
Acquirer Cash	-		-0.091	0.001	-0.098	<0.001	-0.088	0.001	-0.101	<0.001
Target Public	-		-0.030	0.004	-0.024	<0.001	-0.030	0.008	-0.023	<0.001
Different Industry	-		-0.014	0.017	-0.007	0.018	-0.016	0.005	-0.009	0.002
Acquirer Prior-AQ RNOA	+		0.213	<0.001	0.357	<0.001	0.213	<0.001	0.353	<0.001
Prior-AQ RNOA for Peer Portfolio	+		0.007	0.390	0.008	0.010	0.001	0.680	0.000	0.708
Post-AQ RNOA for Peer Portfolio	+		0.018	0.105	0.019	<0.001	-0.003	0.849	-0.009	0.091
Intercept			-0.137	0.005	-0.088	<0.001	-0.107	0.035	-0.043	0.018
n			5,731		5,731		5,749		5,749	
Adj R-Squared			25.7%		20.0%		25.1%		19.8%	

Table 5 Continued

Dependent Variable=Acquirer Post-AQ RNOA			Section 404 - Matching Method A				Section 404 - Matching Method B			
			Clustered		Robust		Clustered		Robust	
Variable	Predicted Sign		estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Acquirer with MW(s)	-	(H1)	-0.028	0.009	-0.038	<0.001	-0.027	0.018	-0.037	<0.001
Natural Log AQ Market Cap	-		0.018	<0.001	0.014	<0.001	0.019	<0.001	0.014	<0.001
Acquirer Book-to-Market	+		-0.163	<0.001	-0.141	<0.001	-0.162	<0.001	-0.142	<0.001
Announcement Momentum	-		0.008	0.696	0.003	0.755	0.009	0.627	0.003	0.723
Acquirer NOA	-		-0.060	0.004	-0.092	<0.001	-0.060	0.002	-0.091	<0.001
Acquirer Sales Growth	-		-0.031	0.204	-0.014	0.225	-0.031	0.199	-0.010	0.378
Acquirer Total Accruals	-		0.014	0.601	0.047	0.003	0.014	0.551	0.046	0.004
Only Stock Offer	-		-0.059	0.064	-0.083	<0.001	-0.058	0.053	-0.089	<0.001
Hostile	+		-0.052	<0.001	-0.076	0.455	-0.056	0.004	-0.082	0.426
Small Acquirer	+		0.013	0.284	0.007	0.298	0.010	0.350	0.001	0.882
Acquirer Cash	-		-0.106	0.020	-0.109	<0.001	-0.099	0.017	-0.100	<0.001
Target Public	-		-0.027	0.058	-0.017	0.025	-0.025	0.082	-0.016	0.040
Different Industry	-		-0.013	0.022	-0.005	0.188	-0.013	0.030	-0.007	0.084
Acquirer Prior-AQ RNOA	+		0.153	<0.001	0.262	<0.001	0.157	<0.001	0.265	<0.001
Prior-AQ RNOA for Peer Portfolio	+		-0.010	0.152	0.001	0.917	0.010	0.370	0.003	0.376
Post-AQ RNOA for Peer Portfolio	+		0.021	0.005	0.032	<0.001	0.001	0.969	0.000	0.986
Intercept			-0.054	0.355	-0.010	0.662	-0.066	0.256	-0.011	0.628
n			3,087		3,087		3,092		3,092	
Adj R-Squared			29.5%		25.4%		29.6%		25.0%	

Table 6 Regression Results – Acquirer Announcement Period Returns on Acquirer Internal Control Quality

This table reports the results of regressing the acquirer announcement period abnormal returns on the acquirer's internal control quality and control variables. I report ordinary least squares regression results (p-values are adjusted for clustered standard errors, clustered on acquiring firm and year) and robust regression results (Huber 1973). I report the results of regression based on two different measures of abnormal returns. The left columns report results when acquirer BHARs are calculated by adjusting acquirer buy-and-hold returns with a matching sample of peer firms, matched on industry, existence of a MW in the period just prior to the announcement date, and size (Matching Method A). The right columns report the results when acquirer BHARs are calculated using a matching sample of peer firms matched on industry, existence of a material weakness in the period just prior to the announcement date, and the number of days a MW remains outstanding (Matching Method B). Panel A reports the results where internal control quality at the acquirer is measured using Section 302 material weaknesses, and Panel B reports the results using Section 404 material weaknesses to measure acquirer internal control quality. All variables are defined in Appendix B. Year dummies are not shown. P-values presented are two-tailed except for p-values for the hypothesized variable which are one-tailed. P-values are presented in bold if significant at the 5% level or better.

Panel A

Dependent Variable=Acquirer Announcement BHARs			Section 302 - Matching Method A				Section 302 - Matching Method B			
			Clustered		Robust		Clustered		Robust	
Variable	Sign	Predicted	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Acquirer with MW(s)	-	(H2)	-0.005	<0.001	-0.008	0.009	-0.005	0.055	-0.006	0.048
Natural Log AQ Market Cap	-		-0.003	<0.001	-0.002	<0.001	-0.003	<0.001	-0.002	<0.001
Acquirer Book-to-Market	+		-0.002	0.418	-0.003	0.195	-0.005	0.092	-0.005	0.037
Announcement Momentum	-		0.007	0.193	0.001	0.687	0.003	0.723	-0.003	0.262
Acquirer NOA	-		-0.006	0.052	-0.005	0.046	-0.004	0.200	-0.002	0.426
Acquirer Sales Growth	-		-0.002	0.671	-0.001	0.756	-0.001	0.762	0.001	0.774
Acquirer Total Accruals	-		0.002	0.513	0.004	0.276	0.000	0.959	0.002	0.552
Only Stock Offer	-		-0.016	0.007	-0.020	<0.001	-0.019	<0.001	-0.021	<0.001
Hostile	+		0.022	0.457	0.025	0.376	0.048	0.181	0.056	0.071
Small Acquirer	+		0.007	0.060	0.004	0.031	0.007	0.083	0.005	0.024
Acquirer Cash	-		-0.020	0.066	-0.006	0.176	-0.020	0.052	-0.009	0.052
Target Public	-		-0.012	0.012	-0.008	0.001	-0.011	0.003	-0.009	0.001
Different Industry	-		-0.001	0.717	-0.002	0.208	-0.001	0.576	-0.002	0.184
Intercept			0.060	<0.001	0.035	<0.001	0.061	<0.001	0.036	<0.001
n			7,751		7,751		7,773		7,773	
Adj R-Squared			1.7%		0.2%		1.7%		0.3%	

Panel B

Dependent Variable=Acquirer Announcement BHARs			Section 404 - Matching Method A				Section 404 - Matching Method B			
			Clustered		Robust		Clustered		Robust	
Variable	Sign	Predicted	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Acquirer with MW(s)	-	(H2)	-0.004	0.079	-0.006	0.016	-0.004	0.196	-0.005	0.059
Natural Log AQ Market Cap	-		-0.002	<0.001	-0.001	0.013	-0.003	0.001	-0.002	0.001
Acquirer Book-to-Market	+		-0.011	<0.001	-0.009	0.014	-0.016	<0.001	-0.014	<0.001
Announcement Momentum	-		0.000	0.947	-0.003	0.397	-0.007	0.245	-0.008	0.034
Acquirer NOA	-		-0.007	0.188	-0.005	0.254	-0.006	0.017	-0.003	0.434
Acquirer Sales Growth	-		-0.003	0.408	-0.002	0.603	-0.003	0.579	0.001	0.908
Acquirer Total Accruals	-		0.006	0.194	0.008	0.152	0.000	0.958	0.005	0.441
Only Stock Offer	-		-0.009	0.337	-0.014	0.041	-0.013	0.105	-0.023	0.002
Hostile	+		0.062	<0.001	0.063	0.186	0.064	<0.001	0.067	0.172
Small Acquirer	+		0.010	0.034	0.005	0.059	0.011	0.001	0.004	0.192
Acquirer Cash	-		-0.023	0.220	-0.011	0.105	-0.021	0.092	-0.010	0.164
Target Public	-		-0.006	0.193	-0.003	0.265	-0.006	0.183	-0.005	0.125
Different Industry	-		-0.001	0.009	-0.001	0.504	0.000	0.604	0.000	0.933
Intercept			0.054	<0.001	0.032	0.001	0.060	<0.001	0.039	<0.001
n			4,060		4,060		4,064		4,064	
Adj R-Squared			0.9%		0.6%		1.1%		0.4%	

Table 7 Regression Results – Acquirer Interim Period Returns on Acquirer Internal Control Quality

This table reports the results of regressing the acquirer interim period abnormal returns on the acquirer's internal control quality and control variables. I report ordinary least squares regression results (p-values are adjusted for clustered standard errors, clustered on acquiring firm and year) and robust regression results (Huber 1973). I report the results of regression based on two different measures of abnormal returns. The left columns report results when acquirer BHARs are calculated by adjusting acquirer buy-and-hold returns with a matching sample of peer firms, matched on industry, existence of a MW in the period just prior to the announcement date, and size (Matching Method A). The right columns report the results when acquirer BHARs are calculated using a matching sample of peer firms matched on industry, existence of a material weakness in the period just prior to the announcement date, and the number of days a MW remains outstanding (Matching Method B). Panel A reports the results where internal quality at the acquirer is measured using Section 302 material weaknesses, and Panel B reports the results using Section 404 material weaknesses to measure acquirer internal control quality. All variables are defined Appendix B. Year dummies are not shown. P-values presented are two-tailed except for p-values for the hypothesized variable which are one-tailed. P-values are presented in bold if significant at the 5% level or better.

Panel A

Dependent Variable=Acquirer Interim BHARs		Section 302 - Matching Method A				Section 302 - Matching Method B			
		Clustered		Robust		Clustered		Robust	
Variable	Predicted Sign	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Acquirer with MW(s)	- (H3)	-0.002	0.461	-0.004	0.078	0.007	0.290	-0.001	0.379
Natural Log AQ Market Cap	-	-0.003	0.001	-0.001	0.071	-0.002	<0.001	-0.001	0.047
Acquirer Book-to-Market	+	0.006	0.295	0.003	0.128	0.005	0.492	-0.001	0.683
Announcement Momentum	-	-0.010	0.015	-0.004	0.045	-0.009	0.004	-0.005	0.023
Acquirer NOA	-	0.008	0.416	-0.003	0.253	0.002	0.820	-0.002	0.471
Acquirer Sales Growth	-	0.003	0.608	0.004	0.084	-0.003	0.814	0.001	0.551
Acquirer Total Accruals	-	-0.009	0.036	0.003	0.354	0.005	0.585	-0.002	0.521
Only Stock Offer	-	-0.034	0.134	-0.019	<0.001	-0.014	0.578	0.002	0.646
Hostile	+	0.631	0.237	0.643	<0.001	0.571	0.305	0.572	<0.001
Small Acquirer	+	-0.006	0.397	0.001	0.526	0.000	0.963	0.000	0.998
Acquirer Cash	-	0.015	0.319	-0.001	0.707	0.002	0.866	-0.004	0.334
Target Public	-	0.008	0.425	-0.014	<0.001	-0.002	0.838	-0.005	0.035
Different Industry	-	0.003	0.395	0.001	0.219	0.004	0.248	0.001	0.313
Intercept		0.026	0.003	0.009	0.157	0.017	0.156	0.015	0.029
n		7,751		7,751		7,773		7,773	
Adj R-Squared		1.6%		0.3%		1.0%		0.6%	

Panel B

Dependent Variable=Acquirer Interim BHARs			Section 404 - Matching Method A				Section 404 - Matching Method B			
			Clustered		Robust		Clustered		Robust	
Predicted										
Variable	Sign		estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Acquirer with MW(s)	-	(H3)	0.006	0.332	-0.001	0.302	0.007	0.322	-0.003	0.165
Natural Log AQ Market Cap	-		-0.001	0.278	-0.001	0.256	-0.001	0.122	0.000	0.312
Acquirer Book-to-Market	+		0.002	0.452	0.001	0.777	-0.002	0.798	-0.002	0.608
Announcement Momentum	-		0.000	0.967	-0.003	0.405	0.001	0.915	-0.007	0.023
Acquirer NOA	-		0.006	0.643	-0.006	0.080	0.003	0.857	-0.002	0.495
Acquirer Sales Growth	-		0.001	0.973	0.003	0.416	0.001	0.955	0.007	0.059
Acquirer Total Accruals	-		0.011	0.284	0.006	0.213	0.008	0.446	-0.007	0.155
Only Stock Offer	-		-0.057	0.126	-0.024	<0.001	-0.050	0.256	-0.028	<0.001
Hostile	+		0.076	<0.001	0.083	0.037	0.104	<0.001	0.109	0.010
Small Acquirer	+		0.010	0.240	0.001	0.760	0.010	0.039	0.001	0.570
Acquirer Cash	-		-0.004	0.845	-0.004	0.510	-0.020	0.381	0.001	0.937
Target Public	-		0.001	0.936	-0.016	<0.001	-0.005	0.531	-0.016	<0.001
Different Industry	-		0.003	0.675	0.001	0.288	0.002	0.666	0.002	0.162
Intercept			0.008	0.398	0.010	0.210	0.022	0.362	0.009	0.263
n			4,060		4,060		4,064		4,064	
Adj R-Squared			0.5%		0.9%		0.7%		0.7%	

Table 8 Regression Results – Acquirer Post-Acquisition Returns on Acquirer Internal Control Quality

This table reports the results of regressing the acquirer post-acquisition period abnormal returns on the acquirer's internal control quality and control variables. I report ordinary least squares regression results (p-values are adjusted for clustered standard errors, clustered on acquiring firm and year) and robust regression results (Huber 1973). I report the results of regression based on two different measures of abnormal returns. The left columns report results when acquirer BHARs are calculated by adjusting acquirer buy-and-hold returns with a matching sample of peer firms, matched on industry, existence of a MW in the period just prior to the announcement date, and size (Matching Method A). The right columns report the results when acquirer BHARs are calculated using a matching sample of peer firms matched on industry, existence of a material weakness in the period just prior to the announcement date, and the number of days a MW remains outstanding (Matching Method B). Panel A reports the results where internal quality at the acquirer is measured using Section 302 material weaknesses, and Panel B reports the results using Section 404 material weaknesses to measure acquirer internal control quality. All variables are defined in Appendix B. Year dummies are not shown. P-values presented are two-tailed except for p-values for the hypothesized variable which are one-tailed. P-values are presented in bold if significant at the 5% level or better.

Panel A

Dependent Variable=Acquirer Post-AQ BHARs		Section 302 - Matching Method A				Section 302 - Matching Method B			
		Clustered		Robust		Clustered		Robust	
Variable	Predicted Sign	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Acquirer with MW(s)	- (H4)	-0.095	0.039	-0.045	0.069	-0.121	<0.001	-0.093	0.002
Natural Log AQ Market Cap	-	-0.009	0.439	-0.001	0.878	-0.001	0.918	0.007	0.080
Acquirer Book-to-Market	+	-0.011	0.793	0.034	0.138	0.017	0.781	0.030	0.184
Announcement Momentum	-	-0.043	0.365	-0.027	0.208	-0.005	0.923	-0.026	0.226
Acquirer NOA	-	0.063	0.324	0.016	0.524	-0.013	0.869	-0.034	0.182
Acquirer Sales Growth	-	-0.106	0.103	-0.150	<0.001	-0.092	0.113	-0.159	<0.001
Acquirer Total Accruals	-	-0.044	0.419	0.003	0.923	-0.038	0.522	0.007	0.829
Only Stock Offer	-	-0.093	0.150	-0.073	0.062	-0.146	0.002	-0.092	0.019
Hostile	+	0.017	0.936	0.101	0.714	-0.023	0.927	0.111	0.689
Small Acquirer	+	0.018	0.643	-0.103	<0.001	0.006	0.838	-0.126	<0.001
Acquirer Cash	-	-0.012	0.911	-0.062	0.143	-0.096	0.554	-0.101	0.017
Target Public	-	-0.028	0.340	-0.023	0.319	-0.009	0.623	-0.011	0.652
Different Industry	-	-0.041	0.014	-0.021	0.053	-0.030	0.041	-0.023	0.038
Intercept		-0.043	0.823	-0.143	0.034	-0.119	0.575	-0.210	0.002
n		7,751		7,751		7,773		7,773	
Adj R-Squared		1.0%		1.3%		1.8%		2.9%	

Panel B

Dependent Variable=Acquirer Post-AQ BHARs		Section 404 - Matching Method A				Section 404 - Matching Method B			
		Clustered		Robust		Clustered		Robust	
Variable	Predicted Sign	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Acquirer with MW(s)	- (H4)	-0.080	0.205	-0.039	0.066	-0.082	0.055	-0.051	0.019
Natural Log AQ Market Cap	-	0.001	0.935	0.004	0.332	0.012	0.166	0.010	0.026
Acquirer Book-to-Market	+	-0.008	0.906	-0.026	0.417	-0.067	0.442	-0.119	<0.001
Announcement Momentum	-	-0.013	0.870	-0.005	0.879	-0.030	0.721	-0.061	0.049
Acquirer NOA	-	0.086	0.254	0.002	0.959	0.065	0.519	0.023	0.487
Acquirer Sales Growth	-	-0.116	0.156	-0.148	<0.001	-0.073	0.391	-0.116	0.002
Acquirer Total Accruals	-	-0.053	0.303	0.032	0.533	-0.084	0.170	-0.038	0.435
Only Stock Offer	-	0.072	0.402	0.010	0.871	0.042	0.693	-0.001	0.984
Hostile	+	0.228	<0.001	0.219	0.600	-0.086	0.041	-0.062	0.877
Small Acquirer	+	0.022	0.603	-0.036	0.139	0.022	0.640	-0.067	0.004
Acquirer Cash	-	0.145	0.372	-0.033	0.574	0.013	0.959	-0.090	0.103
Target Public	-	-0.015	0.695	-0.007	0.808	0.029	0.179	0.023	0.379
Different Industry	-	-0.014	0.315	-0.020	0.135	-0.010	0.551	-0.027	0.034
Intercept		-0.264	0.197	-0.218	0.008	-0.374	0.110	-0.254	0.001
n		4,060		4,060		4,064		4,064	
Adj R-Squared		1.7%		0.9%		2.4%		2.4%	

Table 9 Regression Results – Acquirer RNOA and Post-Acquisition Returns on Internal Control Quality – Additional Analyses

This table reports the results of regressing 1) the acquirer post-acquisition RNOA and 2) the acquirer post-acquisition period abnormal returns on three different measures of the acquirer's internal control quality (and control variables). I report robust regression results (Huber 1973) for three different models. In the first model, the definition of "Acquirer with MW(s)" is as in Appendix B. For RNOA (abnormal returns), these regression results appear in Table 5 (Table 8) and are presented here as well for ease of comparison. In the second model, the "Acquirer with MW(s)" is as defined in Appendix B with the additional restriction that the material weakness must continue to be reported on periodic SEC filings through at least the effective date of the deal, else 0. In the third model, "Acquirer with MW(s)" is as before, but the material weakness(s) must continue to be reported at least one year past the deal effective date, else 0. Panel A reports the results where internal control quality at the acquirer is measured using Section 302 material weaknesses, and Panel B reports the results using Section 404 material weaknesses to measure acquirer internal control quality. All variables are defined in Appendix B or as described above. The portfolio of matching firms used to calculate RNOA control variables and used to calculate abnormal buy-and-hold returns is formed by matching industry, existence of a material weakness in the year before the announcement date, and the number of days a material weakness remains outstanding (Matching Method B). Year dummies are not shown. Control variables are consistent with those reported in Table 5 and Table 8 and are omitted here for ease of presentation (available upon request). P-values presented are one-tailed and presented in bold if significant at the 5% level or better.

Panel A - Section 302

Panel A - Section 502

Variable	Predicted Sign	Model 1 (from Table 5 and Table 8)		I/C weakness continues to at least effective date		I/C weakness continues to at least 1 year past effective date	
		estimate	p-value	estimate	p-value	estimate	p-value
<u>Dependent Variable=Acquirer Post-AQ RNOA</u>							
Acquirer with MW(s)	- (H1)	-0.040	<0.001	-0.049	<0.001	-0.129	<0.001
Control Variables Consistent with Table 5							
n		5,749		5,749		5,749	
Adj R-Squared		19.8%		20.0%		20.1%	

Dependent Variable=Acquirer Post-AQ BHARs

Acquirer with MW(s)	- (H4)	-0.093	0.002	-0.091	0.002	-0.136	0.007
Control Variables Consistent with Table 8							
n		7,773		7,773		7,773	
Adj R-Squared		2.9%		2.9%		2.9%	

Table 9 Continued**Panel B - Section 404**

			Model 1 (from Table 5 and Table 8)		I/C weakness continues to at least effective date		I/C weakness continues to at least 1 year past effective date	
Variable	Predicted Sign		estimate	p-value	estimate	p-value	estimate	p-value
<u>Dependent Variable=Acquirer Post-AQ RNOA</u>								
Acquirer with MW(s)	-	(H1)	-0.037	<0.001	-0.034	<0.001	-0.094	<0.001
Control Variables Consistent with Table 5								
n			3,092		3,092		3,092	
Adj R-Squared			25.0%		25.0%		25.1%	
<u>Dependent Variable=Acquirer Post-AQ BHARs</u>								
Acquirer with MW(s)	-	(H4)	-0.051	0.019	-0.053	0.019	0.079	0.039
Control Variables Consistent with Table 8								
n			4,064		4,064		4,064	
Adj R-Squared			2.4%		2.4%		2.4%	

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APPENDIX A

EXAMPLES OF SECTIONS 302 AND 404 MATERIAL WEAKNESS DISCLOSURES

The following is an example of a Section 302 material weakness disclosure from an acquiring firm taken from my sample used for testing. This disclosure was made by IXYS Corporation, a company that designs, develops, manufactures, and markets high power semiconductors. The following is directly quoted from “Item 4 - Controls and Procedures” within the company’s June 30, 2003 Form 10-Q, filed on August 14, 2003. The company describes the following material weaknesses in internal controls:

- *Financial statement consolidations that place a great strain on the limited personnel resources of our finance organization, resulting in inadequate time for management to perform its financial review on a timely basis;*
- *deficiencies in our inventory accounting, including the need to establish, compute and adequately update standard inventory costs, completely eliminate intercompany profits, track inventory variances and establish a formal policy to reconcile and review inventory balances, as well as inadequate monthly reconciliations of the general ledger with the inventory subsystem and insufficient review by management of such reconciliations;*
- *problems with the monthly close at our subsidiaries, particularly in its timing, procedures and the content of the reports prepared, and limited personnel resources, resulting in inadequate time for review by our finance management and for adjustment prior to the audit; and*
- *several additional conditions relating to the Company’s internal accounting and disclosure controls that, in the context of the overall control environment and the current lack of accounting personnel resources, are considered reportable conditions and that, when taken together, represent a material weakness in internal controls.*

The following is an example of a Section 404 material weakness disclosure from an acquiring firm within my sample. The acquirer is Avanex Corporation, a company

that provides technology which enhances voice, video, and data signal transmissions over fiber optic networks. The disclosure below is directly quoted from the auditor's report on internal controls, found in "Item 8 –Financial Statements and Supplementary Data" within the company's June 30, 2006 Form 10-K, filed on September 28, 2006. The auditor's description below is consistent with management's description of control problems as found in "Item 9A – Controls and Procedures." The company reports the following six material weaknesses:

1. Company-level controls. *The Company's finance group continued to experience turnover such that there was insufficient familiarity with historical accounting entries and the supervision of the accounting processes was not effective. In addition, during fiscal 2006 the majority of the Company's manufacturing operations transitioned to contract manufacturers and these transitions contributed to a number of accounting errors which required post-close journal entries during the year-end close process. Also, controls were not in place to adequately restrict access to the accounting systems. In addition management's assessments related to the risk of financial fraud were not completed until after year end and certain controls in the assessment process were found to be ineffective;*
2. Preparation and review procedures over account reconciliations and related journal entries. *The controls over the preparation and review of account reconciliations and related journal entries both in the Fremont and Nozay facilities were initially inadequate and led to a lack of control over the Company's closing and reporting processes, which were corrected in the audit process.*
3. Controls over accounts receivable and warranty reserves. *Initially, accounts receivable reserves did not adequately consider the Company's recent collection performance and warranty reserves did not adequately consider the Company's recent performance in the contract manufacturing environment and were corrected in the audit process;*
4. Controls over inventory. *Inadequate controls around the Company's inventory values including transactions with the Company's contract manufacturer and inter-company shipments resulted in errors in ending inventory in both the Fremont and Nozay facilities, which required adjustment in the audit process. Accounting records were not adjusted to physical counts in a timely manner;*

and initially, inventory reserves did not adequately consider recent historical performance, which were corrected in the audit process;

5. *Controls over pension accounting. Lack of personnel with the requisite level of knowledge of the French subsidiary's pension plan initially resulted in errors in accounting for the Company's pension obligation, which were corrected in the audit process; and*
6. *Controls over stock-based compensation. Lack of personnel with the requisite level of knowledge of stock-based compensation accounting initially resulted in errors in the recorded expense, which were corrected in the audit process.*

APPENDIX B

VARIABLE DEFINITIONS

Variable	Definition
Acquirer announcement period BHARs	I calculate this variable is by accumulating the acquirer's buy-and-hold returns from 2 days prior to the acquisition announcement through 2 days after the acquisition announcement less the peer portfolio average buy-and-hold returns accumulated over the same period.
Acquirer interim period BHARs	I calculate this variable is by accumulating the acquirer's buy-and-hold returns from the 3rd day after the acquisition announcement to the SDC reported effective date less the peer portfolio average buy-and-hold returns accumulated over the same period. The effective date is used in calculating interim returns since there are no target delisting dates for most acquisitions in my sample (i.e., since most involve acquiring a non-public target).
Acquirer post-acquisition BHARs	I calculate this variable by accumulating the acquirer's buy-and-hold returns over the 24 months after the SDC reported effective date less peer portfolio average buy-and-hold returns accumulated over the same period. The 24 month window begins on the day after the effective date. I use daily returns from the day after the effective date until the first-month-end after the effective date. Then I use monthly returns from the 2nd month-end after the effective date through the 24th month-end after the effective date. The effective date is used in calculating post-acquisition returns since there are no target delisting dates for most acquisitions in my sample (i.e., since most involve acquiring a non-public target).
Acquirer post-acquisition RNOA	Acquirer post-acquisition RNOA represents the average of the first two full years of RNOA after the effective date of the acquisition. If year +2 RNOA information is missing, I simply use +1 RNOA instead of the average of the two years. RNOA is calculated as in Nissim and Penman (2001, appendix).
Acquirer prior-acquisition RNOA	Acquirer prior-acquisition RNOA represents the average of the first two full years of RNOA prior to the acquisition. If year -2 RNOA information is missing, I simply use -1 RNOA instead of the average of the two years.
Prior-Peer Portfolio RNOA	Prior-acquisition RNOA for the Peer Portfolio is calculated over the same time period as the acquirer's prior-acquisition RNOA, but represents the average RNOA from a portfolio of five peer firms matched on material weakness, industry, and size.
Post-Peer Portfolio RNOA	Post-acquisition RNOA for the peer portfolio is calculated over the same time period as the acquirer's post-acquisition RNOA, but represents the average RNOA from a portfolio of five peer firms matched on material weakness, industry, and size.
Acquirer with material weakness(es)	This indicator variable is set to 1 if the acquirer firm reported one or more material weaknesses in its most recent SEC filings prior to the announcement, else 0.
Acquirer market capitalization	Acquirer market capitalization is measured in millions of dollars and is calculated as of the closest month-end that is at least 30 days before the announcement.

Variable	Definition
Acquirer book-to-market	I calculated book-to-market for the acquirer by dividing the acquirer's book value of equity by the market capitalization.
Acquirer announcement momentum	Announcement momentum represents buy-and-hold acquirer returns. I begin calculating these returns on month -6 relative to the announcement and accumulate through the closest month-end to the announcement that is at least 30 days before the announcement.
Acquirer net operating assets	Acquirer net operating assets (NOA) is calculated as in Nissim and Penman (2001, appendix) and is scaled by lagged total assets.
Acquirer sales growth	Acquirer sales growth is calculated as current year sales less prior year sales, divided by prior year sales.
Acquirer total accruals	Acquirer total accruals is calculated as in Richardson et al. (2005). I scale total accruals by lagged total assets.
Only Stock Offer	Only stock offer is an indicator variable equal to 1 if SDC reports that the consideration offered for the target was 100% stock, else 0.
Hostile	Hostile is an indicator variable equal to 1 if the target's management resisted the takeover, else 0 (from SDC).
Small Acquirer	Small acquirer is an indicator variable set to 1 if the acquirer is considered "small" based on the Moeller et al. (2004) definition. If the acquirer is below the 25th percentile of NYSE firms based on market capitalization in the year prior to the announcement the indicator variable is set to 1, else 0.
Acquirer Cash	Acquirer cash is measured as cash and short-term investments scaled by total assets.
Target Public	Public target is an indicator variable equal to 1 if the target is public, else 0. I identify a target as a public firm if I am able to match the firm to a CIK number in the Compustat database.
Different Industry	Different industry is an indicator variable equal to 1 if the 2-digit SIC codes reported by SDC and Compustat are not the same for the target and the acquirer.

APPENDIX C

SAMPLE SELECTION BIAS

Since a firm's decision to acquire another firm is a non-random event, sample selection bias is a potential threat to my findings. In my primary analyses, I attempt to overcome sample selection bias through selection of control firms that are similar to each sample firm except for the decision to acquire. However, unobservable factors affecting *both* the decision to acquire and performance outcomes (i.e., operating performance measured with RNOA and stock market returns) could lead to estimation bias (Heckman 1979). To determine whether my findings are robust after controlling for management's choice to acquire, I perform analyses following Heckman's 2-stage approach (Heckman 1979). In the first stage, I estimate an acquisition choice model using a probit regression. In the second stage I include the Inverse Mills ratio (IMR) which serves as a sample selection bias correction variable. The tables included in this Appendix report these results.

As reported on Table C.1, I first perform the 2-stage Heckman approach to re-examine the relationship between an acquirer's internal control quality and post-acquisition RNOA for the Section 302 (Panel A) and Section 404 samples (Panel B). I follow the acquisition choice model used in Harford (1999) and Harrison and Oler (2010), and I regress the decision to make an acquisition in year $t + 1$ on leverage, cash level, momentum, sales growth, natural log of market capitalization, and book-to-market from year t . I also include a variable for internal control quality of the firm in year t as measured by the existence of at least one material weakness in year t since it

is possible that internal control quality may impact the decision to acquire (see discussion in the Hypotheses Development Section). The time period for the first stage choice model estimation is the same as my acquisition sample time periods (i.e., 8/29/2002 to 12/31/2009 for the Section 302 sample and 11/15/2004 to 12/31/2009 for the Section 404 sample).

I report results for the Section 302 RNOA testing in Panel A of Table C.1. I find that firms with material weaknesses are significantly less likely to acquire another firm as demonstrated in the first stage probit regression. This finding is consistent with the notion that smaller firms are more likely to have material weaknesses in internal control (Doyle et al. 2007b) and smaller firms are less likely to acquire another firm (first-stage market cap. variable estimate = 0.141, p-value < 0.0001). In the second stage OLS regression, I find that my results are consistent with those previously reported in Table 5. The coefficient estimates on the “Acquirer with MW(s)” variable are -0.020 (under Matching Method A) and -0.022 (under Matching Method B) which is in line with coefficients reported in Table 5. However, the one-tailed p-values are only marginally significant compared to more significant p-values in Table 5. Lennox et al. (2012) caution that Heckman selection model results are extremely sensitive to high levels of multicollinearity and suggest that researchers examine and report variance inflation factors (VIFs). I find that multicollinearity does not appear to be problematic in my analyses; VIFs in the second stage analyses are mostly less than 2, with the highest VIF at 8.76. The drop in significance for “Acquirer with MW(s)” compared to Table 5 is likely explained by a lack of power in

the Heckman analysis. The sample size drops by about 50%, compared to the observations used in testing reported in Table 5. The sample size decreases primarily because there can be multiple acquisitions in one year by the same acquirer in my sample used in Table 5 testing, whereas I only include one acquisition per firm-year in the probit acquisition choice model. There are 2,799 acquiring firm-years and 16,800 non-acquiring firm-years used in the first-stage probit regression used to estimate the IMR, thus I use only those 2,799 acquisitions in the second-stage OLS regression. Although the Heckman analysis may suffer from a relative lack of power, the negative relationship demonstrated in Table 5 between acquirers with material weaknesses and post-acquisition RNOA does appear to hold when controlling for the choice to acquire. The coefficient on the IMR used as an explanatory variable in the second stage is negative, although not significant. While not statistically significant, the negative sign on the coefficient is consistent with the notion that the decision to make an acquisition is, on average, a poor operating decision.

In my primary RNOA analyses for the Section 404 sample I found a significant and negative relationship between acquirer material weaknesses and acquisition performance. When I perform the Heckman 2-stage analysis as described above and reported in Table C.1., Panel B, the coefficients on the “Acquirer with MW(s)” variable are similar to the coefficients reported in Table 5 and significant. Other variables are consistent with those reported in Table 5 and the IMR variable is negative, though not significant. Multicollinearity does not seem to be a problem in the second stage as most VIFs are less than 2 and the highest VIF is 8.23. I also find

that internal control quality of firms in the Section 404 sample is not significantly associated with the decision to acquire another firm according to the first stage probit regression. Although not significantly positive, the switch from the significant negative association in the Section 302 choice model to a positive direction in the Section 404 choice model is somewhat surprising.

Next, I re-examine the relationship between an acquirer's internal control quality and stock market returns using the 2-stage Heckman approach for the Section 302 and Section 404 samples. As reported in Table 6, "Acquirer with MW(s)" is negatively and significantly associated with announcement period returns in the Section 302 sample. Those announcement period results remain strong and consistent when I perform Heckman's 2-stage analysis. As reported in Panel A of Table C.2, the coefficient on "Acquirer with MW(s)" is -0.011 and the one-tailed p-value is 0.033. Other variables are consistent with those reported in Table 6. The IMR variable is not significant in the second stage regression. VIFs are primarily less than 2 and the highest VIF is only 6.21, thus, multicollinearity does not seem to be a problem in the second stage analyses. As in my RNOA Heckman Section 302 analyses, I find in the first stage probit regression that poor internal control quality is negatively associated with the decision to acquire, (estimate= -0.078, two-tailed p-value= 0.061).

For the Section 404 sample, I show in Table 6 that investors respond negatively to acquirer material weaknesses in the announcement period, although the relationship is only marginally significant for most analyses. When I perform the Heckman 2-stage procedure on the Section 404 sample used to test announcement

period returns, I do not find a significant relationship between “Acquirer with MW(s)” and returns (see Panel B of Table C.2). Further, several other explanatory variables are not consistent with results in Table 6. For example, the natural log of market capitalization, which was strongly negative and significant in Table 6 analyses is now slightly positive and not significant. The stock variable also loses significance in the second stage of the Heckman analysis compared to Table 6 results.

Multicollinearity does not appear to be a problem, as VIFs are mostly less than 2, with the highest VIF at 6.37. Additionally, the IMR variable in the second stage loads positively and significantly (estimate = 0.040, two-tailed p-value = 0.011). This could be interpreted as investors reacting positively to the decision to acquire, which seems counterintuitive. Finally, as in my RNOA Heckman Section 404 analyses, I find in the first stage probit regression that poor internal control quality is positively associated with the decision to acquire (estimate= 0.160, two-tailed p-value= 0.005).

Interim period returns are not associated with internal control quality for either the Section 302 sample or the Section 404 sample in my primary analyses (see Table 7). Thus, I would not expect to see a significant relationship after controlling for the decision to acquire. I run the Heckman analyses for both the Section 302 and Section 404 samples, finding no evidence of a relationship between “Acquirer with MW(s)” and interim period returns as expected. Multicollinearity does not appear to be a problem in either the Section 302 or the Section 404 analyses, as VIFs are mostly less than 2, with the highest VIF at around 6. See Table C.2 Panel A for Section 302 results and Table C.2 Panel B for Section 404 results.

Table 8 shows that post-acquisition returns are negatively and significantly associated with the variable “Acquirer with MW(s)” in my Section 302 sample. When I perform the Heckman 2-stage analyses, I find results consistent with those in Table 8 for Section 302. See Panel A in Table C.2 for results. The variable “Acquirer with MW(s)” remains significantly and negatively associated with post-acquisition returns after controlling for the decision to acquire in the Section 302 sample. VIFs are mostly less than 2, with the highest VIF at 6.21, thus multicollinearity does not appear to be a problem in these analyses. The IMR variable is not significant in the second stage OLS regression.

Table 8 shows mixed results with only a marginally significant association between Section 404 material weaknesses and post-acquisition returns. Panel B of Table C.2 reports the Heckman 2-stage analyses. After controlling for the decision to acquire using Heckman’s procedure, I find some evidence of a significantly negative relationship between “Acquirer with MW(s)” and post-acquisition returns, but only when Matching Method B is used (matched on industry, existence of a material weakness in the year before the deal announcement date, and the number of days the material weakness is outstanding). VIFs are mostly less than 2, with the highest VIF at 6.37, thus multicollinearity does not appear to be a problem in these analyses. The IMR variable is not significant.

Table C.1 Sample Selection Bias Analyses – RNOA Testing

The tables in this appendix report the results of Heckman 2-Stage Analyses performed to address a potential sample selection bias issue. Panel A (B) of Table C.1 reports the Heckman 2-Stage results testing the association between acquirer internal control quality measured by Section 302 (404) material weaknesses and post-acquisition RNOA (H1). In each panel, I first present the results of the first stage probit regression that models a firm's choice to announce an acquisition in a given year from 8/29/2002 to 12/31/2009 for the Section 302 sample (and from 11/15/2004 to 12/31/2009 for the Section 404 sample). The acquisition choice model regresses the decision to make an acquisition in year $t+1$ on SOX material weakness, leverage, sales growth, size, BTM, momentum, and cash level in year t . Results from the first stage probit regression are used to calculate the inverse Mills ratio (IMR) used in the second stage OLS regression. Year dummies are not shown. P-values presented are two-tailed except for p-values for the hypothesized variable which are one-tailed. P-values are presented in bold if significant at the 5% level or better.

Table C.1 Continued

Panel A - Section 302 RNOA Testing

Heckman 1st Stage Model - Probit Regression

Variable	Section 302		
	Predicted Sign	estimate	p-value
Acquirer with MW(s)	?	-0.103	0.028
Leverage	+	-0.420	<0.001
Sales Growth	+	0.282	<0.001
Natural Log Market Cap	+	0.141	<0.001
Book-to-Market	-	-0.213	<0.001
Momentum	+	0.105	0.001
Cash	+	-0.911	<0.001
Intercept		-2.664	<0.001
Acquiring Firm- Years		2,799	
Non-Acquiring Firm- Years		16,800	

Heckman 2nd Stage Model - Ordinary Least Squares Regression

Dependent Variable=Acquirer Post-AQ RNOA		Section302		Section 302	
		Matching Method A		Matching Method B	
Variable	Predicted Sign	estimate	p-value	estimate	p-value
Acquirer with MW(s)	- (H1)	-0.020	0.076	-0.022	0.058
Natural Log AQ Market Cap	-	0.015	<0.001	0.014	<0.001
Acquirer Book-to-Market	+	-0.108	<0.001	-0.106	<0.001
Announcement Momentum	-	0.021	0.077	0.020	0.079
Acquirer NOA	-	-0.019	0.158	-0.021	0.123
Acquirer Sales Growth	-	-0.036	0.012	-0.038	0.008
Acquirer Total Accruals	-	-0.048	0.014	-0.045	0.019
Only Stock Offer	-	-0.060	0.005	-0.060	0.005
Hostile	+	-0.053	0.716	-0.061	0.675
Small Acquirer	+	0.021	0.034	0.016	0.100
Acquirer Cash	-	-0.087	0.003	-0.081	0.006
Target Public	-	-0.029	0.012	-0.029	0.011
Different Industry	-	-0.011	0.043	-0.012	0.031
Acquirer Prior-AQ RNOA	+	0.217	<0.001	0.223	<0.001
Prior-AQ RNOA for Peer Portfolio	+	0.003	0.561	0.003	0.156
Post-AQ RNOA for Peer Portfolio	+	0.014	0.127	0.000	0.985
Inverse Mills Ratio	?	-0.055	0.075	-0.059	0.057
Intercept		0.012	0.897	0.026	0.781
n		2,799		2,810	
Adj R-Squared		26.2%		26.5%	

Table C.1 Continued

Panel B - Section 404 RNOA Testing

Heckman 1st Stage Model - Probit Regression

Section 404			
Variable	Predicted Sign	estimate	p-value
Acquirer with MW(s)	?	0.095	0.135
Leverage	+	-0.533	<0.001
Sales Growth	+	0.408	<0.001
Natural Log Market Cap	+	0.163	<0.001
Book-to-Market	-	-0.337	<0.001
Momentum	+	-0.055	0.289
Cash	+	-1.008	<0.001
Intercept		-3.044	<0.001
Acquiring Firm- Years		1,288	
Non-Acquiring Firm- Years		9,335	

Heckman 2nd Stage Model - Ordinary Least Squares Regression

Dependent Variable=Acquirer Post-AQ RNOA					
Section 404				Section 404	
Matching Method A				Matching Method B	
Variable	Predicted Sign	estimate	p-value	estimate	p-value
Acquirer with MW(s)	- (H1)	-0.036	0.012	-0.034	0.016
Natural Log AQ Market Cap	-	0.016	0.003	0.017	0.002
Acquirer Book-to-Market	+	-0.157	<0.001	-0.157	<0.001
Announcement Momentum	-	0.004	0.844	0.004	0.856
Acquirer NOA	-	-0.044	0.028	-0.044	0.030
Acquirer Sales Growth	-	-0.032	0.221	-0.031	0.232
Acquirer Total Accruals	-	-0.004	0.894	-0.006	0.852
Only Stock Offer	-	-0.070	0.035	-0.070	0.037
Small Acquirer	+	-0.013	0.352	-0.014	0.307
Acquirer Cash	-	-0.078	0.071	-0.072	0.092
Target Public	-	-0.001	0.973	0.000	0.980
Different Industry	-	-0.009	0.223	-0.010	0.212
Acquirer Prior-AQ RNOA	+	0.159	<0.001	0.162	<0.001
Prior-AQ RNOA for Peer Portfolio	+	-0.028	0.010	0.014	0.076
Post-AQ RNOA for Peer Portfolio	+	0.028	0.040	-0.003	0.875
Inverse Mills Ratio	?	-0.014	0.707	-0.010	0.789
Intercept		-0.010	0.941	-0.035	0.785
n		1,288		1,289	
Adj R-Squared		27.0%		26.9%	

Table C.2 Sample Selection Bias Analyses – Returns Testing

The tables in this appendix report the results of Heckman 2-Stage Analyses performed to address a potential sample selection bias issue. Panel A (B) of Table C.2 reports the Heckman 2-Stage results testing the association between acquirer internal control quality as measured by Section 302 (404) material weaknesses and announcement period returns (H2), interim period returns (H3), and post-acquisition period returns (H4). In each panel, I first present the results of the first stage probit regression that models a firm's choice to announce an acquisition in a given year from 8/29/2002 to 12/31/2009 for the Section 302 sample (and from 11/15/2004 to 12/31/2009 for the Section 404 sample). The acquisition choice model regresses the decision to make an acquisition in year $t+1$ on SOX material weakness, leverage, sales growth, size, BTM, momentum, and cash level in year t . Results from the first stage probit regression are used to calculate the inverse Mills ratio (IMR) used in the second stage OLS regression. Year dummies are not shown. P-values presented are two-tailed except for p-values for the hypothesized variable which are one-tailed. P-values are presented in bold if significant at the 5% level or better.

Panel A - Section 302 Returns Testing**Heckman 1st Stage Model - Probit Regression**

Section 302			
Variable	Predicted Sign	estimate	p-value
Acquirer with MW(s)	?	-0.078	0.061
Leverage	+	-0.541	<0.001
Sales Growth	+	0.260	<0.001
Natural Log Market Cap	+	0.122	<0.001
Book-to-Market	-	-0.260	<0.001
Momentum	+	0.081	0.006
Cash	+	-0.652	<0.001
Intercept		-2.187	<0.001
Acquiring Firm- Years		3,796	
Non-Acquiring Firm- Years		15,803	

Table C.2 Continued

Panel A - Section 302 Returns Testing

Heckman 2nd Stage Model - Ordinary Least Squares Regression

Dependent Variable		Section 302 Acquirer Announcement BHARs			Section 302 Acquirer Interim BHARs			Section 302 Acquirer Post-AQ BHARs (Matching Method A)			Section 302 Acquirer Post-AQ BHARs (Matching Method B)	
Variable	Predicted Sign	estimate	p-value		estimate	p-value		estimate	p-value		estimate	p-value
Acquirer with MW(s)	- (H2)	-0.011	0.033	(H3)	0.011	0.138	(H4)	-0.097	0.036	(H4)	-0.139	0.005
Natural Log AQ Market Cap	-	-0.003	0.023		-0.004	0.089		-0.008	0.529		-0.003	0.816
Acquirer Book-to-Market	+	-0.003	0.594		-0.003	0.778		0.003	0.948		0.028	0.566
Announcement Momentum	-	0.008	0.081		-0.008	0.304		-0.048	0.269		-0.028	0.521
Acquirer NOA	-	-0.008	0.158		0.022	0.020		0.086	0.093		0.026	0.614
Acquirer Sales Growth	-	-0.001	0.868		-0.010	0.282		-0.034	0.480		-0.046	0.346
Acquirer Total Accruals	-	-0.006	0.400		-0.016	0.175		-0.112	0.087		-0.094	0.149
Only Stock Offer	-	-0.016	0.048		-0.055	<0.001		-0.037	0.612		-0.132	0.071
Hostile	+	0.062	0.389		0.263	0.030		0.181	0.784		0.227	0.731
Small Acquirer	+	0.003	0.446		-0.002	0.759		0.024	0.508		0.021	0.562
Acquirer Cash	-	-0.029	0.003		0.027	0.105		-0.031	0.735		-0.115	0.207
Target Public	-	-0.010	0.045		0.022	0.007		-0.022	0.628		-0.001	0.988
Different Industry	-	-0.001	0.643		0.006	0.131		-0.042	0.051		-0.037	0.090
Inverse Mills Ratio	?	0.007	0.595		-0.011	0.606		0.022	0.848		-0.060	0.606
Intercept		0.057	0.092		0.056	0.329		-0.096	0.759		-0.030	0.923
n		3,796			3,796			3,796			3,807	
Adj R-Squared		1.5%			0.6%			0.7%			1.5%	

Table C.2 Continued**Panel B - Section 404 Returns Testing****Heckman 1st Stage Model - Probit Regression**

Section 404			
Variable	Predicted Sign	estimate	p-value
Acquirer with MW(s)	?	0.160	0.005
Leverage	+	-0.672	<0.001
Sales Growth	+	0.338	<0.001
Natural Log Market Cap	+	0.158	<0.001
Book-to-Market	-	-0.361	<0.001
Momentum	+	-0.081	0.090
Cash	+	-0.726	<0.001
Intercept		-2.782	<0.001
Acquiring Firm- Years		1,719	
Non-Acquiring Firm- Years		8,904	

Table C.2 Continued

Panel B - Section 404 Returns Testing

Heckman 2nd Stage Model - Ordinary Least Squares Regression

Dependent Variable	Section 404				Section 404		Section 404		Section 404			
	Acquirer Announcement BHARs				Acquirer Interim BHARs		Acquirer Post-AQ BHARs		Acquirer Post-AQ BHARs			
							(Matching Method A)		(Matching Method B)			
Variable	Predicted Sign	estimate	p-value		estimate	p-value		estimate	p-value		estimate	p-value
Acquirer with MW(s)	- (H2)	-0.003	0.308	(H3)	0.006	0.301	(H4)	-0.017	0.365	(H4)	-0.123	0.007
Natural Log AQ Market Cap	-	0.001	0.819		-0.005	0.176		-0.007	0.682		-0.003	0.852
Acquirer Book-to-Market	+	-0.023	0.010		0.004	0.794		0.061	0.346		0.037	0.569
Announcement Momentum	-	0.009	0.285		0.003	0.829		-0.026	0.683		-0.084	0.180
Acquirer NOA	-	-0.014	0.127		0.044	0.002		0.143	0.031		0.153	0.020
Acquirer Sales Growth	-	0.002	0.838		-0.024	0.161		0.011	0.890		0.013	0.870
Acquirer Total Accruals	-	0.009	0.495		-0.005	0.831		-0.192	0.055		-0.191	0.055
Only Stock Offer	-	-0.007	0.590		-0.131	<0.001		0.065	0.520		0.031	0.758
Small Acquirer	+	0.002	0.787		0.017	0.074		-0.044	0.315		-0.059	0.177
Acquirer Cash	-	-0.025	0.103		0.047	0.055		0.172	0.131		0.240	0.035
Target Public	-	-0.006	0.347		0.013	0.230		0.003	0.947		0.017	0.740
Different Industry	-	-0.001	0.808		0.002	0.726		-0.032	0.201		-0.055	0.030
Inverse Mills Ratio	?	0.040	0.011		-0.041	0.101		-0.067	0.567		-0.122	0.296
Intercept		-0.037	0.469		0.095	0.235		-0.107	0.775		-0.081	0.828
n		1,719			1,719			1,719			1,719	
Adj R-Squared		0.9%			2.6%			1.1%			2.2%	

APPENDIX D

CORPORATE GOVERNANCE ALTERNATIVE EXPLANATION

A potential challenge to my findings is that poor internal control quality is not detrimental to acquisition performance as I suggest, but instead there is a correlated omitted variable driving my results. Prior research finds that companies with weak corporate governance are more likely to experience certain types of SOX material weaknesses in internal control (Doyle et al. 2007b). Prior research using the limited internal control information available pre-SOX (i.e., internal control problems as disclosed in 8-Ks surrounding an auditor change) also finds that firms with higher quality corporate governance report fewer internal control problems (Krishnan 2005). Prior research in the M&A literature finds that acquiring firms with relatively poorer corporate governance experience significantly lower announcement period returns (Masulis et al. 2007). Taken together, these two streams of research suggest that poorer corporate governance could be causing both the SOX internal control problems and poorer acquisition performance.

To rule out the above alternative explanation for my results, I re-perform my testing for H1 through H4 including a variable measuring corporate governance. The following tables included in this appendix report the results of this testing. Consistent with Masulis et al. (2007), I measure corporate governance using the governance index (“GIndex”) developed by Gompers et al. (2003) and available through the Governance Legacy database within Risk Metrics. As in Masulis et al. (2007), I test a

continuous variable (GIndex) and a dummy variable called “Dictatorship” which is set equal to 1 if the GIndex is greater than the median value of the GIndex (note that higher scores on the GIndex indicate poorer corporate governance).

I perform OLS regressions (p-values adjusted for clustered standard errors for year and acquirer) robust regressions (Huber 1973) and as in Tables 5 through 8 for three models. Model 1 includes GIndex as a measure of corporate governance. Model 2 includes Dictatorship as an alternative measure of corporate governance. Model 3 does not include either corporate governance measure, but simply presents the regression results on the sample restricted to observations with corporate governance information available. Model 3 results are especially useful in distinguishing whether drops (or losses) of significance on my variable of interest "Acquirer with MW(s)" are driven by corporate governance as a control or by a relative loss of power compared to my primary analyses in Tables 5 through 8.

Panel A of Table D.1 presents the results of my analyses to re-examine the relationship between internal control quality at the acquiring firm and post-acquisition RNOA (H1) for the Section 302 sample. Due to the limited availability of Gindex data, my sample size decreases from 5,731 observations to 2,990. The robust regression results shown in Panel A continue to support a significantly negative relationship between “Acquirer with MW(s)” and post-acquisition RNOA controlling for corporate governance. The GIndex and Dictatorship variables exhibit a negative relationship with post-acquisition RNOA which is consistent with Masulis et al.’s (2007) results on announcement period returns and the notion that firms with poorer

governance experience poorer acquisition performance. The relationship between “Acquirer with MW(s)” and post-acquisition RNOA continues to be negative but loses significance in the OLS regression with clustered standard errors. Due to the significant sample size reduction (loss of about 50%) caused by corporate governance data limitations, it is likely that the loss of significance is due to a loss of power. To determine if the loss of significance is due to a loss of power versus the effect of the corporate governance control variable, I re-run the OLS regression on only the 2,990 firms with GIndex data available, but I do not include the GIndex or Dictatorship variable as a control (see Model 3 results). The “Acquirer with MW(s)” variable is virtually unchanged from its value when the GIndex/Dictatorship was included as a control variable (“Acquirer with MW(s)” estimate = -0.032, one-tailed p-value=0.181) indicating that the loss of significance was primarily due to sample size restriction. Based on my robust and OLS regressions in Panel A of Table D.1, it appears that corporate governance does not pose an omitted correlated variable problem.

The relationship between “Acquirer with MW(s)” and post-acquisition RNOA is also negative and significant in the Section 404 sample as reported in Table 5. In Panel B of Table D.1, I perform the same analyses discussed above to control for corporate governance in the Section 404 sample with very similar results. When the corporate governance variable is included in the model, the sample size shrinks from 3,087 observations to only 1,597. The “Acquirer with MW(s)” remains significant as reported in Table 5, and the corporate governance variable (GIndex) is negative and significant as expected based on prior research. As in the Section 302 sample, I

perform regressions on the reduced sample, without the corporate governance control variable and the “Acquirer with MW(s)” remains significant. Based on Panel B results, corporate governance does not appear to be driving my earlier findings that poorer internal control quality is associated with poorer post-acquisition operating performance.

I next re-examine H2 controlling for corporate governance for the Section 302 sample. See Panel A of Table D.2. I find that “Acquirer with MW(s)” remains negative and significant in both robust and OLS regressions of announcement period returns. Thus, the Section 302 H2 results are robust to controlling for corporate governance.

Section 404 results for H2 are also robust to controlling for corporate governance as “Acquirer with MW(s)” remains negative and significant in both robust and OLS regressions of announcement period returns. See Panel B of Table D.2.

H3 tests the association between interim returns and acquirer internal control quality. I do not find any significant relationship for either the Section 302 or Section 404 samples in my primary analyses. Results controlling for corporate governance are presented in Panel A and B of Table D.3 for the Section 302 and Section 404 samples, respectively. When controlling for corporate governance, results remain insignificant for H3 for the Section 302 sample, and become more significant for some of the analyses for the Section 404 sample after controlling for corporate governance.

Finally, I perform OLS and robust regressions to test the relationship between post-acquisition returns and internal control quality (H4). As reported in Table 8, I

find that “Acquirer with MW(s)” is negatively and significantly related to post-acquisition returns for the Section 302 Sample. When re-analyzing the relationship controlling for corporate governance as shown in Panel A of Table D.4, I find that “Acquirer with MW(s)” remains negative, but loses significance. The “Gindex” and “Dictatorship” variables are negative but only marginally significant in the robust regression. As before, I re-run the regressions using only the firms with corporate governance data (3,947 observations compared to 7,751 observations in Table 8) but I remove the corporate governance control variable (see Model 3). The “Acquirer with MW(s)” remains almost unchanged from the analyses where the corporate governance control was included. I interpret these results as evidence that the loss of significance is driven by a lack of power and not due to a correlated omitted variable problem with corporate governance. Similarly, when re-examining the marginally significant relationship between post-acquisition returns and “Acquirer with MW(s)” for the Section 404 sample (see Panel B of Table D.4), I find that “Acquirer with MW(s)” remains only marginally significant when controlling for corporate governance. In the Section 404 sample, both “GIndex” and “Dictatorship” are negatively (though not significantly) related to post-acquisition returns.

Table D.1 Corporate Governance Analyses – RNOA Testing

The tables in this appendix report the results of analyses designed to address potential concerns that a correlated omitted variable (corporate governance) may be driving my primary results. To address these concerns, I report ordinary least squares regression results (p-values are adjusted for clustered standard errors, clustered on acquiring firm and year) and robust regression results (Huber 1973) for three different models. In the first model, I include a measure of corporate governance called "GIndex" developed by Gompers et al. (2003), provided by the Governance Legacy database within Risk Metrics. In the second model, I include an alternate measure of corporate governance called "Dictatorship" which takes on the value of 1 for firms with GIndex scores greater than the median GIndex score in the sample, else 0. Finally, I report a third model which does not include any corporate governance control variables, but the regression is only performed on the restricted sample of firms with corporate governance information available. The third model assists in distinguishing whether drops (or losses) of significance on my variable of interest "Acquirer with MW(s)" are driven by corporate governance as a control or by a relative loss of power compared to my primary analyses in Tables 5 through 8. Panel A (Panel B) of Table D.1 presents RNOA testing on the Section 302 (Section 404) sample. All variables are defined in Appendix B or as described above. Year dummies are not shown. P-values presented are two-tailed except for p-values for the hypothesized variable which are one-tailed. P-values are presented in bold if significant at the 5% level or better.

Table D.1 Continued

Panel A

Dependent Variable=Acquirer Post-AQ RNOA													
		Section 302 - Gindex				Section 302 - Dictatorship				Section 302 - No Governance Controls			
		Clustered		Robust		Clustered		Robust		Clustered		Robust	
Variable	Predicted Sign	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Acquirer with MW(s)	- (H1)	-0.033	0.176	-0.043	<0.001	-0.034	0.170	-0.042	0.001	-0.032	0.181	-0.042	0.001
GIndex	-	-0.003	0.210	-0.001	0.120								
Dictatorship	-					-0.010	0.187	-0.005	0.181				
Natural Log AQ Market Cap	-	0.014	0.001	0.009	<0.001	0.014	0.001	0.009	<0.001	0.014	0.001	0.010	<0.001
Acquirer Book-to-Market	+	-0.148	0.009	-0.117	<0.001	-0.147	0.008	-0.117	<0.001	-0.147	0.008	-0.117	<0.001
Announcement Momentum	-	0.024	0.279	0.037	<0.001	0.024	0.266	0.038	<0.001	0.023	0.275	0.037	<0.001
Acquirer NOA	-	-0.068	0.004	-0.072	<0.001	-0.068	0.004	-0.073	<0.001	-0.068	0.004	-0.072	<0.001
Acquirer Sales Growth	-	-0.002	0.913	0.012	0.241	-0.002	0.917	0.012	0.254	-0.001	0.957	0.012	0.252
Acquirer Total Accruals	-	-0.015	0.718	-0.018	0.245	-0.015	0.714	-0.017	0.259	-0.016	0.700	-0.018	0.242
Only Stock Offer	-	-0.038	0.358	0.016	0.282	-0.038	0.354	0.015	0.306	-0.038	0.363	0.014	0.324
Hostile	+	-0.031	0.009	-0.048	0.465	-0.034	0.017	-0.049	0.457	-0.039	0.004	-0.052	0.432
Small Acquirer	+	-0.042	0.429	-0.005	0.734	-0.041	0.460	-0.005	0.705	-0.038	0.483	-0.004	0.783
Acquirer Cash	-	-0.117	0.059	-0.003	0.831	-0.116	0.050	-0.004	0.816	-0.110	0.064	-0.002	0.878
Target Public	-	-0.035	<0.001	-0.028	<0.001	-0.035	<0.001	-0.028	<0.001	-0.036	<0.001	-0.028	<0.001
Different Industry	-	-0.006	0.435	-0.004	0.290	-0.006	0.413	-0.004	0.272	-0.007	0.347	-0.004	0.223
Acquirer Prior-AQ RNOA	+	0.210	<0.001	0.345	<0.001	0.211	<0.001	0.345	<0.001	0.211	<0.001	0.347	<0.001
Prior-AQ RNOA for Peer Portfolio	+	0.002	0.757	0.000	0.970	0.003	0.710	0.000	0.994	0.004	0.630	0.001	0.852
Post-AQ RNOA for Peer Portfolio	+	0.019	0.354	0.016	0.007	0.020	0.341	0.016	0.006	0.020	0.358	0.016	0.008
Intercept		-0.020	0.822	0.003	0.904	-0.042	0.606	-0.005	0.842	-0.051	0.538	-0.010	0.664
n		2,990		2,990		2,990		2,990		2,990		2,990	
Adj R-Squared		28.6%		24.0%		28.5%		24.1%		28.5%		24.1%	

Table D.1 Continued

Panel B

Dependent Variable=Acquirer Post-AQ RNOA													
		Section 404 - Gindex				Section 404 - Dictatorship				Section 404 - No Governance Controls			
		Clustered		Robust		Clustered		Robust		Clustered		Robust	
Variable	Predicted Sign	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Acquirer with MW(s)	- (H1)	-0.050	0.037	-0.057	<0.001	-0.047	0.035	-0.054	<0.001	-0.045	0.041	-0.053	<0.001
GIndex	-	-0.005	0.050	-0.003	<0.001								
Dictatorship	-					-0.011	0.087	-0.006	0.240				
Natural Log AQ Market Cap	-	0.011	0.021	0.009	<0.001	0.011	0.019	0.009	<0.001	0.012	0.019	0.009	<0.001
Acquirer Book-to-Market	+	-0.275	<0.001	-0.230	<0.001	-0.271	<0.001	-0.224	<0.001	-0.269	<0.001	-0.221	<0.001
Announcement Momentum	-	0.028	0.484	0.037	0.004	0.029	0.449	0.038	0.003	0.029	0.450	0.038	0.003
Acquirer NOA	-	-0.082	0.076	-0.100	<0.001	-0.081	0.078	-0.098	<0.001	-0.082	0.076	-0.097	<0.001
Acquirer Sales Growth	-	-0.021	0.321	-0.004	0.791	-0.018	0.432	-0.002	0.903	-0.015	0.531	-0.001	0.977
Acquirer Total Accruals	-	-0.006	0.948	0.040	0.067	-0.007	0.939	0.037	0.091	-0.008	0.933	0.035	0.106
Only Stock Offer	-	-0.053	0.565	-0.036	0.216	-0.051	0.590	-0.028	0.336	-0.050	0.594	-0.025	0.378
Hostile	+	-0.030	0.011	-0.063	0.478	-0.049	0.004	-0.075	0.398	-0.055	0.002	-0.078	0.380
Small Acquirer	+	0.030	0.399	0.028	0.108	0.034	0.370	0.032	0.061	0.036	0.344	0.034	0.044
Acquirer Cash	-	-0.147	0.177	-0.104	<0.001	-0.140	0.180	-0.092	<0.001	-0.136	0.192	-0.090	<0.001
Target Public	-	-0.036	0.003	-0.020	0.017	-0.036	0.002	-0.020	0.018	-0.036	0.001	-0.020	0.017
Different Industry	-	-0.011	0.218	-0.005	0.323	-0.013	0.158	-0.006	0.225	-0.014	0.129	-0.006	0.196
Acquirer Prior-AQ RNOA	+	0.125	0.021	0.279	<0.001	0.128	0.020	0.288	<0.001	0.130	0.018	0.291	<0.001
Prior-AQ RNOA for Peer Portfolio	+	-0.010	0.325	-0.003	0.642	-0.008	0.442	-0.001	0.891	-0.006	0.516	0.000	0.996
Post-AQ RNOA for Peer Portfolio	+	0.010	0.202	0.018	0.027	0.011	0.177	0.018	0.024	0.011	0.177	0.018	0.029
Intercept		0.133	0.187	0.114	<0.001	0.083	0.354	0.077	0.009	0.073	0.417	0.071	0.015
n		1,597		1,597		1,597		1,597		1,597		1,597	
Adj R-Squared		33.8%		30.2%		33.1%		29.6%		33.0%		29.4%	

**Table D.2 Corporate Governance Analyses – Announcement Period Returns
Testing**

The tables in this appendix report the results of analyses designed to address potential concerns that a correlated omitted variable (corporate governance) may be driving my primary results. To address these concerns, I report ordinary least squares regression results (p-values are adjusted for clustered standard errors, clustered on acquiring firm and year) and robust regression results (Huber 1973) for three different models. In the first model, I include a measure of corporate governance called "GIndex" developed by Gompers et al. (2003), provided by the Governance Legacy database within Risk Metrics. In the second model, I include an alternate measure of corporate governance called "Dictatorship" which takes on the value of 1 for firms with GIndex scores greater than the median GIndex score in the sample, else 0. Finally, I report a third model which does not include any corporate governance control variables, but the regression is only performed on the restricted sample of firms with corporate governance information available. The third model assists in distinguishing whether drops (or losses) of significance on my variable of interest "Acquirer with MW(s)" are driven by corporate governance as a control or by a relative loss of power compared to my primary analyses in Tables 5 through 8. Panel A (Panel B) of Table D.2 presents announcement period abnormal returns testing on the Section 302 (Section 404) sample. All variables are defined in Appendix B or as described above. Year dummies are not shown. P-values presented are two-tailed except for p-values for the hypothesized variable which are one-tailed. P-values are presented in bold if significant at the 5% level or better.

Table D.2 Continued

Panel A

Dependent Variable=Acquirer Announcement BHARs			Section 302 - Gindex				Section 302 - Dictatorship				Section 302 - No Governance Controls			
			Clustered		Robust		Clustered		Robust		Clustered		Robust	
Variable	Sign	Predicted	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Acquirer with MW(s)	-	(H2)	-0.011	0.010	-0.010	0.010	-0.011	0.010	-0.010	0.011	-0.011	0.012	-0.010	0.010
GIndex	-		0.000	0.388	0.000	0.838								
Dictatorship	-						-0.001	0.404	0.000	0.916				
Natural Log AQ Market Cap	-		-0.002	0.001	-0.001	0.034	-0.002	<0.001	-0.001	0.037	-0.002	0.001	-0.001	0.035
Acquirer Book-to-Market	+		0.002	0.750	-0.002	0.458	0.002	0.751	-0.002	0.464	0.002	0.742	-0.002	0.461
Announcement Momentum	-		0.002	0.692	-0.001	0.761	0.002	0.690	-0.001	0.758	0.002	0.698	-0.001	0.759
Acquirer NOA	-		-0.006	0.103	-0.005	0.151	-0.006	0.099	-0.005	0.152	-0.006	0.105	-0.005	0.151
Acquirer Sales Growth	-		-0.002	0.566	0.000	0.923	-0.002	0.571	0.000	0.912	-0.002	0.576	0.000	0.915
Acquirer Total Accruals	-		0.007	0.045	0.005	0.282	0.007	0.044	0.005	0.282	0.007	0.046	0.005	0.282
Only Stock Offer	-		-0.019	0.205	-0.031	<0.001	-0.019	0.205	-0.031	<0.001	-0.019	0.206	-0.031	<0.001
Hostile	+		0.054	<0.001	0.052	0.059	0.054	<0.001	0.051	0.060	0.053	<0.001	0.052	0.059
Small Acquirer	+		0.005	0.581	0.010	0.017	0.005	0.584	0.011	0.016	0.005	0.561	0.010	0.016
Acquirer Cash	-		-0.003	0.750	0.002	0.763	-0.003	0.730	0.002	0.729	-0.002	0.798	0.002	0.740
Target Public	-		-0.008	0.001	-0.005	0.036	-0.008	0.001	-0.005	0.037	-0.008	0.001	-0.005	0.037
Different Industry	-		-0.002	0.255	-0.001	0.503	-0.002	0.255	-0.001	0.487	-0.002	0.231	-0.001	0.490
Intercept			0.035	0.003	0.022	0.013	0.034	0.003	0.021	0.012	0.033	0.006	0.021	0.011
n			3,947		3,947		3,947		3,947		3,947		3,947	
Adj R-Squared			0.7%		0.1%		0.7%		0.1%		0.7%		0.1%	

Table D.2 Continued

Panel B

Dependent Variable=Acquirer Announcement BHARs			Section 404 - Gindex				Section 404 - Dictatorship				Section 404 - No Governance Controls			
			Clustered		Robust		Clustered		Robust		Clustered		Robust	
Variable	Sign	Predicted	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Acquirer with MW(s)	-	(H2)	-0.009	<0.001	-0.011	0.002	-0.009	<0.001	-0.011	0.002	-0.009	<0.001	-0.011	0.001
GIndex	-		0.000	0.282	0.000	0.692								
Dictatorship	-						0.000	0.707	0.002	0.374				
Natural Log AQ Market Cap	-		-0.002	<0.001	-0.001	0.073	-0.002	<0.001	-0.001	0.082	-0.002	<0.001	-0.001	0.067
Acquirer Book-to-Market	+		-0.007	0.001	-0.006	0.218	-0.007	0.001	-0.006	0.226	-0.007	0.001	-0.006	0.211
Announcement Momentum	-		-0.004	0.155	-0.006	0.195	-0.004	0.146	-0.006	0.186	-0.004	0.154	-0.006	0.195
Acquirer NOA	-		-0.005	0.181	-0.006	0.187	-0.005	0.184	-0.006	0.182	-0.005	0.184	-0.006	0.189
Acquirer Sales Growth	-		0.000	0.993	-0.001	0.845	0.000	0.964	-0.001	0.878	0.000	0.971	-0.001	0.823
Acquirer Total Accruals	-		0.000	0.948	0.002	0.757	0.000	0.958	0.002	0.755	0.000	0.956	0.002	0.757
Only Stock Offer	-		0.000	0.996	-0.007	0.511	0.000	1.000	-0.007	0.500	0.000	0.999	-0.007	0.506
Hostile	+		0.065	<0.001	0.062	0.101	0.064	<0.001	0.062	0.102	0.064	<0.001	0.063	0.098
Small Acquirer	+		-0.005	0.614	0.005	0.436	-0.005	0.631	0.005	0.413	-0.005	0.626	0.005	0.449
Acquirer Cash	-		-0.001	0.915	-0.001	0.905	0.000	0.973	-0.001	0.953	0.000	0.958	-0.001	0.865
Target Public	-		-0.005	0.025	-0.003	0.393	-0.005	0.023	-0.003	0.386	-0.005	0.023	-0.003	0.397
Different Industry	-		-0.001	0.409	-0.001	0.582	-0.001	0.378	-0.001	0.555	-0.001	0.369	-0.001	0.603
Intercept			0.035	0.001	0.023	0.037	0.033	<0.001	0.023	0.029	0.033	<0.001	0.025	0.019
n			2,094		2,094		2,094		2,094		2,094		2,094	
Adj R-Squared			0.1%		1.5%		0.1%		1.5%		0.2%		1.5%	

Table D.3 Corporate Governance Analyses – Interim Period Returns Testing

The tables in this appendix report the results of analyses designed to address potential concerns that a correlated omitted variable (corporate governance) may be driving my primary results. To address these concerns, I report ordinary least squares regression results (p-values are adjusted for clustered standard errors, clustered on acquiring firm and year) and robust regression results (Huber 1973) for three different models. In the first model, I include a measure of corporate governance called "GIndex" developed by Gompers et al. (2003), provided by the Governance Legacy database within Risk Metrics. In the second model, I include an alternate measure of corporate governance called "Dictatorship" which takes on the value of 1 for firms with GIndex scores greater than the median GIndex score in the sample, else 0. Finally, I report a third model which does not include any corporate governance control variables, but the regression is only performed on the restricted sample of firms with corporate governance information available. The third model assists in distinguishing whether drops (or losses) of significance on my variable of interest "Acquirer with MW(s)" are driven by corporate governance as a control or by a relative loss of power compared to my primary analyses in Tables 5 through 8. Panel A (Panel B) of Table D.3 presents interim period abnormal returns testing on the Section 302 (Section 404) sample. All variables are defined in Appendix B or as described above. Year dummies are not shown. P-values presented are two-tailed except for p-values for the hypothesized variable which are one-tailed. P-values are presented in bold if significant at the 5% level or better.

Table D.3 Continued

Panel A

Dependent Variable=Acquirer Interim BHARs			Section 302 - Gindex				Section 302 - Dictatorship				Section 302 - No Governance Controls			
			Clustered		Robust		Clustered		Robust		Clustered		Robust	
Variable	Predicted Sign		estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Acquirer with MW(s)	-	(H3)	-0.004	0.409	-0.002	0.312	-0.004	0.413	-0.002	0.302	-0.004	0.412	-0.002	0.313
GIndex	-		0.000	0.391	0.000	0.936								
Dictatorship	-						0.000	0.860	-0.001	0.498				
Natural Log AQ Market Cap	-		-0.003	0.034	0.000	0.357	-0.003	0.037	0.000	0.330	-0.003	0.037	0.000	0.358
Acquirer Book-to-Market	+		0.005	0.186	0.005	0.115	0.006	0.173	0.004	0.121	0.006	0.181	0.005	0.114
Announcement Momentum	-		-0.001	0.910	-0.001	0.610	-0.001	0.905	-0.001	0.636	-0.001	0.905	-0.001	0.610
Acquirer NOA	-		0.006	0.052	-0.003	0.351	0.006	0.053	-0.003	0.342	0.006	0.052	-0.003	0.352
Acquirer Sales Growth	-		-0.008	0.335	0.004	0.268	-0.008	0.350	0.004	0.267	-0.008	0.346	0.004	0.267
Acquirer Total Accruals	-		0.007	0.384	0.009	0.060	0.007	0.382	0.009	0.062	0.007	0.382	0.009	0.060
Only Stock Offer	-		0.010	0.756	-0.036	<0.001	0.010	0.755	-0.036	<0.001	0.010	0.756	-0.036	<0.001
Hostile	+		0.059	0.763	0.050	0.046	0.058	0.766	0.049	0.050	0.058	0.766	0.049	0.050
Small Acquirer	+		-0.014	0.137	0.006	0.126	-0.014	0.156	0.006	0.131	-0.014	0.157	0.006	0.124
Acquirer Cash	-		0.005	0.607	0.000	0.979	0.006	0.520	-0.001	0.894	0.006	0.541	0.000	0.989
Target Public	-		-0.008	0.675	-0.014	<0.001	-0.008	0.673	-0.014	<0.001	-0.008	0.674	-0.014	<0.001
Different Industry	-		0.004	0.066	0.003	0.022	0.004	0.075	0.003	0.019	0.004	0.066	0.003	0.022
Intercept			0.039	0.063	0.006	0.483	0.035	0.104	0.006	0.417	0.035	0.105	0.005	0.474
n			3,947		3,947		3,947		3,947		3,947		3,947	
Adj R-Squared			0.2%		0.7%		0.2%		0.7%		0.3%		0.7%	

Table D.3 Continued

Panel B

Dependent Variable=Acquirer Interim BHARs			Section 404 - Gindex				Section 404 - Dictatorship				Section 404 - No Governance Controls			
			Clustered		Robust		Clustered		Robust		Clustered		Robust	
Variable	Predicted Sign		estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Acquirer with MW(s)	-	(H3)	-0.011	0.002	-0.003	0.168	-0.012	0.001	-0.003	0.191	-0.011	0.004	-0.003	0.176
GIndex	-		0.000	0.836	0.000	0.764								
Dictatorship	-						-0.004	0.407	0.001	0.633				
Natural Log AQ Market Cap	-		-0.001	0.081	-0.001	0.099	-0.001	0.049	-0.001	0.118	-0.001	0.081	-0.001	0.104
Acquirer Book-to-Market	+		-0.008	0.254	-0.001	0.807	-0.008	0.225	-0.001	0.864	-0.008	0.249	-0.001	0.827
Announcement Momentum	-		-0.016	0.014	-0.001	0.815	-0.016	0.016	-0.001	0.797	-0.016	0.013	-0.001	0.806
Acquirer NOA	-		0.000	0.987	-0.004	0.349	0.000	0.998	-0.004	0.338	0.000	0.983	-0.004	0.344
Acquirer Sales Growth	-		-0.008	0.446	0.008	0.131	-0.009	0.403	0.008	0.122	-0.008	0.458	0.008	0.127
Acquirer Total Accruals	-		0.009	0.615	-0.003	0.636	0.009	0.626	-0.003	0.684	0.009	0.608	-0.003	0.653
Only Stock Offer	-		0.025	0.616	-0.095	<0.001	0.025	0.622	-0.096	<0.001	0.025	0.617	-0.096	<0.001
Hostile	+		0.101	0.001	0.081	0.013	0.102	<0.001	0.080	0.013	0.100	<0.001	0.081	0.013
Small Acquirer	+		-0.010	0.505	-0.012	0.018	-0.010	0.482	-0.012	0.021	-0.009	0.535	-0.012	0.020
Acquirer Cash	-		0.011	0.677	-0.003	0.624	0.010	0.705	-0.003	0.700	0.012	0.679	-0.003	0.649
Target Public	-		-0.022	0.325	-0.013	<0.001	-0.022	0.328	-0.014	<0.001	-0.022	0.325	-0.013	<0.001
Different Industry	-		0.004	0.567	0.002	0.220	0.004	0.547	0.002	0.254	0.004	0.559	0.002	0.233
Intercept			0.028	0.231	0.015	0.118	0.029	0.161	0.013	0.150	0.026	0.254	0.014	0.124
n			2,094		2,094		2,094		2,094		2,094		2,094	
Adj R-Squared			0.7%		1.4%		0.8%		1.4%		0.8%		1.4%	

Table D.4 Corporate Governance Analyses – Post-Acquisition Period Returns Testing

The tables in this appendix report the results of analyses designed to address potential concerns that a correlated omitted variable (corporate governance) may be driving my primary results. To address these concerns, I report ordinary least squares regression results (p-values are adjusted for clustered standard errors, clustered on acquiring firm and year) and robust regression results (Huber 1973) for three different models. In the first model, I include a measure of corporate governance called "GIndex" developed by Gompers et al. (2003), provided by the Governance Legacy database within Risk Metrics. In the second model, I include an alternate measure of corporate governance called "Dictatorship" which takes on the value of 1 for firms with GIndex scores greater than the median GIndex score in the sample, else 0. Finally, I report a third model which does not include any corporate governance control variables, but the regression is only performed on the restricted sample of firms with corporate governance information available. The third model assists in distinguishing whether drops (or losses) of significance on my variable of interest "Acquirer with MW(s)" are driven by corporate governance as a control or by a relative loss of power compared to my primary analyses in Tables 5 through 8. Panel A (Panel B) of Table D.4 presents post-acquisition period abnormal returns testing on the Section 302 (Section 404) sample. All variables are defined in Appendix B or as described above. Year dummies are not shown. P-values presented are two-tailed except for p-values for the hypothesized variable which are one-tailed. P-values are presented in bold if significant at the 5% level or better.

Table D.4 Continued

Panel A

Dependent Variable=Acquirer Post-AQ BHARs			Section 302 - Gindex				Section 302 - Dictatorship				Section 302 - No Governance Controls			
			Clustered		Robust		Clustered		Robust		Clustered		Robust	
Variable	Predicted Sign		estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Acquirer with MW(s)	-	(H4)	-0.068	0.270	-0.055	0.110	-0.068	0.271	-0.057	0.104	-0.065	0.278	-0.053	0.120
GIndex	-		-0.006	0.233	-0.004	0.144								
Dictatorship	-						-0.022	0.255	-0.026	0.052				
Natural Log AQ Market Cap	-		-0.021	0.016	-0.013	0.004	-0.021	0.015	-0.014	0.003	-0.020	0.019	-0.013	0.006
Acquirer Book-to-Market	+		-0.021	0.768	-0.020	0.535	-0.020	0.769	-0.021	0.524	-0.019	0.782	-0.018	0.585
Announcement Momentum	-		-0.081	0.046	-0.084	0.008	-0.081	0.043	-0.083	0.009	-0.082	0.039	-0.084	0.008
Acquirer NOA	-		0.040	0.424	0.033	0.363	0.039	0.434	0.031	0.388	0.040	0.418	0.032	0.380
Acquirer Sales Growth	-		0.035	0.665	-0.024	0.520	0.036	0.650	-0.025	0.504	0.038	0.629	-0.023	0.549
Acquirer Total Accruals	-		-0.145	0.003	-0.110	0.036	-0.144	0.003	-0.108	0.041	-0.144	0.003	-0.110	0.037
Only Stock Offer	-		-0.088	0.008	-0.053	0.338	-0.089	0.010	-0.054	0.327	-0.088	0.010	-0.052	0.349
Hostile	+		-0.082	0.775	-0.090	0.757	-0.088	0.755	-0.088	0.761	-0.099	0.730	-0.101	0.727
Small Acquirer	+		-0.107	0.463	-0.134	0.004	-0.106	0.475	-0.135	0.003	-0.101	0.492	-0.131	0.004
Acquirer Cash	-		0.073	0.495	0.036	0.527	0.075	0.498	0.030	0.598	0.089	0.387	0.046	0.416
Target Public	-		-0.039	0.146	-0.025	0.322	-0.039	0.140	-0.024	0.327	-0.040	0.144	-0.025	0.314
Different Industry	-		0.011	0.523	0.005	0.701	0.011	0.542	0.005	0.684	0.009	0.601	0.004	0.782
Intercept			0.349	0.024	0.227	0.013	0.306	0.030	0.209	0.017	0.284	0.042	0.179	0.038
n			3,947		3,947		3,947		3,947		3,947		3,947	
Adj R-Squared			1.7%		0.6%		1.7%		0.7%		1.7%		0.6%	

Table D.4 Continued

Panel B

Dependent Variable=Acquirer Post-AQ BHARs			Section 404 - Gindex				Section 404 - Dictatorship				Section 404 - No Governance Controls			
			Clustered		Robust		Clustered		Robust		Clustered		Robust	
Variable	Sign	Predicted	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Acquirer with MW(s)	-	(H4)	-0.073	0.325	-0.058	0.054	-0.069	0.334	-0.057	0.059	-0.067	0.338	-0.054	0.068
GIndex	-		-0.009	0.065	-0.005	0.130								
Dictatorship	-						-0.014	0.595	-0.016	0.341				
Natural Log AQ Market Cap	-		-0.001	0.892	0.007	0.204	-0.001	0.936	0.007	0.195	0.000	0.973	0.008	0.161
Acquirer Book-to-Market	+		-0.071	0.185	-0.044	0.340	-0.069	0.175	-0.043	0.350	-0.068	0.166	-0.042	0.368
Announcement Momentum	-		-0.045	0.313	-0.030	0.519	-0.045	0.331	-0.028	0.545	-0.046	0.295	-0.029	0.522
Acquirer NOA	-		0.045	0.659	0.002	0.974	0.043	0.671	0.000	0.993	0.042	0.683	0.001	0.988
Acquirer Sales Growth	-		0.060	0.321	0.020	0.735	0.067	0.284	0.022	0.722	0.071	0.282	0.024	0.685
Acquirer Total Accruals	-		-0.088	0.416	-0.034	0.641	-0.086	0.422	-0.034	0.642	-0.085	0.431	-0.036	0.619
Only Stock Offer	-		-0.076	0.036	-0.067	0.521	-0.070	0.062	-0.065	0.535	-0.068	0.093	-0.063	0.548
Hostile	+		0.301	<0.001	0.268	0.473	0.269	<0.001	0.253	0.498	0.262	<0.001	0.245	0.512
Small Acquirer	+		0.142	0.195	-0.007	0.912	0.149	0.191	-0.006	0.920	0.152	0.187	-0.005	0.931
Acquirer Cash	-		0.147	0.445	0.044	0.562	0.159	0.403	0.048	0.524	0.166	0.356	0.058	0.440
Target Public	-		-0.003	0.938	-0.008	0.803	-0.003	0.934	-0.008	0.802	-0.003	0.930	-0.008	0.795
Different Industry	-		-0.031	0.188	-0.038	0.021	-0.033	0.170	-0.039	0.018	-0.034	0.171	-0.040	0.014
Intercept			0.062	0.707	-0.062	0.572	-0.019	0.908	-0.105	0.320	-0.031	0.842	-0.122	0.241
n			2,094		2,094		2,094		2,094		2,094		2,094	
Adj R-Squared			1.4%		1.0%		1.1%		1.1%		1.1%		1.1%	