Insider Trading Preceding Goodwill Impairments

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ABSTRACT: We investigate whether insiders strategically sell shares prior to the disclosure of goodwill impairment losses. We provide evidence that insiders of goodwill impairment firms engage in abnormal selling of their shares quarters prior to the announcement of such losses. In addition, of firms recording goodwill impairments, we provide evidence that those firms with insiders selling prior to the announcement of the loss face significantly more negative abnormal returns. Our findings are robust to subsample analysis examining firms reporting goodwill impairments and having low quality information environments (i.e., delayed price discovery). This isolates a setting wherein observed strategic trading behavior more likely reflects insiders' private information regarding goodwill, as opposed to other (non-goodwill related) economic performance. Overall, the results are consistent with corporate insiders being able to profit from their private information relating to a specific financial reporting element, goodwill impairments, prior to its incorporation by the equity market or recognition by the firm's accounting system.

Keywords: Goodwill, impairment, insider trading, SFAS 142

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Insider Trading Preceding Goodwill Impairments

I. INTRODUCTION

This study investigates whether firms' insiders strategically sell their stock holdings prior to the disclosure of goodwill impairment losses. Specifically, we examine whether insiders engage in abnormal selling behavior in the quarters prior to the impairment disclosure, and whether abnormal returns for firms with insiders engaging in selling behavior are relatively more negative than the returns of other impairment firms whose insiders do not sell prior to the disclosure. A number of recent studies provide evidence of insiders trading prior to the announcement of earnings performance measures: future earnings surprises (Piotroski and Roulstone 2005; Roulstone 2006; Henderson, Jagolinzer, and Muller 2009; Jagolinzer 2009), a break in a string of consecutive quarterly earnings increases (Ke, Huddart, and Petroni 2003), and price-relevant information disclosed in Form 10-K or 10-Q filings released following earnings announcements (Huddart, Ke, and Shi 2007).[1] What remains a puzzle, however, is the types of information aggregated into reported earnings that constitute the source of insiders' private information. Our study provides insights into this puzzle by investigating whether insiders trade ahead of a specific component of reported earnings—goodwill impairments.

The setting of goodwill impairments provides a unique opportunity to investigate whether firm insiders trade strategically prior to the release of a specific component of reported accounting earnings. First, goodwill impairment charges tend to be economically important. In our sample investigating goodwill impairments reported during 2002-2007 under Statement of Financial Accounting Standards (SFAS) 142, *Goodwill and Other Intangible Assets*, such charges average 11.9% of the market value of equity. Second, insiders likely possess private

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[1] Prior research also examines other aspects of the relation between insider trading and accounting information (e.g., Beneish and Vargus 2002; Jagolinzer and Roulstone 2008; Jayaraman 2008; and Rogers 2008).

information regarding the value of acquired goodwill. Managers frequently prepare internal budgets for each reporting unit, which include information (e.g., earnings projections) that directly relate to temporary and permanent declines in the value of acquired goodwill.[2] Given the proprietary nature of this information, however, such information is rarely publicly disclosed. Finally, insiders' private information advantage regarding the value of goodwill could be relatively long-lived due to goodwill impairment testing rules delaying the accounting recognition of economic goodwill impairments. Specifically, under SFAS 142, goodwill is tested for impairment only when the entire reporting unit is impaired—which can provide a substantial cushion if the fair value of the other assets in the reporting unit have risen above their carrying value. In addition, goodwill impairment testing provides opportunities for managers to use their discretion to further increase the cushion (e.g., through overestimation of future earnings) for both the reporting units and for specific assets and liabilities.

Despite the potential for a significant private informational advantage by insiders, it is an open question whether firm insiders trade on their private foreknowledge of goodwill impairments. Significant strategic selling by insiders before goodwill write-offs may not occur for two reasons. First, market prices may incorporate information regarding goodwill impairments on a timely basis. Prior research (e.g., Gu and Lev 2008) argues that part of the goodwill recorded at the time of purchase reflects overpayment in ill-advised acquisitions, and that the characteristics of the original acquisitions can be powerful predictors of the eventual goodwill write-offs. To the extent that market participants price any overpayment at the time of acquisition, this can limit or eliminate how much private information managers possess

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[2] Under SFAS 142, testing for goodwill impairment is a two-step process performed at the reporting unit level. First, a firm assesses if a reporting unit's fair value is less than its book value. If so, the firm then derives the implied fair value of goodwill by subtracting the fair value of the net assets of the reporting unit from the fair value of the reporting unit to obtain an implied fair value of the goodwill. If this implied fair value of goodwill is less than its book value, the difference is the goodwill impairment loss. In this process, internal budgets and earnings projections are critical in estimating the reporting unit and goodwill fair values.

regarding impaired goodwill. In addition, stock prices may incorporate information regarding goodwill impairments relatively quickly as investors have access to firm and industry performance measures, such as earnings and sales figures, which include prior reported and future forecasted amounts. Second, even if insiders have incentives to sell before the announcement of goodwill write-offs, legal and governance constraints and litigation concerns may limit their ability to do so (e.g., Huddart, Ke, and Shi 2007).

We examine the trading of insiders of firms reporting goodwill impairment charges under SFAS 142 during 2002-2007.[3] Similar to prior insider trading studies investigating other accounting events, our intent is to examine insiders' trading ahead of the price discovery by the market of the goodwill impairment, not just trading ahead of the short-window reaction to the formal release of the accounting goodwill impairment. That is, we end our analyses on the accounting release of the goodwill impairment, as little private information regarding the impairment should exist beyond that point, but allow that the market may obtain information regarding such losses months prior to the eventual release. We conduct our empirical analyses using a sample of all goodwill impairments. In addition, we examine two subsamples split by the quality of the information environment: low quality (defined as firms with below median analyst following) and high quality (defined as firms with above median analyst following). Our primary interest is in the low quality information environment, to isolate a setting in which price discovery regarding goodwill impairments more likely occurs closer to its formal public release (i.e., to mitigate the likelihood that trading on non-goodwill information explains our findings). Consistent with prior research suggesting a positive relationship between analyst following and the speed of price discovery (Brennan, Jegadeesh, and Swaminathan 1993; Brennan and

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[3] Our analyses focus on recognized goodwill impairments for a simple reason: they are observable, allowing empirical implementation. Similar strategic trading incentives exist for insiders of firms with impaired goodwill that avoid accounting loss recognition.

Subrahmanyam 1995; Kimbrough 2007), we expect in the low quality information environment that lower analyst following results in relatively less competition amongst analysts and less timely incorporation of information into market prices.[4]

Consistent with goodwill impairment charges leading to economically significant negative returns, for goodwill impairment firms in the low quality information environment we find that stock prices fall –5.53% (–2.44%) for the trading window of day –30 through +2 (day –2 through + 2), where day 0 is the earnings announcement date of the goodwill impairment quarter. In contrast, for goodwill impairment firms in the high quality information environment, we find that stock prices fall –2.96% (–0.53%) for similarly measured windows. In addition, consistent with goodwill impairment charges being impounded in prices later in a low quality information environment, we find that over 56% of the total stock price decline over the 18 months prior to the goodwill impairment occurs during the trading window of day –30 through +2 for firms in the low quality information environment. In contrast, we find that less than 12% of the total stock price decline occurs over the same period for firms in the high quality information environment.[5]

Regarding insiders' net selling behavior, we find evidence that insiders of firms reporting goodwill impairments are more likely relative to insiders of a group of control firms not reporting goodwill impairments to sell their holdings up to twenty-four months prior to the goodwill impairment announcement. Moreover, of firms recording goodwill impairments, firms where insiders are net sellers exhibit significantly more negative abnormal returns than firms where insiders are net buyers or do not trade shares. In addition, our results are robust to subsample analysis focusing on firms having low quality information environments, consistent

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[4] A number of other studies find similar evidence of lower information asymmetries in markets when analyst following is higher (e.g., Hong, Lim, and Stein 2000; Barth and Hutton 2004; and Ellul and Panayides 2008).
[5] Alternative windows (described later) provide similar inferences.

with the relatively less timely price discovery enabling insiders to better exploit any private information. These findings are consistent with insiders possessing private information regarding goodwill impairments that becomes incorporated into market prices in the quarters following insiders' sales.

These findings extend prior insider trading research investigating strategic trade prior to the release of accounting information. Specifically, our study provides evidence of a particular financial reporting item—goodwill impairments—that insiders appear to anticipate and trade on far in advance of its public disclosure. In addition, our findings extend prior research investigating managers' discretion over goodwill impairments by documenting evidence of an incentive for the delayed release of goodwill impairment amounts. Finally, our findings increase our understanding of how the equity market learns about information pertaining to goodwill impairments. Despite the relatively large magnitude of reported impairment losses, prior literature finds insignificant or relatively small negative market reactions to the announcement of these impairments (Francis, Hanna, and Vincent 1996; Bens, Heltzer, and Segal 2007). We provide evidence that market prices reflect goodwill impairment losses more rapidly in high quality information environments, and that market reactions to the announcement of goodwill impairments are substantially higher in low quality information environments.

In the next section, we present background information and develop our hypotheses. Section III includes our sample selection procedure and descriptive information. Section IV presents the research design and the empirical findings. Section V concludes.

II. BACKGROUND AND RESEARCH HYPOTHESES

In this section, we discuss the background on reporting goodwill impairment losses. We

also discuss our expectations about the trading behavior of corporate insiders in the quarters preceding goodwill impairment announcements. Regarding the latter, under the argument that goodwill impairments are sources of non-public information, we discuss the incentives of corporate insiders to sell their holdings prior to goodwill impairment announcements.

Background on Reporting Goodwill Impairment Losses

Accounting for goodwill has been the subject of debate for a number of years, reflected in an evolving framework to address the reporting of this asset. The issuance of Accounting Principles Board Opinion No. 17, *Intangible Assets*, in 1970 provided early guidance on the reporting of goodwill, with two major provisions. First, goodwill was to be amortized over a period not exceeding forty years; second, any impairment testing of goodwill would be performed at the enterprise level. The subsequent issuance of SFAS 121, *Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed Of*, in 1995 sought to provide more guidance of impairment testing. Specifically, goodwill impairments were only assessed when an asset or a group of assets acquired in a business combination were suspected of being impaired due to some "triggering" event (e.g., operating losses or change in intended use of the asset). During periods when one or more triggering events were present at the lowest cash-generating unit level, an impairment loss would occur if the recoverable value of the assets—defined as the undiscounted future cash flows—exceeded the carrying value of the assets. Most recently, SFAS 142, *Goodwill and Other Intangible Assets*, was issued in 2001 to revisit the reporting of goodwill, with three salient provisions. First, goodwill is no longer amortized, but must be tested annually for impairment. Second, the testing for impairment must occur at the reporting unit level, which often aligns with a firm's operating segment level reported under the provisions of SFAS 131, *Disclosures about Segments of an Enterprise and*

Related Information. Finally, the impairment assessment is dictated under a two-step impairment test as follows: assess if the reporting unit fair value is less than its book value; if so, then derive the implied fair value of goodwill by subtracting the fair value of the net assets of the reporting unit from the fair value of the reporting unit; if the implied fair value of the goodwill is less than its book value, the difference is the reported goodwill impairment.

Research Hypotheses

Prior research provides evidence of corporate insiders strategically trading on news prior to its public announcement. For instance, a relatively large number of studies provide evidence of managers trading prior to the announcement of corporate events such as acquisitions (Seyhun 1990), bankruptcy (Seyhun and Bradley 1997), initiations of dividends (John and Lang 1991), seasoned equity offerings (Karpoff and Lee 1991), and share repurchases (Lee, Mikkelson, and Partch 1992). In addition, more recent studies provide evidence of insiders trading prior to the announcement of earnings performance measures such as earnings announcements (Piotroski and Roulstone 2005; Roulstone 2006; Henderson, Jagolinzer, and Muller 2009; Jagolinzer 2009), a break in a string of consecutive quarterly earnings increases (Ke, Huddart, and Petroni 2003), and price-relevant information disclosed in Form 10-K or 10-Q filings released following earnings announcements (Huddart, Ke, and Shi 2007).[6]

What remains unexplored is the specific types of information aggregated in reported earnings that are the source of managers' private information. Goodwill impairment charges represent a particularly promising earnings component that insiders could strategically trade ahead of (i.e., prior to its incorporation by the equity market or its accounting recognition).

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[6] Earlier research (e.g., Elliot, Morse, and Richardson 1984; Givoly and Palmon 1985; Sivakumar and Waymire 1994) fails to find evidence of strategic trade by corporate insiders prior to earnings announcements.

Specifically, goodwill impairment losses typically represent sizable charges against earnings. In addition, insiders have access to internal budget estimates, which are updated with regular frequency. These budgets contain profitability forecasts that are critical in assessing the value of recorded goodwill amounts, and are not typically disclosed externally. Finally, impairments in the value of recorded goodwill could be a source of private information for insiders over relatively extended time periods. Under SFAS 142, impairments of specific assets, such as goodwill, are only recognized when the entire reporting unit is impaired—i.e., when the fair value of the reporting unit falls below its carrying value. Thus, a considerable cushion regarding the recording of goodwill impairment losses can exist if the fair value of the other assets in the unit exceeds their carrying value. In addition, given that goodwill impairment testing requires estimating fair values for both the reporting units and for specific assets and liabilities in the absence of verifiable market prices, considerable managerial discretion can contribute to an even greater cushion. The views of the practitioner literature express concerns over the managerial discretion afforded by SFAS 142 (e.g., Hlousek 2002).

Consistent with managers having considerable discretion over the timing and measurement of goodwill impairment losses under SFAS 142 and earlier financial reporting standards, prior and concurrent academic research has found evidence of managers acting opportunistically when recognizing goodwill impairment losses. In the first analysis of such discretion, Francis, Hanna, and Vincent (1996) provides evidence that goodwill impairment losses announced during 1989-1992 (a time-period lacking explicit guidance regarding goodwill impairments) are substantially affected by reporting incentives such as those to manage earnings upward or smooth earnings and, in the case of newly hired CEOs, to take a "big bath." In addition, the study fails to find a market reaction to announcements of goodwill impairment

losses, which is interpreted as the measurement of goodwill impairment losses being adversely affected by managerial reporting incentives. More recently, studies investigating SFAS 121 and 142 goodwill impairment losses provide evidence of significant managerial influence over the reporting of goodwill impairment losses (Riedl 2004; Beatty and Weber 2006; Anantharaman 2008; Ramanna and Watts 2008), but find some evidence of negative market reactions to the announcement of goodwill impairment losses (Li, Schroff, and Venkataraman 2004; Ahmed and Guler 2007; Bens, Heltzer, and Segal 2007).

Given that the goodwill impairment losses under SFAS 142 may be privately known by corporate insiders far in advance of their market and accounting recognition, corporate insiders face incentives to behave strategically with respect to their trades prior to the public announcement of such losses. Assuming that corporate insiders privately infer that a goodwill impairment loss has occurred and may ultimately be recognized in the financial reports in the future, insiders will delay planned purchases (e.g., to achieve some targeted stock ownership level) and accelerate planned sales (e.g., for personal liquidity needs). If the price impact of their private information ends with public disclosure, these trading incentives will continue until the goodwill impairment loss is recognized.

Despite these incentives for strategic trade by insiders, it is unclear *ex ante* that insiders would unwind their holdings before the public announcement of a goodwill write-off. Corporate insiders may not trade strategically in advance of goodwill impairment announcements for a number of reasons. First, managers and other insiders may have little private information regarding goodwill impairment losses prior to their recognition. For instance, investors may infer goodwill impairment losses from alternative sources of information. One possible source is the characteristics of the original acquisition that gave rise to the goodwill. Gu and Lev (2008)

provides evidence that factors suggesting overpayment in acquisitions can be powerful predictors of future goodwill impairments. Another possible source of information is firm and industry performance measures (e.g., earnings and sales figures), which would include past reported amounts as well as future amounts forecasted by managers and analysts.

In addition, insiders face legal constraints and litigation concerns when trading or entering trading plans while in possession of material non-public information. Under Rule 10b5, promulgated by the U.S. Securities and Exchange Commission (SEC) under the *Securities and Exchange Act* of 1934, insiders are prohibited from trading while in possession of material non-public information. Enforcement of Rule 10b5 by the SEC has historically focused on insiders' trades occurring prior to sharp price movements (Fried 1998), which might be expected around goodwill impairments. During our sample period, insiders also can trade within Rule 10b5-1 trading plans (promulgated by the SEC in October 2000). Rule 10b5-1 trading plans allow insiders to enter into preplanned trades while not in possession of material nonpublic information. The intent of such plans is to provide insiders with a means to engage in uninformed diversification trade. However, prior and concurrent research provides evidence that, despite the assumption of uninformed diversification trade, insiders engage in strategic trade within Rule 10b5-1 trading plans as well (Henderson, Jagolinzer, and Muller 2009; Jagolinzer 2009).

In summary, corporate insiders face incentives to sell their holdings prior to the public release of goodwill impairments if such disclosures reveal managers' private information. In addition, if insider net selling activity reflects insiders' private information regarding the underlying impact of a future goodwill write-off, we expect firms whose insiders are net sellers to experience relatively lower abnormal returns subsequent to insider trading. However,

managers will not trade prior to goodwill impairment announcements if market prices largely reflect upcoming impairments due to investors having access to other sources of information regarding goodwill impairments, or if managers face significant legal jeopardy. These arguments lead to our two research hypotheses (stated in alternative form):

H_1: Corporate insiders are net sellers of their company's shares prior to goodwill impairment announcements.

H_2: For firms reporting goodwill impairments, firms where corporate insiders are net sellers of their company's shares prior to goodwill impairment announcements face lower abnormal returns relative to firms where corporate insiders are not net sellers of their company's shares.

III. SAMPLE SELECTION AND DESCRIPTIVE INFORMATION

We first identify firms on Compustat Xpressfeed Quarterly reporting goodwill impairments during the period 2002–2007. Our starting point is 2002 to coincide with the effective year of SFAS 142 for most firms and to maintain consistency in the reporting standards underlying goodwill impairment, since SFAS 142 introduced a number of significant changes for goodwill valuation and reporting. Because some of our empirical tests focus on the time period preceding the reported goodwill impairment, we retain only the first quarterly goodwill impairment for each firm that reports multiple quarterly goodwill impairments, to avoid potential confounding effects arising from overlapping pre-goodwill impairment periods. We further restrict our sample to firms listed on the three major US stock exchanges (AMEX, NASDAQ and NYSE) to ensure sufficient liquidity in the markets the insiders may be trading on. After eliminating observations lacking necessary data for our analyses, we obtain a sample of 612 goodwill impairment firms ("GW Impair" sample). We collect financial information from

Compustat Xpressfeed Quarterly, stock returns from CRSP, and insider trading from Thompson Financial.[7]

Panel A of Table 1 presents descriptive statistics for the GW Impair sample ($N = 612$) as well as for all Compustat firm-quarter observations having positive goodwill values but no reported goodwill impairments during our sample period ($N = 49,574$). The GW Impair observations have higher representation in the fourth fiscal quarter. However, the final column suggests the magnitude of goodwill impairments is not systematic across quarters, and ranges from 1% to 23% of lagged market value of equity. Panel B presents the frequency of goodwill impairments for our sample firms, with the majority of firms (63.6%) reporting only one goodwill impairment over the six-year sample period. Table 2 provides the industry composition of the GW Impair sample, which is generally similar to that of the Compustat population of firms reporting goodwill, with the impairment sample reflecting a higher (lower) proportion of firms in the electronic equipment (depository institutions) industry. The three industries with the largest representation in our GW Impair sample are business services (13.4%), electronic equipment (10.1%), and machinery and computers (6.2%).

Table 3 presents descriptive statistics comparing the GW Impair sample to the overall sample of Compustat firms not reporting goodwill impairments. There is some evidence that firms reporting goodwill impairments are smaller (*SIZE*) though slightly more followed by analysts (*FOLLOW*). GW Impair firms have significantly lower profitability (*ROA*) and higher book to market ratios (*BTM*), with the latter two variables inclusive of any reported goodwill impairment. GW Impair firms also have relatively higher levels of goodwill in the quarter just prior to the reported goodwill impairment (*LAG_GW*); however, this difference becomes

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[7] We are unable to collect information regarding the acquisitions that give rise either to the underlying goodwill or the reported goodwill impairment, as firms rarely provided sufficient disclosure to link the impairment to specific acquisitions.

insignificant after the impairment is reported (*GW*). The GW Impair firms also report more frequent restructuring charges (*RESTRUCT_D*) and concurrent write-offs of non-goodwill assets (*OTH_IMPAIR_D*). These latter differences reveal that goodwill impairments do not occur in isolation, and suggest the importance of controlling for other concurrent charges in our multivariate analyses.[8] Finally, the mean (median) magnitude of the goodwill impairment for our sample is 11.9% (2.3%) of the beginning market value of equity, indicating these impairments are economically significant events.

To further assess the economic significance of goodwill impairment losses, we present in Panel A of Figure 1 stock returns over the window (–30, 2) relative to day 0, the earnings announcement date for the goodwill impairment quarter. Our choice of day –30 to begin the trading window follows prior insider trading literature (Ke, Huddart, and Petroni 2003). In addition, this window measurement is chosen to capture both the earnings announcement and pre-announcement for the impairment quarter, since Bens, Heltzer, and Segal (2007) find that most goodwill impairment announcements are included with either the quarterly earnings announcement or the pre-announcement. We also decompose the sample of goodwill impairment firms into two groups: those with low quality information environments, and those with high quality information environments. This isolates a group of firms—those having low quality information environments—in which early price discovery of goodwill impairments is less likely to occur. We designate firms as having low (high) quality information environments when analyst following is below (above) the median. This follows prior research, which suggests that competition among analysts leads to more timely price discovery (e.g., Brennan,

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[8] The mean for restructuring charges scaled by lagged market value of equity for the sample of 612 goodwill impairment firms is 0.005, while that for other impairment charges similarly scaled is 0.010. Thus, while these charges occur frequently within the goodwill impairment sample, their relative economic magnitude appears considerably smaller than the goodwill impairment charges.

Jegadeesh and Swaminathan 1993; Brennan and Subramanyam 1995; Kimbrough 2007) and lower information asymmetries in markets (e.g., Hong, Lim, and Stein 2000; Barth and Hutton 2004; and Ellul and Panayides 2008).

Panel A of Figure 1 presents descriptive information consistent with this notion. First, there is a –5.53% (–2.96%) negative stock return surrounding the announcement of the goodwill impairment for firms that operate in a low (high) quality information environment, as measured over the trading window of (–30, 2). Untabulated analysis indicates that the magnitude of stock returns over the window (–2, +2) relative to the earnings announcement for the goodwill impairment quarter is on average –2.44% (–0.53%) for the low (high) quality information environment firms. In addition, data presented below Panel A reveals that for low quality information environment firms, a larger portion of the cumulative abnormal return occurs in proximity to the announcement of the goodwill impairment. For example, 56.07% of the total price response over the window (–375, 2) (which corresponds to approximately 18 calendar months or 6 fiscal quarters) occurs in the window (–30, 2) for the low quality information environment firms, relative to 11.84% for firms designated as having high quality information environments. Taken together, these findings are consistent with goodwill impairments having economic significance, especially for firms operating in a low quality information environment where price discovery occurs closer to the accounting recognition of goodwill impairments.

To provide a more complete description of this price discovery process, Panel B of Figure 1 reveals long-window stock returns before goodwill impairment announcements. Low quality information environment firms exhibit relatively less negative run-downs in stock price in the window (–375, –31), consistent with delayed price discovery of goodwill impairments for this subset of firms. Data presented below this panel show that the low quality information

environment firms experience positive average earnings surprises for five out of the six quarters preceding the goodwill impairment, while high quality information environment firms have significantly negative earnings surprises. These differences highlight the importance of controlling for unexpected earnings in our multivariate analysis. In addition, both panels suggest that separate examination of these subsamples, with particular focus on firms having low quality information environments, will better isolate a setting in which any identified price response more likely reflects information relating to the goodwill impairment, versus other (non-goodwill related) economic performance of the firm.

IV. RESEARCH DESIGN AND EMPIRICAL RESULTS

We now present the results of our empirical analyses examining insider trading behavior preceding reported goodwill impairments. We first examine whether the incidence of net insider selling is higher for firms reporting goodwill impairments relative to those not reporting goodwill impairments. We then focus our analyses on those firms reporting goodwill impairments, and examine whether the abnormal returns for firms with insiders that are net sellers are more negative than for those firms with insiders that either do not trade or are net buyers. Following our above discussion, we also separately conduct both analyses on two subsamples of firms: those having low versus high quality information environments.

Insider Trading Before Goodwill Impairments

Based on the findings of prior research that the reporting of goodwill impairments lags the economic impairment of goodwill (e.g., Hayn and Hughes 2006; Ramanna and Watts 2008), we investigate whether informed investors, specifically firm insiders, take advantage of the delays in the recognition of goodwill impairments and trade in anticipation of them. We

structure our multivariate analysis by focusing on the two years preceding the reported goodwill impairment, divided into four non-overlapping six-month periods (see Figure 2 for a timeline). We adopt this relatively long time frame based on the findings of prior research, which provides evidence that firm insiders are able to disguise their informed trading by avoiding trades reported too close to a relevant reporting event. For instance, Ke, Huddart, and Petroni (2003) document that stock sales by insiders increase three to nine quarters prior to a break in a string of consecutive quarterly earnings increases. In addition, a longer time frame appears particularly relevant for our setting of goodwill impairments, as SFAS 142 requires firms to test their goodwill for impairment annually (at the same time every year), suggesting insiders may obtain private information about future impairments at least one year before the actual loss reporting. If a firm narrowly avoids recording a goodwill write-off in the current period and the firm insiders anticipate no substantial economic improvement over the following reporting period, they may infer that a future goodwill write-off is unavoidable.[9]

To mitigate the concern that our empirical model captures trading activities that are unrelated to the desire to profit from the anticipated goodwill impairment reporting, we estimate our regressions using a comprehensive sample that includes both the goodwill impairment firms and a group of control firms. The latter is comprised of all firms having available data for our analyses, but not reporting goodwill impairments. Inclusion of these firms provides a benchmark to control for typical insider trading activity coinciding with our sample period. Rather than using all possible observations for each control firm, which would result in more than 120,000 control firm year observations, we sample the control firms at the same rate as the sample firms—one observation per firm. Specifically, similar to the selection of comparison firms in

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[9] In addition, anecdotal evidence indicates that testing goodwill for impairment is a lengthy task than can last several months (PriceWaterhouseCoopers 2008).

related research (e.g., Lee, Mikkelson, and Partch 1992), we randomly select a single quarter within our sample period to determine the reporting window for each control firm.

We first conduct univariate comparisons of the occurrence of net insider selling (denoted as *NETSELL_D*) preceding the reported goodwill impairment. We measure *NETSELL_D* as an indicator variable equal to one for firms that experience net insider selling (that is, total sales by insiders that exceed total purchases), and zero otherwise. Three salient features of our net insider selling variable warrant discussion.

First, we employ a dichotomous (versus continuous) measure as the functional form relating net insider selling and our primary variable of interest (goodwill impairment) is unclear. That is, a number of constraints (e.g., litigation concerns) likely inhibit substantial net insider trading, suggesting net insider selling is not uniformly increasing in the existence of an impairment.[10]

Second, we define insiders based on transactions of corporate officers.[11] We include all officers for two reasons. Senior officers (e.g., CEO, CFO) likely face greater scrutiny and thus litigation risk, creating tension on whether observed trading will occur only for this subset of officers. In addition, it is difficult to isolate what level of officer possesses private information regarding the value—including potential impairment—of goodwill. However, inclusion of officers lacking this information will lead to noise in the construction of *NETSELL_D*. Finally,

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[10] Nonetheless, we also compute a continuous measure of insider trading defined as the number of shares sold divided by the number of shares sold plus the number of shares purchased by firm insiders. Similar measures have been used in prior insider trading studies (e.g., Lakonishok and Lee 2001; Piotroski and Roulstone 2005). In our setting, about 60% of the goodwill impairment firms have insider sale ratios equal to zero (i.e., no selling occurs), 35% equal to one (i.e., all trades are sales), and only about 5% of the observations fall between zero and one. The large number of observations equal to one is expected, which is attributable to very few insider purchases for the impairment firms. Not surprisingly, our univariate results are unchanged employing this alternative measure. Results are also similar using an insider sale ratio based on trade values (as opposed to number of shares).

[11] The SEC defines the term "officer" to include: a company's president; principal financial officer; principal accounting officer; vice president in charge of a principal business unit, division, or function (such as sales, administration, or finance); and any other person, who performs a policy-making function for the company. Thus, a vice president, who is not in charge of a principal unit and is not a policy-maker, is not considered an insider or Section 16 officer.

we exclude transactions of company directors, since prior research (e.g., Piotroski and Roulstone 2005) hypothesizes and finds that directors only meet periodically and are less likely than firm officers to have timely access to performance-related information.

Third, following prior literature (Piotroski and Roulstone 2005; McVay et al. 2006), we include in the calculation of our insider trading measure only open-market transactions to eliminate the impact of insider trades related to option and stock grants. We assess *NETSELL_D* over the following four non-overlapping windows, all defined with respect to month 0, the last month of the quarter in which the goodwill impairment is reported: (–23,–18), (–17,–12), (–11,–6), and (–5, 0).[12]

To examine the cross-sectional determinants of insider trading, we then adopt the following logistic regression to investigate whether insiders strategically sell ahead of anticipated goodwill impairments:[13]

$$NETSELL\_D_{(Window)} = \varphi_0 + \varphi_1 GWI\_D + \varphi_2 SIZE + \varphi_3 BTM + \varphi_4 RETBH$$
$$+ \varphi_5 RESTRUCT\_D + \varphi_6 OTH\_IMPAIR\_D + \sum_{k=0}^{K} \varphi_{7,t-k} UE\_Q_{t-k} + \varepsilon \quad (1)$$

where:

NETSELL_D(Window)	= an indicator variable equal to one for firms that experience net insider selling (i.e., total sales greater than total purchases) over the indicated six-month trading window, and zero otherwise;
GWI_D	= an indicator variable equal to one for firms reporting a goodwill impairment in quarter *t*, and zero otherwise;
SIZE	= log of total assets measured at the end of the indicated six-month window;
BTM	= the book-to-market ratio measured at the end of the indicated six-month

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[12] Following prior literature (Lakonishok and Lee 2001), we aggregate insider trades over six-month windows. Calculating insider trading measures based on shorter periods (such as a month or a quarter) results in many companies having no trades. Lakonishok and Lee (2001) argue that insider trading measures computed over six-month windows have greater predictive power.

[13] We also estimate equation (1) including time fixed effects to control for potential effects specific to different quarters within our sample period. The results are very similar to those tabulated.

window;

RETBH   = the buy-and-hold return measured over the six-month window prior to
                      the indicated insider trading measurement window;

RESTRUCT_D   = an indicator variable equal to one for firms reporting restructuring
                      charges in quarter *t* (the goodwill impairment quarter), and zero
                      otherwise;

OTH_IMPAIR_D   = an indicator variable equal to one for firms reporting any non-goodwill
                      impairments in quarter *t* (the goodwill impairment quarter), and zero
                      otherwise; and

UE_Q$_{t-k}$ = the unexpected earnings for quarter *t-k*, where the unexpected earnings
                      are measured as earnings at the end of quarter *t-k* minus earnings at the
                      end of quarter *t-k-4*, scaled by market value of equity at the end of
                      quarter *t-k-1*.

Paralleling the univariate analysis, equation (1) is estimated separately for four dependent

variables, *NETSELL_D$_{(Window)}$*, measured over the following monthly intervals preceding the

reported impairment: (–23,–18), (–17,–12), (–11,–6), and (–5,0). Our primary variable of

interest is *GWI_D*. Similar to *NETSELL_D*, we measure goodwill impairments as a dichotomous

variable. We do not use a continuous variable as it would require the market expectation of

goodwill impairment (which is not separately observable), and as insider trading may not

increase monotonically with the size of the unexpected goodwill impairment (e.g., due to

possible litigation risks). If firm insiders are able to predict forthcoming goodwill impairments,

and trade in anticipation of these reported amounts, we expect the probability that a firm

experiences net informed selling to be higher for the goodwill impairment firms relative to the

non-impairment firms, leading to a positive predicted coefficient for *GWI_D* and our primary test

of H$_1$.

We also include variables to control for other determinants of insider trading. First, we

include firm size (*SIZE*) to proxy for portfolio rebalancing that is unrelated to private information

trading. For larger firms, insiders are likely to hold larger stock and stock option positions.

Therefore, we expect a positive association between the probability of selling stock and *SIZE*, if

insiders with large stock holdings sell in an attempt to reduce their exposure to firm idiosyncratic

risk. We also include the book-to-market ratio (*BTM*) to proxy for growth, with both

components measured at the end of the indicated six-month period. Prior literature (Rozeff and

Zaman 1988; Piotroski and Roulstone 2005) shows that insiders are more likely to hold larger

stock positions as stocks change from growth to value categories; thus, we predict a negative

coefficient for *BTM*. In addition, we include prior period returns (*RETBH*) because insiders tend

to be contrarian (Lakonishok and Lee 2001), leading to a predicted positive coefficient.

We also include control variables, *RESTRUCT_D* and *OTH_IMPAIR_D*, for other types

of restructuring and impairment charges to address the concern that we attribute any potential

informed trading activity to goodwill impairments when, in fact, such trading may reflect

information contained in other types of charges. Because the expected direction of trading in the

context of these other charges is unclear, we do not predict the sign for these coefficients.

Finally, to control for informed trading that could occur on a broader set of financial data,

we also include in equation (1) the unexpected earnings for each of the quarters occurring from

the start of the trading window up to the quarter of the reported impairment. Specifically,

following Ke, Huddart, and Petroni (2003), we define UE_Q_{t-k} as the unexpected earnings for

quarter *t-k*, measured as the seasonally-adjusted change in quarterly earnings scaled by the

lagged market value of equity.[14] We include *K* quarters of unexpected earnings for each window

to capture the full series of reporting quarters overlapping with the trading windows, where *K* is

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[14] In sensitivity analyses, we investigate whether our findings are robust to breaks in earnings strings. Following the findings of Ke, Huddart, and Petroni (2003), we include an indicator variable equal to one for a break in the string of earnings increases for the impairment quarter for strings of 3 quarters (and alternatively, a string of 5 quarters), and zero otherwise. Our results remain unchanged.

the number of quarters between the insider trading window and the impairment reporting quarter. For example, when the insider trading variable is measured over the window months (–5, 0), we include in equation (1) unexpected earnings for two quarters—the goodwill impairment quarter and the quarter prior to the goodwill impairment. When the insider trading variable is measured over the window months (–11, –6), we include in equation (1) unexpected earnings for four quarters—the goodwill impairment quarter and the three quarters prior to the goodwill impairment. Finally, note that the unexpected earnings for the quarter with the reported goodwill impairment excludes the goodwill and other asset impairments and restructuring charges from its measurement, as these are all explicit variables within the regression.

Table 4 presents the univariate analysis of insiders' net selling behavior prior to the impairment announcement. We compare the mean and median values of *NETSELL_D* for the goodwill impairment firms versus the non-impairment (control) firms for each of the four windows. For three out of the four six-month trading windows, firms reporting a goodwill write-off are significantly more likely to experience net insider selling relative to the non-impairment firms. Specifically, we find that 43.5%, 46.8% and 42.9% of the goodwill impairment firms experience net insider selling over the corresponding windows of (–23,–18), (–17,–12) and (–11,–6) prior to the reported goodwill impairment. Over the same measurement windows, only 36.4%, 36.4% and 37.1% of non-impairment firms experience net insider selling. The differences between these two firm types are significant at a *p*-value less than 1% both for the means and the medians. However, we fail to find evidence of differences in net insider selling for the window (–5, 0).

Table 5 presents multivariate results from estimating equation (1) for each of the four windows. As insiders' selling activities may be correlated in time, we report standard errors

clustered by time (Petersen 2009). We do not cluster the standard errors by firm, since each firm in our analysis enters the sample just once. For the windows (–17,–12) and (–11,–6), consistent with our hypothesis and with the univariate analysis, we find a significantly positive coefficient for *GWI_D* (*z*-statistics = 3.115 and 2.177, respectively). This finding indicates that, controlling for other determinants of net insider selling activity, firms reporting goodwill impairments experience significantly higher insider selling over the windows (–17,–12) and (–11,–6) compared with firms reporting no such impairments. We also find some evidence (although marginally significant) of higher insider selling for goodwill impairment firms over the window (–23, –18). However, when insider trading activities are measured over the window (–5, 0), we fail to find evidence of significantly higher insider selling activity as the coefficient on *GWI_D* is insignificant (*z*-statistics = 0.117). Among the control variables, we find that the coefficients for *SIZE*, *BTM*, and *RETBH* are significantly positive, negative, and positive (respectively) in the predicted direction across all trading windows, as predicted. We find limited significance across the windows for the remaining control variables.

It is interesting to note that the timing of abnormally high insider selling volume centers near the (likely) annual impairment testing for the year preceding the actual goodwill impairment reporting (i.e., the 18 to 6 months prior to the reported goodwill impairment). While not definitive, this evidence is suggestive that during the current year's impairment testing insiders are able to generate private information about the probability of having to record goodwill impairments for the ensuing year, and trade in accordance with this inferred probability.[15]

We then examine insider trading on the subsamples of firms having low versus high quality information environments. As discussed previously, we designate firms as having low

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[15] For example, a narrow avoidance of a goodwill impairment loss for the current year may allow insiders to infer that absent a substantial improvement in the firm's economic performance, a write-off is unavoidable for the next year.

(high) quality information environments if they have below (above) median analyst following. For this analysis, our primary interest resides in the low quality information environment, as this will provide evidence that our findings are robust when news regarding goodwill impairment charges occurs closer to its formal release (i.e., to mitigate the likelihood that trading on non-goodwill information explains our findings).

For this insider trading analysis, analyst following is determined at the end of each of the four trading windows.[16] Table 6 presents the results of this subsample analysis. Panel A, which focuses on firms with low quality information environments, reveals that insiders exhibit abnormal selling across all four trading windows, reflected in significantly positive coefficients for *GWI_D* for the trading window –23 to –18 (*z*-statistic = 3.496), the trading window –17 to –12 (*z*-statistic = 6.962), the trading window –11 to –6 (*z*-statistic = 3.040), and the trading window –5 of 0 (*z*-statistic = 2.948). In contrast, results in Panel B, which focus on firms with high quality information environments, provide weaker evidence of abnormal selling, reflected in an insignificant coefficient for *GWI_D* for the trading window –23 to –18 (*z*-statistic = 1.322), a significant coefficient for the trading window –17 to –12 (*z*-statistic = 2.288), and insignificant coefficients for the trading windows –11 to –6 (*z*-statistic = 1.498) and –5 of 0 (*z*-statistic = – 0.770). Results for the control variables across both panels are unchanged from the primary analysis. Overall, the results are consistent with insiders exhibiting abnormal selling preceding the announcement of goodwill impairments, and that—at least for firms designated as having low quality information environments—this is unlikely driven by economic performance

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[16] Because the distribution of analyst following contains only integers, a relatively large number of observations have analyst following values equal to the median value. In our main analysis we allocate these observations to the low quality information environment. We also conduct an additional sensitivity test to provide an equal number of observations for each subsample. Specifically, for firms with equivalent analyst following values at the median, we designate those with smaller (larger) market capitalization as having lower quality (higher quality) information environments, under the assumption that market capitalization is positively correlated with overall quality of the information environment. Our inferences remain unchanged.

unrelated to goodwill impairments.

Abnormal Returns to Insider Trades Preceding Goodwill Impairments

The evidence presented in Tables 4 through 6 indicates that insider selling for firms reporting goodwill impairments exceeds that for non-impairment firms. If this abnormally high insider selling activity is based on insiders' private information about the negative effect of a future goodwill write-off, we expect firms where insiders are net sellers to experience lower abnormal returns subsequent to insider trading compared to firms where insiders are net buyers or do not trade. To investigate this possibility, we first examine univariate differences in abnormal returns across these two groups of firms. We compute the abnormal buy-and-hold returns over windows that start directly after the end of six insider trading windows, and end with the last month of the goodwill impairment quarter (i.e.., month 0). The six windows are as follows:

Insider Trading Window Months	Abnormal Buy-and-Hold Return Months
(–8, –3)	(–2, 0)
(–11, –6)	(–5, 0)
(–14, –9)	(–8, 0)
(–17, –12)	(–11, 0)
(–20, –15)	(–14, 0)
(–23, –18)	(–17, 0)

To examine the cross-sectional determinants of abnormal buy-and-hold returns associated with insider trades for firms reporting goodwill impairments, we adopt the following equation:[17]

$$ABNORMAL\_RET_{(Window)} = \phi_0 + \phi_1 NETSELL\_D + \phi_2 SIZE + \phi_3 BTM + \phi_4 RETBH$$
$$+ \phi_5 RESTRUCT\_D + \phi_6 OTH\_IMPAIR\_D + \sum_{k=0}^{K} \phi_{7,t-k} UE\_Q_{t-k} + \varsigma \qquad (2)$$

where:

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[17] We also estimate equation (2) for all of our six windows of interest including time fixed effects to control for potential effects specific to different quarters within our sample period, obtaining similar results.

ABNORMAL_RET   =   the buy-and-hold abnormal returns to insider trades, computed over windows starting directly after the end of the insider trading window and ending with the last month of the goodwill impairment quarter (month 0).

The dependent variable, *ABNORMAL_RET*, is measured as the difference between the raw return for the firm and the corresponding return of the value-weighted market index. All other variables are as previously defined. We measure insider trades over six-month rolling windows starting two years prior to the impairment event, and identify goodwill impairment firms where insiders are net sellers (*NETSELL_D* = 1) versus goodwill impairment firms where insiders are either net buyers or do not trade (*NETSELL_D* = 0).[18] We then compute abnormal buy-and-hold returns over the period beginning directly after the insider trading window and ending with the goodwill impairment quarter.   Thus, paralleling the univariate analyses, equation (2) is estimated separately for six dependent variables, *ABNORMAL_RET*$_{(Window)}$ measured over the following monthly intervals preceding the reported impairment: (–17,0), (–14,0), (–11,0), (–8,0), (–5,0), and (–2,0).

   Our primary variable of interest is *NETSELL_D*. The variable captures the market-adjusted return avoided by insiders, who sell stock during the six-month insider trading window rather than waiting to execute the sale until the goodwill impairment is publicly announced. The variable is defined similarly for firms reporting goodwill impairments but not having insiders with net selling activity. If firm insiders selling their company's shares prior to goodwill impairment announcements have greater private information regarding negative circumstances leading to an economic impairment of goodwill than those not selling their company's shares prior to the announcement, then we expect firms with insiders selling their shares to experience

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[18] In the abnormal return to insider trading analysis, we compare goodwill impairment firms where insiders are net sellers versus all the other goodwill impairment firms where insiders are either net buyers or do not trade. We combine net buyers with non-traders because in our sample the number of net buyers is very small.

lower abnormal returns. This is our primary test of H₂.

To address the concern that the differences in buy-and-hold returns between firms with and without net insider selling are, in fact, driven by other firm characteristics that are correlated with insider trading, we include in equation (2) control variables for firm size (*SIZE*), book to market ratio (*BTM*) and past returns (*RETBH*). As explained previously in the variable description for equation (1), these firm characteristics should be correlated with insider trading. In addition, prior literature identifies these characteristics as stock return determinants. We also include control variables for other types of impairments and restructuring charges (*RESTRUCT_D* and *OTH_IMPAIR_D)* and for the unexpected earnings for each of the quarters occurring from the start to the end of the return window (UE_Q_{t-k}). These variables address the potential concern that we attribute the abnormally low returns for net insider selling impairment firms to insiders' private information about the loss in value of goodwill when, in fact, the lower returns are driven by a higher frequency of restructuring charges, other types of impairments, and/or negative earnings surprises for the net insider selling firms relative to no trading or net buying firms.

Table 7 presents univariate mean and median buy-and-hold abnormal return comparisons for goodwill impairment firms having net insider selling versus all other goodwill impairment firms. Figure 3 plots the mean buy-and-hold abnormal returns for each window. All goodwill impairment firms experience negative average abnormal returns in the quarters leading to the impairment, reflected in the negative mean and median returns for both net insider selling impairment firms as well as all other impairment firms across all return windows. However, the firms where insiders are net sellers have significantly more negative abnormal stock returns compared to the firms where insiders are not net sellers. Specifically, significant negative

differences occur for the return windows of –11 to 0 (where the incremental negative return is –0.070, t-statistic = 2.020), –14 to 0 (–0.108, t-statistic = 2.740), and –17 to 0 (–0.129, t-statistic = –3.010). The difference between net insider selling and the other impairment firms are not only statistically significant, but also economically significant. For example, using the insider trading window of (–23,–18), firms where insiders are net sellers experience an average abnormal return of –23.4% over the eighteen months leading to the reported goodwill impairment, compared to only –10.5% for the impairment firms where insiders are not net sellers.

Table 8 presents multivariate results from estimating equation (2) for each of the six windows. Again, as insiders' selling activities may be correlated in time, we report standard errors clustered by time (Petersen 2009). For the return windows (–17, 0), (–14, 0), and (–11, 0), consistent with our hypothesis and with the univariate analysis, we find a significantly negative coefficient for *NETSELL_D* (t-statistics = –2.270, –2.380, –2.290, respectively). This finding indicates that, controlling for other determinants of abnormal returns, insiders selling their company's shares prior to goodwill impairment announcements have more severe negative private information than those not selling their company's shares prior to the announcement. However, when returns to insider trading activities are measured over the windows (–8, 0), (–5, 0), and (–2, 0), we fail to find evidence of relatively lower abnormal returns as the coefficient on *NETSELL_D* is insignificant (t-statistics = –0.780, –0.780, and –0.870, respectively). Among the control variables, we find that *SIZE*, *RETBH*, and *OTHER_IMPAIR_D* are significant across most trading windows, as predicted. We find limited significance across the windows for the other control variables.

Paralleling our previous results, we examine abnormal returns for the two subsamples of firms having low quality versus high quality information environments. As shown in Panel A of

Table 9, our results for the variable *NETSELL_D* are robust, albeit weaker, for the subsample of firms having low quality information environments. Again, this setting more likely reflects insider trading relating to the goodwill impairment, versus other (non-goodwill related) economic performance of the firm. Panel B reveals generally insignificant coefficients for *NETSELL_D* for the subsample of firms having high quality information environments. Taken together, these findings suggest that firm insiders are able to profit from their private information regarding goodwill impairments by timing their trades in advance of its incorporation by the equity market or recognition by the firm's accounting system.

V. CONCLUSION

This study investigates whether insiders strategically sell their shares prior to goodwill impairments. We examine insider trading in this setting to provide evidence of a specific component of earnings that insiders are able to trade ahead of—i.e., to provide evidence of a specific source of insiders' private information. We select the setting of goodwill impairments for three reasons. Goodwill impairments tend to be economically large, averaging 11.9% of the market value of equity during our sample period of 2002-2007. In addition, managers likely have material private information regarding future cash flow estimates (which relate to the value of recorded goodwill) through their internal budgeting processes. Finally, managers' private information advantage may be relatively long-lived due to goodwill impairment testing rules that may delay the accounting recognition of economic goodwill impairments. Whether insiders trade in anticipation of reported goodwill impairments is unclear, as equity markets may anticipate economic impairments of goodwill prior to the reported impairment, and governance and litigation constraints may inhibit such strategic trading behavior.

Our empirical analyses reveal that insiders of firms reporting goodwill impairments

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exhibit higher net selling behavior relative to firms not reporting goodwill impairments up to twenty-four months prior to the goodwill impairment announcement. Further analysis reveals that among firms reporting goodwill impairments, those with net selling among insiders exhibit significantly more negative abnormal stock returns relative to those not reporting net selling among insiders. Results across both sets of analyses are robust to inclusion of controls for other determinants of insider trading activity and abnormal stock returns. Further, these results are robust to examining a subsample of firms having a relatively low quality information environment—where price discovery regarding goodwill impairments is significantly delayed. This setting provides evidence in an environment where strategic insider trading behavior can be more directly linked to information regarding goodwill impairments, as the price discovery regarding the goodwill impairment occurs closer to its formal release.

Overall, these results build upon prior insider trading research by providing evidence of a specific reporting item about which insiders are able to strategically trade prior to its full discovery by the equity market and its recognition within the financial statements. In addition, these results build upon prior research investigating managers' discretion over goodwill impairments by providing evidence of a managerial incentive to delay the accounting recognition of goodwill impairments. Finally, these results build on prior research investigating the market reaction to the accounting recognition of goodwill impairments by providing evidence that the market reaction is substantially greater in low quality information environments.

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FIGURE 1
Abnormal Returns for Firms Reporting Goodwill Impairments: Low-Quality versus High Quality Subsamples

Panel A: CAR over the window (-30,2) for goodwill impairment firms with high versus low quality information environment

- – – High Quality Info Environment   —— Low Quality Info Environment

Panel B: CAR over the window (-375,-31) for goodwill impairment firms with high versus low quality information environment

- – – High Quality Info Environment   —— Low Quality Info Environment
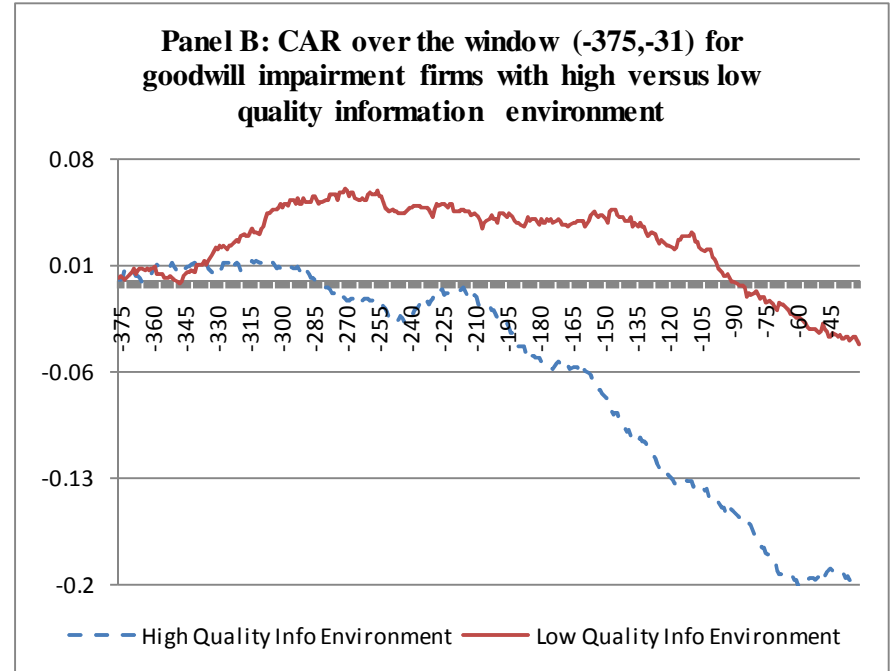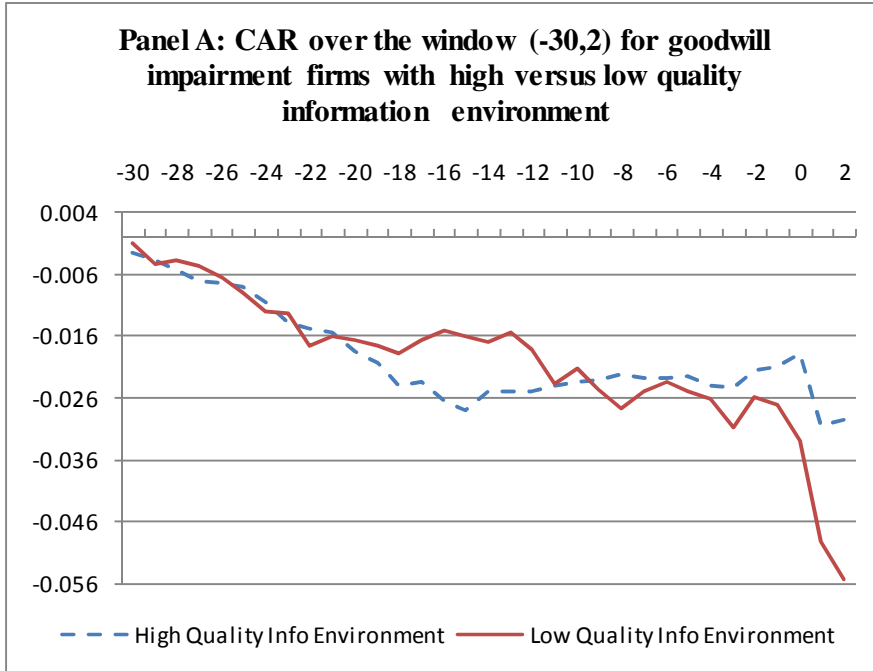
Ratio of: (CAR over window –30, 2) / (CAR over indicated window)

Total CAR window	High quality information environment	Low quality information environment
	Mean	Mean
(–375, 2)	11.84%	56.07%
(–251, 2)	12.78%	36.20%
(–126, 2)	23.42%	41.62%

Unexpected Earnings	High quality information environment		Low quality information environment	
	Mean	t-statistic	Mean	t-statistic
UE_Q_0	4.78%	4.45 ***	2.93%	1.38
UE_Q_{-1}	–0.64%	–1.91 *	0.70%	0.70
UE_Q_{-2}	–0.37%	–1.95 *	–0.32%	–0.18
UE_Q_{-3}	–0.28%	–1.14	0.35%	0.49
UE_Q_{-4}	–0.41%	–1.80 *	1.11%	0.96
UE_Q_{-5}	–0.24%	–1.63 *	0.31%	0.59

This figure presents the cumulative abnormal returns (CAR) for firms reporting goodwill impairments. Amounts for two sub-samples are shown: those having high quality information environments (defined as above median analyst following, represented with the dotted line), and those having low quality

information environments (defined as below median analyst following, represented with the solid line). Panel A presents CAR for the window (–30, 2); Panel B presents CAR for the window (–375, –31); for both panels, day 0 is the announcement of the goodwill impairment. The trading windows of (–375, 2), (–251, 2) and (–126, 2) correspond to approximately 18, 12 and 6 calendar months, or 6, 4, and 2 fiscal quarters, respectively.

FIGURE 2

Timeline for the measurement of informed trading over the pre-goodwill impairment disclosure period

End of the GW Impairment
Fiscal Quarter

↓

Month 0

Window
(-23,-18)

Window
(-17,-12)

Window
(-11,-6)
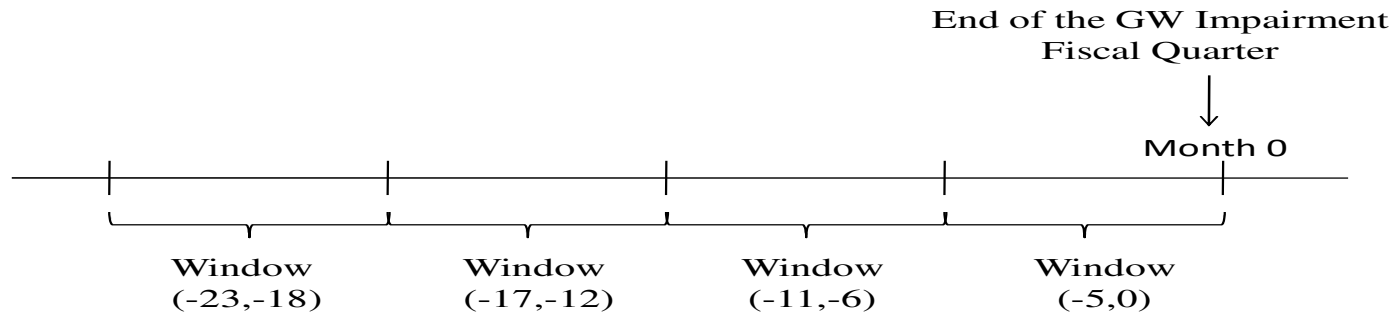
Window
(-5,0)

This figure presents a timeline for the measurement of the variables used in the informed trading analysis. The informed trading and the time-variant control variables are measured over four non-overlapping windows covering the two-year period prior to the reported goodwill impairment. The first window is measured over months –23 to –18 (inclusive); the second is measured over months –17 to –12 (inclusive); the third is measured over months –11 to –6 (inclusive); and the last window over months –5 to 0 (inclusive), where month 0 is the last month of the goodwill impairment fiscal quarter. For example, for a company that reports a goodwill impairment for the quarter ending December 31, 2006, the first window is measured from January 1, 2005 to June 30, 2005; the second window from July 1, 2005 to December 31, 2005; and so on.

FIGURE 3
Abnormal Buy-and-Hold Returns for Firms Reporting SFAS 142 Goodwill Impairments

	(-17,0)	(-14,0)	(-11,0)	(-8,0)	(-5,0)	(-2,0)
■ Firms with net insider selling	-23.4%	-22.3%	-20.4%	-16.8%	-13.8%	-8.4%
■ All other	-10.5%	-11.5%	-13.4%	-15.8%	-12.0%	-8.0%

Months relative to goodwill impairment disclosure
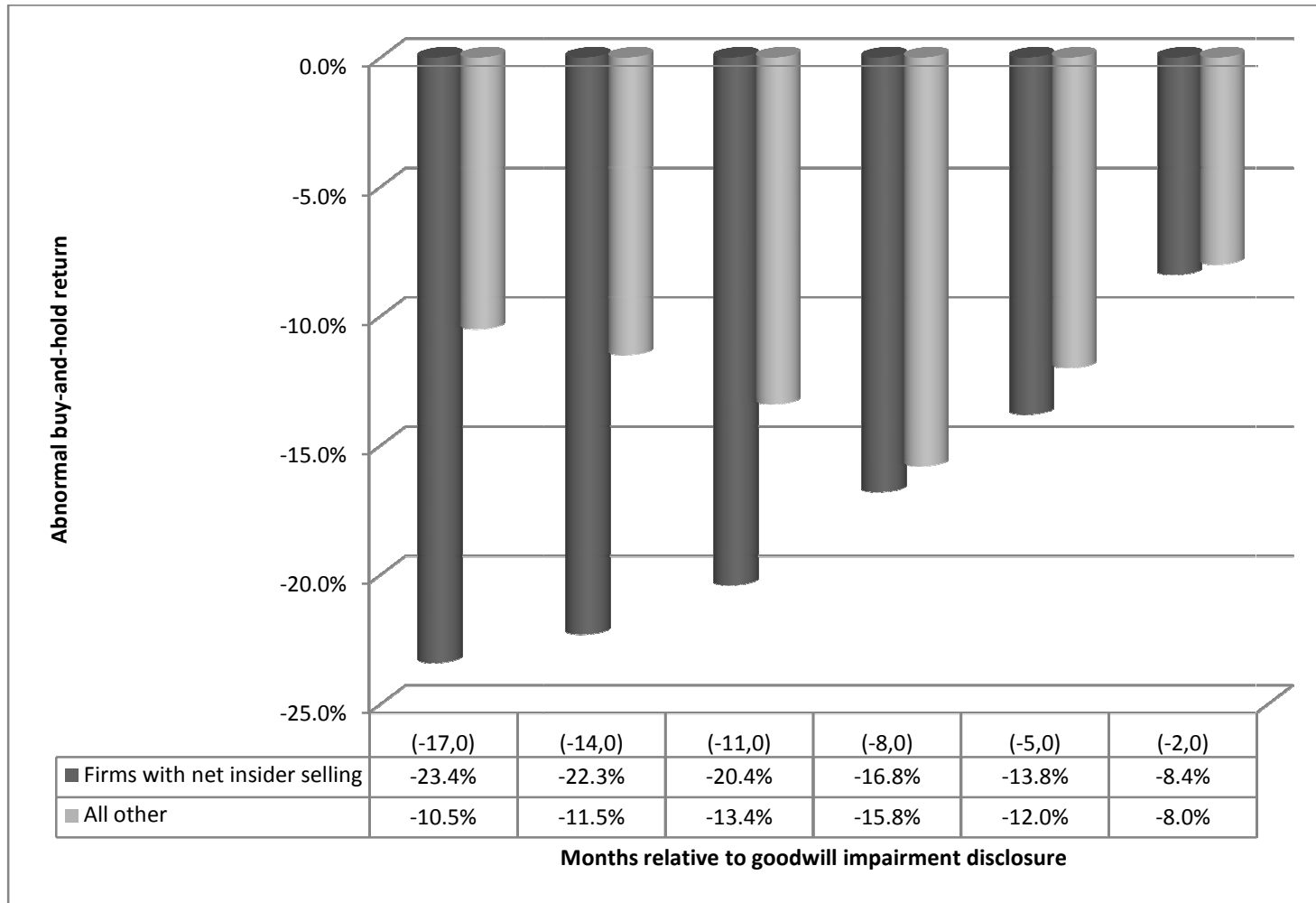
This figure presents evidence that firms reporting goodwill impairments and with net insider selling transactions face relatively more negative abnormal buy-and-hold returns as compared to firms reporting goodwill impairments and not exhibiting net insider selling transactions. The abnormal buy-and-hold returns to insider trades are computed over windows starting directly after the end of the insider trading window and

ending with the last month of the goodwill impairment quarter (i.e., month 0). Thus, the first column presents results for insider trading calculated over months (–23, –18), and abnormal returns calculated over months (–17, 0).

TABLE 1
Descriptive Statistics of SFAS 142 Goodwill Impairments

Panel A: Goodwill impairments by reporting period, 2002–2007

		Firms Reporting Goodwill Impairments (a)	% of Total Impairment Sample (b)	Compustat Firms Reporting Goodwill (c)	% of Total Compustat Firms with Goodwill (d)	Impairment Firms / Compustat Firms (a)/(c)=(e)	Mean of Reported Impairment / Market Value$_{t-1}$ (f)
2002	Q1	3	0.5%	1,135	2.3%	0.26%	3%
	Q2	19	3.1%	1,507	3.0%	1.26%	17%
	Q3	28	4.6%	1,646	3.3%	1.70%	23%
	Q4	103	16.8%	1,762	3.6%	5.85%	19%
2003	Q1	7	1.1%	1,945	3.9%	0.36%	3%
	Q2	24	3.9%	1,814	3.7%	1.32%	13%
	Q3	21	3.4%	1,835	3.7%	1.14%	15%
	Q4	52	8.5%	1,924	3.9%	2.70%	14%
2004	Q1	9	1.5%	2,211	4.5%	0.41%	3%
	Q2	14	2.3%	2,087	4.2%	0.67%	7%
	Q3	25	4.1%	2,167	4.4%	1.15%	6%
	Q4	52	8.5%	2,243	4.5%	2.32%	7%
2005	Q1	8	1.3%	2,352	4.7%	0.34%	3%
	Q2	16	2.6%	2,227	4.5%	0.72%	9%
	Q3	13	2.1%	2,280	4.6%	0.57%	14%
	Q4	57	9.3%	2,358	4.8%	2.42%	10%
2006	Q1	12	2.0%	2,419	4.9%	0.50%	2%
	Q2	18	2.9%	2,252	4.5%	0.80%	8%
	Q3	16	2.6%	2,290	4.6%	0.70%	10%
	Q4	63	10.3%	2,380	4.8%	2.65%	13%
2007	Q1	8	1.3%	2,411	4.9%	0.33%	1%
	Q2	21	3.4%	2,247	4.5%	0.93%	8%
	Q3	15	2.5%	2,243	4.5%	0.67%	7%
	Q4	8	1.3%	1,839	3.7%	0.44%	4%
		612	**100.0%**	**49,574**	**100.0%**	1.26%	

Panel B: Goodwill impairments per firm, 2002–2007

Impairments Reported During Sample Period	1	2	3	4	5	6	7 +	Total Obs
Number of firms	389	139	47	17	8	5	7	612
Percent of sample	63.6%	22.7%	7.7%	2.8%	1.3%	0.8%	1.1%	100.0%

This table presents descriptive statistics for the sample of firms reporting goodwill impairments during the period 2002–2007, as well as comparative amounts for all other Compustat firms reporting positive goodwill but no goodwill impairment. Panel A presents the distribution by fiscal quarter. Panel B presents the distribution of sample firms by the number of reported goodwill impairments within the sample period. Only the first reported impairment for the 2002–2007 period is included in the sample.

TABLE 2
SFAS 142 Goodwill Impairments by Industry

Industry Name	SIC	Firms Reporting Goodwill Impairments (a)	% of Total Sample (b)	Compustat Firms Reporting Goodwill (c)	% of Total Compustat Firms with Goodwill (d)	Mean of Reported Impairment / Market value$_{t-1}$ (e)
Building Construction	15	11	1.8%	116	0.2%	3%
Food and Kindred Products	20	12	2.0%	1,003	2.0%	7%
Chemicals and Allied Products	28	32	5.2%	3,213	6.5%	11%
Rubber and Misc Plastics	30	10	1.6%	374	0.8%	3%
Primary Metal	33	13	2.1%	522	1.1%	7%
Ind./Comm. Machinery and Computers	35	38	6.2%	2,608	5.3%	7%
Electronic Equipment	36	62	10.1%	3,218	6.5%	16%
Transportation Equipment	37	14	2.3%	880	1.8%	25%
Instruments and Related Products	38	36	5.9%	3,202	6.5%	7%
Communication	48	28	4.6%	1,573	3.2%	19%
Wholesale Trade - Durable Goods	50	10	1.6%	1,299	2.6%	11%
Wholesale Trade - Non-durable Goods	51	11	1.8%	528	1.1%	14%
Eating and Drinking Places	58	13	2.1%	791	1.6%	4%
Miscellaneous Retail	59	12	2.0%	1,130	2.3%	14%
Depository Institutions	60	28	4.6%	5,767	11.7%	2%
Business Services	73	82	13.4%	6,895	13.9%	24%
Health Services	80	14	2.3%	1,068	2.2%	21%
Engineering and Related Services	87	16	2.6%	1,088	2.2%	21%
All Other Industries (aggregated)		170	27.8%	14,299	28.9%	7%
		612	**100.0%**	**49,574**	**100.0%**	

This table presents the industry composition during the sample period 2002-2007, with industries representing 1.5% or more (less than 1.5%) of the sample goodwill impairment firms presented individually (aggregated). We provide the industry composition for both the sample firms reporting goodwill impairments under SFAS 142, as well as all Compustat firms reporting positive goodwill but no goodwill impairment. The final column presents the mean reported goodwill impairment divided by lagged market value for those firms reporting goodwill impairments.

TABLE 3
TABLE 3
Descriptive Statistics

Variable	Observations with Goodwill Impairment ("GW Impair") (N = 612)		Observations with Goodwill but No Impairment ("All Other") (N = 49,574)		Tests of Means (GW Impair – All Other)		Test of Medians (GW Impair – All Other)	
	Mean	Median	Mean	Median	Mean	p-value	Median	p-value
SIZE	6,706.960	578.614	9,533.970	583.486	–2,827.010	0.055	–4.870	0.109
FOLLOW	5.724	4.000	5.428	3.000	0.296	0.262	1.000	0.003
BTM	0.753	0.617	0.490	0.445	0.263	0.000	0.172	0.000
ROA	–0.095	–0.023	0.002	0.008	–0.097	0.000	–0.031	0.000
GW	0.146	0.101	0.142	0.083	0.004	0.518	0.018	0.912
LAG_GW	0.190	0.144	0.144	0.086	0.046	0.000	0.058	0.000
RESTRUCT_D	0.327	0.000	0.145	0.000	0.182	0.000	0.000	0.000
OTH_IMPAIR_D	0.317	0.000	0.051	0.000	0.266	0.000	0.000	0.000
GW_IMPAIR	0.119	0.023						

This table presents descriptive statistics and comparisons across firms that report a goodwill impairment (designated as "GW Impair") versus all other Compustat firms reporting positive goodwill at the end of the prior quarter but not reporting a goodwill impairment over our sample period (designated as "All Other"). Across all variables for firms reporting goodwill impairments, quarter t refers to the impairment quarter. All p-values are based on two-tailed t-tests.

The variables are:
SIZE	= total assets (in $ millions) at the end of quarter t;
FOLLOW	= the number of financial analysts (per IBES) following the firm in quarter t;
BTM	= the book to market ratio at the end of quarter t, with book reflecting any reported goodwill impairment;
ROA	= income before extraordinary items divided by total assets at the end of quarter t, with both income and total assets reflecting any reported goodwill impairment;
GW	= the ratio of goodwill at the end of quarter t to total assets at the end of quarter t, with both goodwill and total assets reflecting any reported impairment charges;
LAG_GW	= the ratio of goodwill at the end of quarter $t-1$ to total assets at the end of quarter $t-1$;

RESTRUCT_D   = an indicator variable equal to one for firms reporting restructuring charges in quarter t, and zero otherwise;

OTH_IMPAIR_D   = an indicator variable equal to one for firms reporting non-goodwill impairments in quarter t, and zero otherwise; and

GW_IMPAIR   = reported goodwill impairment for quarter t divided by market value of equity at the end of quarter $t-1$.

TABLE 4
Occurrence of Net Insider Selling Over the Two Years Preceding the Goodwill Impairment: Univariate Analyses

Window (month 0 is reporting of goodwill impairment)	Goodwill Impairment Firms			Non-impairment Firms			Difference in Means (Goodwill Impairment – Non-impairment)		Difference in Medians (Goodwill Impairment – Non-impairment)	
	N	Mean	Median	N	Mean	Median	Mean	t-statistic	Median	z-statistic
(−23, −18)	607	0.435	0.000	4,920	0.364	0.000	0.071	3.410 ***	0.000	3.403 ***
(−17, −12)	626	0.468	0.000	5,216	0.364	0.000	0.104	5.080 ***	0.000	5.067 ***
(−11, −6)	651	0.429	0.000	5,459	0.371	0.000	0.058	2.840 ***	0.000	2.839 ***
(−5, 0)	669	0.371	0.000	5,680	0.367	0.000	0.004	0.180	0.000	0.813

This table presents results from univariate analyses examining the occurrence of net insider selling during the two years preceding the reported goodwill impairment under SFAS 142 across two groups of firms: those reporting goodwill impairments ("Goodwill Impairment Firms"), and not reporting goodwill impairments ("Non-Impairment Firms"). Insider trading is assessed as an indicator variable equal to one for firms that experience net insider trading (i.e., total sales greater than total purchases, calculated using open-market transactions by firm officers) over the indicated six-month trading window, and zero otherwise. Results are presented over four non-overlapping windows: months –23 to –18 (inclusive); months –17 to –12 (inclusive); months –11 to –6 (inclusive); and months –5 to 0 (inclusive). For firms reporting goodwill impairments, the windows are assessed relative to the end of the quarter in which the goodwill impairment is reported, with the month of the impairment designated as month 0. For firms not reporting goodwill impairments, we randomly select a single quarter within our sample reporting period to determine the reporting window. The differences in mean values are based on two-tailed t-tests; the differences in medians are based on two-tailed Wilcoxon tests.

TABLE 5
Occurrence of Net Insider Selling Over the Two Years Preceding the Goodwill Impairment: Multivariate Analyses

Variable	Predicted Sign	Window (−23, −18)	Window (−17, −12)	Window (−11, −6)	Window (−5, 0)
Intercept	?	−1.583 ***	−1.705 ***	−1.954 ***	−2.100 ***
		(−12.870)	(−17.917)	(−9.423)	(−9.816)
GWI_D	+	0.121*	0.327 ***	0.187 **	0.012
		(1.351)	(3.115)	(2.177)	(0.117)
$SIZE$	+	0.262 ***	0.276 ***	0.293 ***	0.274 ***
		(23.840)	(25.402)	(13.274)	(12.684)
BTM	−	−0.962 ***	−0.878 ***	−0.591 ***	−0.239 ***
		(−9.617)	(−7.822)	(−6.030)	(−4.088)
$RETBH$	+	0.538 ***	0.486 ***	0.650 ***	0.673 ***
		(6.080)	(6.113)	(8.145)	(13.343)
$RESTRUCT\_D$	+ / −	0.166	0.199 **	−0.047	0.151
		(1.420)	(1.966)	(−0.509)	(1.223)
OTH_IMPAIR_D	+ / −	−0.119	−0.243 **	−0.088	−0.386 ***
		(−0.987)	(−2.156)	(−0.941)	(−3.996)
UE_Q_0	−	−0.025	−0.124	−0.278 ***	−0.018
		(−1.236)	(−1.056)	(−3.097)	(−0.526)
UE_Q_{-1}	−	−0.017	−0.181 ***	−0.137 ***	0.016
		(−0.348)	(−3.869)	(−2.684)	(0.250)
UE_Q_{-2}	−	−0.107**	−0.044	−0.180	
		(−2.457)	(−0.349)	(−1.058)	
UE_Q_{-3}	−	−0.340*	−0.091	−0.335 *	
		(−1.303)	(−0.704)	(−1.580)	
UE_Q_{-4}	−	−0.050	−0.155		
		(−0.333)	(−0.929)		
UE_Q_{-5}	−	−0.234*	−0.130		
		(−1.476)	(−1.063)		
UE_Q_{-6}	−	−0.314 **			
		(−1.948)			
UE_Q_{-7}	−	−0.123**			
		(−2.107)			
Pseudo R^2		0.180	0.180	0.166	0.124
Observations		5,527	5,842	6,110	6,349

This table presents results from multivariate logistic analyses examining the determinants of the occurrence of insider trading during the two years preceding the reported goodwill impairment under

SFAS 142. Two groups of firms are included in the sample: those reporting goodwill impairments ("Goodwill Impairment Firms"), and those not reporting goodwill impairments ("Non-Impairment Firms"). The dependent variable is *NETSELL_D*, an indicator variable equal to one for firms that experience net insider trading (i.e., total sales greater than total purchases, calculated using open-market transactions by firm officers) over the indicated six-month trading window, and zero otherwise. Results are presented over four non-overlapping windows: months –23 to –18 (inclusive); months –17 to –12 (inclusive); months –11 to –6 (inclusive); and months –5 to 0 (inclusive). For firms reporting goodwill impairments (the reporting of which is designated as month 0), the windows are assessed relative to the end of the quarter in which the goodwill impairment is reported. For firms not reporting goodwill impairments, we randomly select a single quarter within our sample reporting period to determine the reporting window. *z*-statistics are presented in parentheses. ***, ** and * denote statistical significance at 1%, 5% and 10%, respectively, based on one-tail (two-tail) tests for variables having (lacking) directional predictions. Standard errors are cluster-adjusted by time following Petersen (2009).

The variables are:

NETSELL_D	=	an indicator variable equal to one for firms that experience net insider selling (i.e., total sales greater than total purchases) over the indicated six-month trading window, and zero otherwise;
GWI_D	=	an indicator variable equal to one for firms reporting a goodwill impairment in quarter *t*, and zero otherwise;
SIZE	=	log of total assets measured at the end of the indicated six-month window;
BTM	=	the book-to-market ratio measured at the end of the indicated six-month window;
RETBH	=	the buy-and-hold return measured over the six-month window prior to the indicated insider trading measurement window;
RESTRUCT_D	=	an indicator variable equal to one for firms reporting restructuring charges in quarter *t* (the goodwill impairment quarter), and zero otherwise;
OTH_IMPAIR_D	=	an indicator variable equal to one for firms reporting any non-goodwill impairments in quarter *t* (the goodwill impairment quarter), and zero otherwise; and
UE_Q_{t-k}	=	the unexpected earnings for quarter *t-k*, where the unexpected earnings are measured as earnings at the end of quarter *t-k* minus earnings at the end of quarter *t-k-4*, scaled by market value of equity at the end of quarter *t-k-1*.

TABLE 6
Occurrence of Net Insider Selling Over the Two Years Preceding the Goodwill Impairment:
Subsamples by Quality of Information Environment

		Panel A: Low Quality Information Environment				Panel B: High Quality Information Environment			
Variable	Pred Sign	Window (−23, −18)	Window (−17, −12)	Window (−11, −6)	Window (−5, 0)	Window (−23, −18)	Window (−17, −12)	Window (−11, −6)	Window (−5, 0)
Intercept	?	−2.028 ***	−2.088 ***	−2.213 ***	−2.184 ***	0.227	−0.101	0.040	−0.006
		(−15.117)	(−17.737)	(−9.462)	(−9.310)	(0.901)	(−0.627)	(0.184)	(−0.032)
GWI_D	+	0.396 ***	0.729 ***	0.440 ***	0.511 ***	0.191*	0.321 **	0.260 *	−0.091
		(3.496)	(6.962)	(3.040)	(2.948)	(1.322)	(2.288)	(1.498)	(−0.770)
SIZE	+	0.193 ***	0.182 ***	0.206 ***	0.166 ***	0.115 ***	0.143 ***	0.134 ***	0.119 ***
		(8.241)	(9.134)	(6.578)	(5.008)	(3.806)	(6.353)	(4.558)	(4.772)
BTM	−	−0.510 ***	−0.444 ***	−0.255 ***	−0.101 ***	−1.698 ***	−1.407 ***	−1.474 ***	−1.199 ***
		(−7.140)	(−13.133)	(−5.141)	(−5.341)	(−8.108)	(−7.075)	(−12.831)	(−4.154)
RETBH	+	0.668 ***	0.495 ***	0.565 ***	0.578 ***	0.361 **	0.444 ***	0.795 ***	0.640 ***
		(9.643)	(5.477)	(5.077)	(8.774)	(2.059)	(2.692)	(8.746)	(3.350)
RESTRUCT_D	+ / −	−0.018	0.048	−0.189	0.019	0.074	0.109	−0.075	0.139
		(−0.118)	(0.279)	(−0.955)	(0.110)	(0.501)	(1.155)	(−0.683)	(0.902)
OTH_IMPAIR_D	+ / −	−0.046	−0.174	−0.101	−0.365 **	−0.220 *	−0.283 **	−0.095	−0.356 ***
		(−0.281)	(−0.936)	(−0.620)	(−2.208)	(−1.804)	(−1.909)	(−0.499)	(−2.411)
UE_Q_0	−	−0.009	−0.218 **	−0.178 ***	0.029	−0.107	0.028	−0.187	−0.090
		(−0.363)	(−2.165)	(−3.448)	(0.907)	(−0.473)	(0.330)	(−0.237)	(−0.572)
UE_Q_{-1}	−	0.062	−0.050 **	−0.068 ***	0.011	−0.795 **	−0.315 **	−0.461	2.161
		(1.196)	(−2.165)	(−3.059)	(0.158)	(−2.037)	(−1.810)	(−0.562)	(1.969)
UE_Q_{-2}	−	−0.103 **	0.020	−0.115		−0.080	−0.394 *	−0.769	
		(−1.945)	(0.297)	(−0.950)		(−0.290)	(−1.414)	(−0.654)	
UE_Q_{-3}	−	−0.349 **	−0.055	−0.308 ***		0.272	−0.126	1.432	
		(−2.176)	(−0.869)	(−2.349)		(0.686)	(−0.319)	(2.873)	
UE_Q_{-4}	−	−0.059	−0.246 **			0.266	−0.665 **		
		(−0.958)	(−1.690)			(0.675)	(−2.071)		
UE_Q_{-5}	−	−0.040	−0.148 *			−2.156 ***	2.213		
		(−0.471)	(−1.404)			(−5.335)	(1.866)		
UE_Q_{-6}	−	−0.417 ***				1.443			
		(−2.893)				(2.725)			
UE_Q_{-7}	−	−0.074 *				0.806			

	(–1.516)				(2.324)			
Pseudo R^2	0.108	0.097	0.081	0.053	0.110	0.109	0.112	0.084
Observations	2,991	3,013	3,418	3,607	2,536	2,829	2,692	2,742

This table presents results from multivariate logistic analyses examining the determinants of the occurrence of insider trading during the two years preceding the reported goodwill impairment under SFAS 142. The sample includes two groups of firms: those reporting goodwill impairments, and those not reporting goodwill impairments. Panel A presents results using the sub-sample of firms having a low quality information environment, defined as firms having below median analyst following. Panel B presents results using the sub-sample of firms having a high quality information environment, defined as firms having above median analyst following. Across both panels, the dependent variable is *NETSELL_D*, an indicator variable equal to one for firms that experience net insider trading (i.e., total sales greater than total purchases, calculated using open-market transactions by firm officers) over the indicated six-month trading window, and zero otherwise. Results are presented over four non-overlapping windows: months –23 to –18 (inclusive); months –17 to –12 (inclusive); months –11 to –6 (inclusive); and months –5 to 0 (inclusive). For firms reporting goodwill impairments, the windows are assessed relative to the end of the quarter in which the goodwill impairment is reported, with the month of the impairment designated as month 0. For firms not reporting goodwill impairments, we randomly select a single quarter within our sample reporting period to determine the reporting window. *z*-statistics are presented in parentheses. ***, ** and * denote statistical significance at 1%, 5% and 10%, respectively, based on one-tail (two-tail) tests for variables having (lacking) directional predictions. Standard errors are cluster-adjusted by time following Petersen (2009).

The variables are:

NETSELL_D	= an indicator variable equal to one for firms that experience net insider selling (i.e., total sales greater than total purchases) over the indicated six-month trading window, and zero otherwise;
GWI_D	= an indicator variable equal to one for firms reporting a goodwill impairment in quarter *t*, and zero otherwise;
SIZE	= log of total assets measured at the end of the indicated six-month window;
BTM	= the book-to-market ratio measured at the end of the indicated six-month window;
RETBH	= the buy-and-hold return measured over the six-month window prior to the indicated insider trading window;
RESTRUCT_D	= an indicator variable equal to one for firms reporting restructuring charges in quarter *t* (the goodwill impairment quarter), and zero otherwise;
OTH_IMPAIR_D	= an indicator variable equal to one for firms reporting any non-goodwill impairments in quarter *t* (the goodwill impairment quarter), and zero otherwise; and
UE_Q_{t-k}	= the unexpected earnings for quarter *t-k*, where the unexpected earnings are measured as earnings at the end of quarter *t-k* minus earnings at the end of quarter *t-k-4*, scaled by market value of equity at the end of quarter *t-k-1*.

TABLE 7

Abnormal Returns to Insider Selling Over the Two Years Preceding the Goodwill Impairment: Univariate Analyses

Insider Trading Window	Abnormal Buy and Hold Return Window	Buy-and-Hold Return: Net Insider Selling Impairment Firms (*NETSELL_D* = 1)			Buy-and-Hold Return: All Other Impairment Firms (*NETSELL_D = 0*)			Difference in Means (Net Insider Selling – All Other)		Difference in Medians (Net Insider Selling – All Other)	
		N	Mean	Median	N	Mean	Median	Mean	*t*-statistic	Median	*z*-statistic
(–8, –3)	(–2, 0)	246	–0.084	–0.059	366	–0.080	–0.082	–0.004	0.190	0.023	0.373
(–11, –6)	(–5, 0)	265	–0.138	–0.123	347	–0.120	–0.139	–0.018	0.720	0.016	0.004
(–14, –9)	(–8, 0)	284	–0.168	–0.162	328	–0.158	–0.181	–0.010	0.330	0.019	0.379
(–17, –12)	(–11, 0)	287	–0.204	–0.217	325	–0.134	–0.192	–0.070	2.020 **	–0.025	–1.244
(–20, –15)	(–14, 0)	277	–0.223	–0.234	335	–0.115	–0.209	–0.108	2.740 ***	–0.025	–2.187 **
(–23, –18)	(–17, 0)	268	–0.234	–0.277	344	–0.105	–0.197	–0.129	3.010 ***	–0.080	–2.246 **

This table presents univariate comparisons of abnormal buy-and-hold returns (measured as the firm raw return less the value-weighted market return) to insider trades for two groups of firms reporting goodwill impairments under SFAS 142. The first group is firms, in which insiders are net sellers (i.e., the variable *NETSELL_D* = 1), and is designated as "Net Insider Selling Impairment Firms." The second is firms, in which insiders are not net sellers (i.e., the variable *NETSELL_D* = 0), and is designated as "All Other Impairment Firms." Insider trades (defined as open-market transactions by firm officers) are measured over six-month rolling windows covering the two years prior to the goodwill impairment event. The buy-and-hold abnormal returns to insider trades are computed over windows starting directly after the end of the insider trading window and ending with the last month of the goodwill impairment quarter (i.e., month 0). ***, ** and * denote statistical significance at 1%, 5% and 10%, respectively, based on two-tailed *t*-tests of means or two-tailed *z*-tests of medians.

Abnormal Returns to Insider Selling Over the Two Years
Preceding the Goodwill Impairment: Multivariate Analyses

Variable	Pred Sign	Return Window $(-17, 0)$	Return Window $(-14, 0)$	Return Window $(-11, 0)$	Return Window $(-8, 0)$	Return Window $(-5, 0)$	Return Window $(-2, 0)$
Intercept	?	-0.324^{***}	-0.253^{**}	-0.277^{***}	-0.321^{***}	-0.313^{***}	-0.179^{***}
		(-2.740)	(-2.500)	(-3.030)	(-3.340)	(-4.560)	(-4.660)
NETSELL_D	$-$	-0.125^{**}	-0.090^{***}	-0.073^{**}	-0.029	-0.027	-0.020
		(-2.270)	(-2.380)	(-2.290)	(-0.780)	(-0.780)	(-0.870)
SIZE	$+ / -$	0.029^{**}	0.018	0.024^{**}	0.026^{**}	0.024^{***}	0.015^{***}
		(2.070)	(1.450)	(2.200)	(2.630)	(2.780)	(3.000)
BTM	$+ / -$	0.102	0.097^{*}	0.053	0.054^{*}	0.099^{**}	0.041^{**}
		(1.610)	(1.760)	(1.070)	(0.970)	(2.580)	(2.200)
RETBH	$+ / -$	0.147^{**}	0.141^{*}	0.149^{**}	0.158^{**}	0.186^{***}	0.184^{***}
		(2.260)	(1.710)	(2.520)	(2.330)	(3.100)	(2.920)
RESTRUCT_D	$+ / -$	-0.006	-0.035	-0.054	-0.044	-0.040	-0.006
		(-0.130)	(-0.930)	(-1.500)	(-1.680)	(-1.600)	(-0.300)
OTH_IMPAIR_D	$+ / -$	-0.118^{***}	-0.119^{***}	-0.080^{**}	-0.072^{**}	-0.047	-0.031
		(-3.000)	(-3.040)	(-2.580)	(-2.020)	(-1.210)	(-1.030)
UE_Q_0	$+$	-0.168	-0.164	-0.107	-0.144	-0.096	-0.028
		(-0.990)	(-1.060)	(-1.220)	(-1.510)	(-1.510)	(-0.530)
UE_Q_{-1}	$+$	0.445^{**}	0.290^{**}	0.380^{***}	0.132	0.049	
		(1.910)	(1.790)	(2.390)	(0.890)	(0.340)	
UE_Q_{-2}	$+$	0.058	0.071	-0.051	-0.028		
		(1.050)	(0.860)	(-0.680)	(-1.080)		
UE_Q_{-3}	$+$	0.622^{**}	0.621^{***}	0.854^{***}			
		(1.910)	(3.700)	(4.310)			
UE_Q_{-4}	$+$	0.227^{*}	0.210^{*}				
		(1.430)	(1.360)				
UE_Q_{-5}	$+$	0.645^{*}					
		(1.310)					
Pseudo R^2		0.083	0.075	0.082	0.059	0.064	0.059

This table presents results from multivariate analyses examining abnormal buy-and-hold returns to insider trades for two groups of firms reporting goodwill impairments under SFAS 142. The first group is firms, in which insiders are net sellers (i.e., the variable NETSELL_D = 1). The second is firms, in which insiders are not net sellers (i.e., the variable NETSELL_D = 0). Insider trades (defined as open-market transactions by firm officers) are measured over six-month rolling windows covering the two years prior to the goodwill impairment event. The dependent variable is ABNORMAL_RET, the buy-and-hold abnormal returns to insider trades computed over windows starting directly after the end of the insider trading window and ending with the last month of the goodwill impairment quarter (i.e., month 0). ***,

** and * denote statistical significance at 1%, 5% and 10%, based on one-tail (two-tail) tests for variables having (lacking) directional predictions. Standard errors are cluster-adjusted by time following Petersen (2009). For all regressions, $N = 612$.

The variables are:

ABNORMAL_RET	=	the buy-and-hold abnormal returns (measured as the firm raw return less the value-weighted market return) to insider trades, computed over windows starting directly after the end of the insider trading window and ending with the last month of the goodwill impairment quarter (month 0);
NETSELL_D	=	an indicator variable equal to one for firms that experience net insider selling (i.e., total sales greater than total purchases) over the indicated six-month trading window, and zero otherwise;
SIZE	=	log of total assets measured at the end of the indicated six-month window;
BTM	=	the book-to-market ratio measured at the end of the indicated six-month window;
RETBH	=	the buy-and-hold return measured over the six-month window prior to the indicated insider trading measurement window;
RESTRUCT_D	=	an indicator variable equal to one for firms reporting restructuring charges in quarter *t* (the goodwill impairment quarter), and zero otherwise;
OTH_IMPAIR_D	=	an indicator variable equal to one for firms reporting any non-goodwill impairments in quarter *t* (the goodwill impairment quarter), and zero otherwise; and
UE_Q$_{t-k}$	=	the unexpected earnings for quarter *t-k*, where the unexpected earnings are measured as earnings at the end of quarter *t-k* minus earnings at the end of quarter *t-k-4*, scaled by market value of equity at the end of quarter *t-k-1*.

TABLE 9
Abnormal Returns to Insider Selling Over the Two Years Preceding the Goodwill Impairment: Subsamples by Quality of Information Environment

Panel A: Low Quality Information Environment **Panel B: High Quality Information Environment**

Variable (Predict Sign)	Return Window (−17, 0)	Return Window (−14, 0)	Return Window (−11, 0)	Return Window (−8, 0)	Return Window (−5, 0)	Return Window (−2, 0)	Return Window (−17, 0)	Return Window (−14, 0)	Return Window (−11, 0)	Return Window (−8, 0)	Return Window (−5, 0)	Return Window (−2, 0)
Intercept (?)	−0.273 *	−0.197	−0.254**	−0.331 ***	−0.324 ***	−0.222 ***	−0.576***	−0.540***	−0.657* **	−0.565 ***	−0.496 ***	−0.201 **
	(−1.90)	(1.45)	(−2.51)	(−2.85)	(−4.58)	(−4.90)	(−3.58)	(−4.18)	(−5.82)	(−5.59)	(−4.23)	(−1.85)
NETSELL_D (−)	−0.174 **	−0.106 *	−0.095 *	−0.042	−0.060*	−0.029	−0.026	−0.065 *	−0.012	−0.005	0.019	0.017
	(−2.08)	(−1.68)	(−1.79)	(−0.63)	(−1.44)	(−0.79)	(−0.52)	(−1.50)	(−0.29)	(−0.14)	(0.42)	(0.46)
SIZE (+/−)	0.025	0.015	0.032 **	0.033 ***	0.031 ***	0.021 ***	0.051**	0.050 ***	0.061 ***	0.054 ***	0.042 ***	0.016
	(1.37)	(0.92)	(2.61)	(3.25)	(3.79)	(3.90)	(2.71)	(3.85)	(4.93)	(4.30)	(2.95)	(1.45)
BTM (+/−)	0.105	0.086	0.035	0.066	0.107 ***	0.045	0.151	0.114	0.096*	0.027	0.112**	0.056*
	(1.48)	(1.46)	(0.66)	(0.99)	(2.97)	(1.65)	(1.56)	(1.23)	(1.68)	(0.46)	(2.04)	(1.04)
RETBH (+/-)	0.114	0.129	0.115*	0.127	0.253 ***	0.208 ***	0.194 **	0.138	0.078	0.096	0.048	0.125
	(1.16)	(1.18)	(1.72)	(1.42)	(3.02)	(3.50)	(2.52)	(1.63)	(0.78)	(1.27)	(0.67)	(1.23)
RESTRUCT_D (+ / −)	0.016	-0.027	−0.036	−0.037	0.001	0.062	−0.014	−0.012	−0.034	−0.017	−0.052 *	−0.068***
	(0. 23)	(-0.42)	(−0.47)	(−0.72)	(0.02)	(1.62)	(−0.39)	(−0.25)	(−1.07)	(−0.76)	(−1.81)	(−2.78)
OTH_IMPAIR_D (+ / −)	−0.112 *	−0.129 *	−0.062	−0.050	−0.041	−0.015	−0.085 **	−0.092 **	−0.096**	−0.102 **	−0.053	−0.053
	(−1.71)	(−1.82)	(−1.18)	(−0.91)	(−0.87)	(−0.39)	(−2.19)	(−2.06)	(−2.28)	(−2.31)	(−1.34)	(−1.36)
UE_Q_0 (+)	−0.107	−0.101	−0.067	−0.098	−0.042	−0. 001	−0.540	−0.522	−0.415	−0.313	−0.345	−0.217
	(−0.63)	(−1.11)	(−0.83)	(−1.06)	(−0.88)	(−0.17)	(−4.19)	(−4.41)	(−5.00)	(−5.12)	(−4.47)	(−2.70)
UE_Q_{-1} (+)	0.206	0.069	0.186 **	−0.024	−0.105		1.974***	1.675***	1.521***	1.082 ***	1.512***	
	(1.09)	(0.67)	(1.72)	(−0.20)	(−1.19)		(6.93)	(3.98)	(2.71)	(3.01)	(5.43)	
UE_Q_{-2} (+)	0.072**	0.083	−0.027	−0.018			2.834 ***	1.776	0.731	1.170*		
	(1.71)	(1.24)	(−0.53)	(−0.60)			(2.65)	(1.22)	(0.67)	(1.40)		
UE_Q_{-3} (+)	0.451*	0.482***	0.6028***				2.264***	2.731***	2.986***			
	(1.50)	(3.05)	(4.03)				(3.23)	(2.49)	(3.84)			
UE_Q_{-4} (+)	0.195	0.199					−0.621	−0.941				
	(1.05)	(1.19)					(−0.85)	(−1.25)				
UE_Q_{-5} (+)	0.594						0.144					
	(1.12)						(0.10)					
Pseudo R^2	0.089	0.077	0.073	0.061	0.109	0.096	0.268	0.258	0.230	0.226	0.175	0.104
N	340	336	327	333	324	332	272	276	285	279	288	280

This table presents results from multivariate analyses examining abnormal buy-and-hold returns to insider trades for two groups of firms reporting goodwill impairments under SFAS 142. The first group is firms, in which insiders are net sellers (i.e., the variable *NETSELL_D* = 1). The second is firms, in which insiders are not net sellers (i.e., the variable *NETSELL_D* = 0). Insider trades (defined as open-market transactions by firm officers) are measured over six-month rolling windows covering the two years prior to the goodwill impairment event. Panel A presents results using the sub-sample of firms having a low quality information environment, defined as firms having below median analyst following. Panel B presents results using the sub-sample of firms having a high quality information environment, defined as firms having above median analyst following. Across both panels, the dependent variable is *ABNORMAL_RET*, the buy-and-hold abnormal returns to insider trades computed over windows starting directly after the end of the insider trading window and ending with the last month of the goodwill impairment quarter (i.e., month 0). ***, ** and * denote statistical significance at 1%, 5% and 10%, based on one-tail (two-tail) tests for the cases where we have (do not have) directional predictions. Standard errors are cluster-adjusted by time following Petersen (2009).

The variables are:

ABNORMAL_RET	=	the buy-and-hold abnormal returns to insider trades, computed over windows starting directly after the end of the insider trading window and ending with the last month of the goodwill impairment quarter (month 0);
NETSELL_D	=	an indicator variable equal to one for firms that experience net insider selling (i.e., total sales greater than total purchases) over the indicated six-month trading window, and zero otherwise;
SIZE	=	log of total assets measured at the end of the indicated six-month window;
BTM	=	the book-to-market ratio measured at the end of the indicated six-month window;
RETBH	=	the buy-and-hold return measured over the six-month window prior to the indicated insider trading measurement window;
RESTRUCT_D	=	an indicator variable equal to one for firms reporting restructuring charges in quarter t (the goodwill impairment quarter), and zero otherwise;
OTH_IMPAIR_D	=	an indicator variable equal to one for firms reporting any non-goodwill impairments in quarter t (the goodwill impairment quarter), and zero otherwise; and
UE_Q$_{t-k}$	=	the unexpected earnings for quarter $t-k$, where the unexpected earnings are measured as earnings at the end of quarter $t-k$ minus earnings at the end of quarter $t-k-4$, scaled by market value of equity at the end of quarter $t-k-1$.