Has Goodwill Accounting Gone Bad?*

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This version: January 2017

* We thank Patricia Dechow, Sunil Dutta, Todd Kravet, Alastair Lawrence, Lakshmanan Shivakumar (the editor), Xiao-Jun Zhang, an anonymous reviewer, and workshop participants at the University of California Berkeley and the AAA Annual Meetings for helpful comments. Kevin Li and Richard Sloan acknowledge financial support from University of California Riverside and University of California Berkeley, respectively.
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Prior to SFAS 142, goodwill was subject to periodic amortization and a recoverability-based impairment test. SFAS 142 eliminates periodic amortization and imposes a fair-value-based impairment test. We examine the impact of this standard on the accounting for and valuation of goodwill. Our results indicate that the new standard has resulted in relatively inflated goodwill balances and untimely impairments. We also find that investors do not appear to fully anticipate the untimely nature of post-SFAS 142 goodwill impairments. Overall, our results suggest that, in practice, some managers have exploited the discretion afforded by SFAS 142 to delay goodwill impairments, causing earnings and stock prices to be temporarily inflated.

Keywords: goodwill impairment; SFAS 142; accounting discretion; fair value accounting; resource misallocation

Data Availability: Data are publicly available from sources identified in the article.

1. Introduction

SFAS 142 significantly changed the accounting for goodwill and other intangible assets that are deemed to have 'indefinite' lives. Prior to SFAS 142, such assets were required to be amortized over an estimated life not to exceed 40 years. These assets were also subject to the impairment provisions of SFAS 121, requiring a reassessment of the carrying value upon the occurrence of events or circumstances indicating that the carrying amount of the investment may not be recoverable (i.e., the carrying amount is greater than the expected *undiscounted* future cash flows). SFAS 142 eliminates the periodic amortization of goodwill and replaces it with the requirement that goodwill be tested for impairment at least annually based on the estimated fair value of the reporting unit to which it belongs.[1] The FASB claimed that the new standard "will improve financial reporting because the financial statements of entities that acquire goodwill and other intangible assets will better reflect the underlying economics of those assets" (SFAS 142, Pg. 7).

Despite the FASB's claim, it is possible that the practical application of SFAS 142 may actually worsen financial reporting. First, by eliminating the periodic amortization of goodwill, a subjective impairment test becomes the only mechanism through which the expiration of the future benefits represented by goodwill flows through earnings. Second, given the difficulty in verifying fair value estimates for goodwill, it is possible that management will use this new discretion to delay impairment (e.g., Watts, 2003; Ramanna, 2008; Ramanna and Watts, 2012). Third, SFAS 142 coincided with the elimination of the 'pooling-of-interests' method of accounting for acquisitions. The pooling-of-interests method did not recognize goodwill, and so

[1] The FASB subsequently issued ASU 2011-08 in September of 2011, which loosened the provisions of SFAS 142. Specifically, ASU 2011-08 only requires that goodwill be tested for impairment when events and circumstances indicate that it is more likely than not that the fair value of a reporting unit is less than its carrying value. ASU 2011-08 became effective for fiscal years beginning after December 15, 2011. We exclude the post-2011 period from our primary results to avoid the confounding impact of ASU 2011-08. Results including the post-2011 period are qualitatively similar and are presented in section 4.3.6.

was an attractive alternative for firms seeking to maximize reported earnings. From a practical perspective, SFAS 142 could therefore result in more aggressive accounting, whereby assets are initially capitalized at cost and then only written down in the face of overwhelming evidence of impairment. Such accounting would cause the initial overstatement of assets and earnings, and the later understatement of earnings when the aggressive accounting is reversed through large and untimely 'big bath' asset impairments. Moreover, it is possible that investor fixation on reported asset values and earnings could cause investors to temporarily overvalue companies with inflated goodwill balances, leading to security mispricing and resource misallocation.

In this study, we compare the timeliness of goodwill impairments both before and after the implementation of SFAS 142. Our results indicate that impairments are relatively less timely after the implementation of SFAS 142. It appears that the elimination of periodic amortization, along with the difficulty in verifying the fair value of goodwill, has led to relatively more inflated goodwill balances and relatively less timely goodwill impairments.

We also examine whether investors appear to understand that goodwill balances are relatively more inflated and that impairments are relatively less timely under the SFAS 142 regime. Our results indicate that investors systematically overvalue firms with overstated goodwill balances under SFAS 142. In particular, we show that in the post-SFAS 142 period, firms with high goodwill balances and low profitability have both a higher probability of future goodwill impairments and lower future stock returns. These results are robust to excluding 2008 and 2009 from the sample, excluding firms that previously employed the pooling-of-interests method of accounting from the sample, to controlling for the complexity of firms' operations, and to controlling for other common return predictors. In addition, we find that the lower future stock returns are stronger when the CEO has a longer tenure, the firm issues equity, the firm is

smaller and institutional ownership is lower. We find no evidence that firms with indications of goodwill impairment are similarly misvalued prior to the implementation of SFAS 142. Thus, it appears that investors have failed to fully anticipate the less timely impairments under SFAS 142.

Our study provides the first large-sample evidence on the timeliness of goodwill impairments in the pre versus post SFAS 142 periods. Previous research by Hayn and Hughes (2006) reports evidence that goodwill impairments lag deteriorating operating performance in the pre-SFAS 142 period. Such evidence, however, is perhaps not surprising, because impairments in the pre-SFAS 142 period were based on the less stringent recoverability test. Our findings that goodwill impairments become even less timely after the implementation of the ostensibly stricter SFAS 142 fair value test highlight the changed nature of the incentives under SFAS 142. By eliminating the periodic amortization of goodwill and the pooling-of-interests method, SFAS 142 appears to have exacerbated incentives to delay impairment.

Second, our research complements the findings and associated interpretations in Ramanna and Watts (2012). They focus on a sample of firms in the post-SFAS 142 period that have market indications of goodwill impairment but choose not to record impairments. They conclude that managers use the unverifiable discretion under SFAS 142 to opportunistically delay impairment. We extend their results and show that the incidence of untimely impairment has been exacerbated in the post-SFAS 142 period and that investors do not fully anticipate the untimely nature of impairments under SFAS 142.

Third, our research provides an explanation for the results in Li, Shroff, Venkataraman and Zhang (2011). Li et al. study the market reaction to the announcement of goodwill impairments. They find evidence of a significantly negative reaction to impairments, but they

also find that the negative reaction is smaller in the post-SFAS 142 period. Our results suggest that the smaller reaction in the post-SFAS 142 period arises because impairments have become less timely and hence are more predictable.

Finally, by showing that untimely impairments lead to temporarily inflated stock prices, we provide the first large-sample evidence of resource misallocation associated with managerial discretion under SFAS 142. Bens (2006) questions whether the discretion in SFAS 142 has real effects because the underlying economic information may be anticipated from other sources. Our results indicate that the discretion leads to security mispricing, which will have real effects when firms issue or repurchase their securities.

2. Hypothesis Development

2.1 Accounting for goodwill

Prior to the release of SFAS 142 in 2001, APB Opinion No. 17 governed the accounting for goodwill. APB 17 required goodwill to be amortized to operating income over its estimated useful life, subject to a maximum life of 40 years. APB 17 also required the amortization period to be continuously evaluated, with the possible determination that the unamortized cost should be subject to an 'unusual deduction'. SFAS 121, introduced in 1995, provided a more specific set of accounting rules for the impairment of long-lived assets such as goodwill. SFAS 121 required a reassessment of the carrying amount of a long-lived asset upon the occurrence of certain events or a change in circumstances indicating that the carrying value of the asset may not be recoverable. The carrying value of an asset is deemed to be unrecoverable when the sum of the *undiscounted* estimated future cash flows generated by the asset is less than the carrying value. If the carrying value is determined to be unrecoverable, then the asset is written down to its

estimated fair value, where the fair value is defined as the *discounted* present value of the estimated future cash flows generated by the asset.

SFAS 142 was introduced in 2001, superseding portions of APB 17 and SFAS 121. The first major change in SFAS 142 is the elimination of periodic amortization charges for goodwill and other intangible assets that are judged to have indefinite lives. The second major change in SFAS 142 is the introduction of a more stringent annual impairment test based on the *fair value* of the reporting unit to which the goodwill is assigned. If the book value of the reporting unit is determined to exceed its fair value, then the fair value of all the identifiable assets and liabilities of the reporting unit must be determined. The fair value of the goodwill is then calculated as the fair value of the business unit less the net fair value of its identifiable assets and liabilities. SFAS 142 requires that the assets and liabilities be restated to their fair values, with a corresponding impairment charge to earnings.

2.2 Prior research

The fair value of goodwill estimated under SFAS 142 is not based directly on actively traded market prices, raising the concern that it is susceptible to opportunistic managerial discretion (Holthausen and Watts, 2001; Watts, 2003). Several studies provide evidence consistent with the exercise of opportunistic discretion in the application of SFAS 142. Ramanna (2008) shows that firms with more potential for opportunism (the "pro-poolers") used contributions from their political action committees to members of Congress as a means of lobbying for the preferred rules of SFAS 142. Beatty and Weber (2006) examine accounting discretion in the initial adoption of SFAS 142. Initial adopters could either record the new impairment charge at adoption as the effect of a change in accounting principle ('below the line'), or recognize the impairment to future income from continuing operations ('above the

line'). Beatty and Weber find that the likelihood and magnitude of a firm's 'below the line' impairment charge at adoption are associated with the cost of violating debt covenants, the extent to which the firm's stock price is tied to income from continuing operations, whether the firm has an earnings-based bonus plan, CEO tenure, and exchange delisting incentives.

Ramanna and Watts (2012) examine the motivations for impairment decisions in firms with positive goodwill and book-to-market ratios greater than one. They find no evidence that the decision to defer impairments is attributable to managers having favorable private information. Instead, they find evidence that managers use the discretion under SFAS 142 to opportunistically manipulate earnings by selectively delaying goodwill impairment.

2.3 Development of hypotheses

Our primary objective is to examine the impact of SFAS 142 on the timeliness of goodwill impairments. Although SFAS 142 introduced ostensibly more stringent impairment requirements, there are several reasons why the practical implementation of SFAS 142 may not result in timelier goodwill impairments. First and foremost, the determination of the fair value of goodwill is highly subjective and difficult to verify (Watts, 2003). Furthermore, management may be reluctant to impair goodwill due to concerns about acknowledging that they overpaid for an acquisition. Under such circumstances, it is possible that the previous mandatory amortization of goodwill could better reflect the underlying economics of goodwill. In particular, it is possible that while the future benefits represented by goodwill are very difficult to forecast, they are often quite short-lived.[2]

[2] A recent study of trademarks by Markables provides evidence consistent with this possibility for trademarks. Markables studied the valuation of 4,500 trademarks between 2003 and 2013 and concluded that "Overall, there is a clear global trend towards definite and shorter useful lives of trademarks. Appraisers become increasingly aware that all trademarks depreciate sooner or later, be it by regular amortization or by irregular impairment". See http://www.markables.net/trademark_useful_life.

There are two additional reasons why the adoption of SFAS 142 may not improve the timeliness of goodwill impairment. First, many managers welcomed SFAS 142 because it eliminated periodic amortization charges (see Ramanna, 2008). These managers were presumably concerned that investors viewed periodic amortization charges as an ongoing operating cost. In contrast, asset impairments are frequently characterized as one-off, non-cash 'big-bath' charges that can be ignored in assessing firm performance (Elliott and Shaw, 1988; Riedl, 2004). Consequently, in the pre-SFAS 142 environment, managers had an incentive to take timely goodwill impairments if they wanted to mitigate the impact of subsequent amortization charges on ongoing operating earnings. Second, SFAS 142 was introduced in concert with SFAS 141, which eliminated the alternative 'pooling-of-interests' method of accounting for acquisitions. The popularity of the pooling-of-interests method stemmed largely from the fact that it did not require the recognition of goodwill and the associated amortization charges. Thus, managers facing strong incentives to boost earnings, who could previously have structured deals to qualify for 'pooling-of-interests' accounting, must now recognize goodwill and may be more likely to delay impairment. Consequently, we hypothesize that goodwill impairment is timelier in the pre-SFAS 142 period:

H1. Goodwill impairment is timelier in the pre-SFAS 142 period.

We next examine whether the accounting discretion granted by SFAS 142 is costly to financial statement users. We focus on one important cost: security mispricing. Although prior research suggests that stock prices partially anticipate untimely goodwill impairments, it is possible that they are not fully anticipated. Thus, prior evidence of a negative stock price reaction to impairment announcements does not necessarily mean that impairments contain private information. Instead, it is possible that impairments could contain public information that

has been overlooked by investors. This would be the case if investors accepted at face value the FASB's claim that SFAS 142 better reflects the underlying economic value of goodwill.

To investigate this hypothesis, we use a parsimonious set of financial statement variables to identify firms with delayed goodwill impairments. We hypothesize that stock prices do not fully anticipate the delayed goodwill impairments in the post-SFAS 142 period.

H2. Stock prices do not fully anticipate the untimely nature of goodwill impairments in the post-SFAS 142 period.

3. Data and sample selection

Our primary sample employs common stocks from the intersection of the Compustat fundamental annual database and the CRSP stock return database from 1996 to 2011. Our sample period starts in 1996 because SFAS 121 became effective for fiscal years beginning after December 15, 1995. The primary sample ends in 2011 because the FASB issued Accounting Standards Update (ASU) 2011-08 in September 2011, which adopted a less stringent qualitative approach to test for goodwill impairment (See Footnote 1 for details).

SFAS 142 became effective for fiscal years beginning after December 15, 2001, with early adoption permitted for fiscal years beginning after March 31, 2001. Reporting incentives differed in the adoption year, because managers had the option of reporting any transitional goodwill impairment 'below the line' as a change in accounting principle (Beatty and Weber, 2006). We exclude observations in the three years from 2001 to 2003 to eliminate the potentially confounding effects of this transition period. Consequently, the pre-SFAS 142 period in our sample is from 1996 to 2000 and the post-SFAS 142 period is from 2004 to 2011.

Since our study focuses on goodwill impairments, we limit our sample to firm-years with a positive goodwill balance on Compustat at the beginning of the year. Goodwill impairment

amounts (GDWLIP) are available from Compustat starting in 2000. In order to compare the accounting for goodwill impairments under different regimes, we estimate goodwill impairment amounts (E_GDWLIP) from changes in goodwill balances (GDWL). In the pre-SFAS 142 period, we define the estimated goodwill impairment as the reduction in the goodwill balance during the year if (i) the reduction exceeds a 5% threshold relative to the beginning goodwill balance, and (ii) the firm also reports negative special items (SPI) that are at least as large as the reduction in goodwill. We impose the 5% threshold because goodwill is subject to periodic amortization in this period and we seek to eliminate small reductions in goodwill that probably reflect amortization.[3] Under the SFAS 142 regime, there is no goodwill amortization, and so we replace the 5% threshold with a 0% threshold. To mitigate concerns that our findings are unduly influenced by this difference in research design between the pre- and post-SFAS 142 periods, we perform robustness test by implementing the 5% requirement in both periods and obtain qualitatively similar results.

It is also possible that a reduction in the goodwill balance could be due to a divestiture rather than goodwill impairment. Following Dittmar and Shivdasani (2003) and Schlingemann et al. (2002), we use a decline in the number of segments to identify a divestiture. We then exclude observations with both a decline in the number of segments and a reduction in the goodwill balance from our sample.

In order to examine firms' financial variables and stock returns in the quarters leading up to impairments, we also prepare certain figures using Compustat quarterly data. The quarterly estimated impairments are computed in the same way as the annual estimated impairments, but

[3] Under SFAS 121, firms could amortize goodwill over a period up to 40 years. Compustat, however, does not separately itemize goodwill amortization. The 5% reduction in goodwill is equivalent to an amortization policy of 20 years. We also examine alternative thresholds: 2.5%, 10%, and the higher of 5% or the median reduction in goodwill balance over the past three years. The results are similar using these alternative thresholds. In addition, we relax the requirement that negative special items be at least as large as the reduction of goodwill. The results are again robust with respect to this alternative approach.

using a 1.25% threshold for the reduction in goodwill balance over consecutive quarters. Because quarterly goodwill balances are only available starting in 2000, we use the reduction in other assets (AOQ) instead of goodwill to compute the quarterly estimated impairments.

To verify the accuracy of the estimated goodwill impairments (E_GDWLIP), we randomly select 30 observations from each year in the sample period and compare the estimated number with the reported number in the firms' 10-K filings. Forty seven (or 12.1%) of the 390 observations in the random sample have non-zero estimated impairment, with 17 in the pre-SFAS 142 period and 30 in the post-SFAS 142 period, respectively. The evidence suggests that the estimated impairment is a good proxy for the reported number. For example, the absolute difference between the estimated and reported number expressed as a percentage of the reported number is less than 10% for 14 (24) out of the 17 (30) observations with non-zero estimated impairment in the pre-SFAS 142 (post-SFAS 142) period. For the observations with zero estimated impairment, 96.3% and 96.2% are classified correctly in the pre- and post-SFAS 142 periods, respectively. Within the random sample, the Pearson (Spearman) correlation between the estimated and reported numbers is 0.851 (0.785) for the pre-SFAS 142 period and 0.816 (0.853) for the post-SFAS 142 period, respectively.[4] We also compare E_GDWLIP with GDWLIP reported by Compustat in the post-142 period.[5] Specifically, we select the 30 observations with the largest absolute differences between E_GDWLIP and GDWLIP expressed as a percentage of total assets and compare both numbers against the reported value in the firms' 10-K filings. This analysis is reported in Appendix A and shows that E_GDWLIP is more

[4] We also find that the difference between the estimated and reported numbers is not significantly correlated with the variables in our subsequent tests, which include firm size, goodwill balance, book-to-market ratio, accruals, past year return, return on assets, equity issuance, and cash used for acquisitions.
[5] We set missing GDWLIP to zero for firms with a positive goodwill balance.

accurate than GDWLIP for 18 of the 30 observations. In these cases, Compustat either misses the goodwill impairment or includes the impairment of other assets in the goodwill impairment.

Table 1 reports descriptive statistics for various subsamples. The pre-142 subsample includes 9,049 firm-year observations with positive beginning goodwill balances from 1996 to 2000. The average beginning goodwill balance (scaled by total assets and labeled GTA_{t-1}) is 0.123. Estimated goodwill impairments are present in 10.2% of the pre-142 observations, with no significant concentration of impairments in any particular calendar year. The average E_GDWLIP is 36.0% of the beginning balance of goodwill.

The post-142 sample includes 19,290 firm-year observations with positive goodwill balances from 2004 to 2011. The average GTA_{t-1} is 0.146. Estimated goodwill impairments are present in 12.4% of the post-142 observations, with evidence of clustering in the 2008 and 2009 financial crisis years. The average E_GDWLIP is 35.8% of beginning goodwill, similar to that in the pre-142 sample.

Table 1 also reports the corresponding statistics for actual goodwill impairments, as reported by Compustat (GDWLIP) in the post-142 period. Actual goodwill impairments are present in 13.0% of the post-142 observations and the distribution of GDWLIP across the years is similar to that of E_GDWLIP. The Pearson and Spearman correlations between E_GDWLIP and GDWLIP (scaled by the beginning goodwill balance) are 0.818 and 0.587, respectively. Finally, the average magnitude of GDWLIP (48.8% of beginning goodwill) is higher than both the corresponding E_GDWLIP in the post-142 period (35.8%) and the E_GDWLIP in the pre-142 period (36.0%). The analysis in Appendix A suggests that this may arise because Compustat sometimes mistakenly includes other asset impairments in goodwill impairments.

Table 1 also reports descriptive statistics for the alternative definition of estimated goodwill impairments in the post-142 period that uses the same 5% threshold as in the pre-142 period. Using this alternative definition, only 7.6% of the post-142 sample has non-zero E_GDWLIP and the average E_GDWLIP is 57.6% of the beginning goodwill balance. This evidence suggests that if we apply the same definition in both periods, impairments in the post-142 period are less frequent, but much larger, than those in the pre-142 period. The Pearson and Spearman correlations between this alternative definition of E_GDWLIP and GDWLIP (scaled by the beginning goodwill balance) are 0.818 and 0.677, respectively.

4. Empirical results

4.1 Are impairments less timely under SFAS 142?

Hypothesis 1 predicts that goodwill impairments are less timely in the post-142 period. To evaluate the timeliness of goodwill impairments, we begin by examining the magnitude of impairments in the pre- and post-SFAS 142 periods. Specifically, we investigate the frequency with which goodwill impairments occur in large discrete amounts. SFAS 142 requires firms to perform goodwill impairment tests at least annually and record impairment whenever the fair value of goodwill drops below the carrying amount. In contrast, under SFAS 121, goodwill was not deemed impaired until the sum of the *undiscounted* future cash flows was less than the carrying value, and the associated impairment loss was measured as the difference between the carrying amount and the *discounted* future cash flows. Because undiscounted future cash flows can be substantially bigger than the discounted cash flows for goodwill, we would expect impairments under SFAS 121 to be relatively infrequent and large in magnitude. Counteracting this effect, however, are the increased managerial incentives to delay impairments in the post-SFAS 142 environment. As discussed in the hypothesis development section, these

incentives flow from the elimination of periodic amortization under acquisition accounting and the elimination of pooling-of-interests accounting.

Figure 1 presents a frequency plot of goodwill impairment magnitudes (scaled by beginning-of-year goodwill) for observations with non-zero goodwill impairment. Panel A employs a 5% threshold for the estimated impairment in the pre-142 sample and a 0% threshold in the post-142 sample. During the pre-142 period, 28% of the impairment firms report estimated impairments greater than 50% of the beginning goodwill balance, with 18% writing off almost the entire goodwill balance in a single year. By comparison, during the post-142 period, 34% of the impairment firms report estimated impairments greater than 50% of the goodwill, with 21% writing off almost the entire goodwill balance in one year. The six percent difference (34%-28%) in the frequency of large impairments between the pre- and post-142 periods is significant at the 1% level ($t = 2.65$, untabulated). Thus, we see a higher frequency of very large impairments under SFAS 142. Note that because the definition of estimated impairment uses a 5% threshold in the pre-142 period and a 0% threshold in the post-142 period, we are not surprised to see a greater frequency of small impairments in the 0-10% bucket for the post-142 period. Nevertheless, we also see a greater frequency of large impairments in the post-142 period. The final bar in Panel A plots the frequency of actual goodwill impairment magnitudes using amounts from Compustat (GDWLIP). It shows that 47% of the impairments in the post-142 period are more than 50% of the goodwill balance, with 32% writing off the entire balance in a single year. Thus, using impairment data from Compustat, we see an even greater frequency of large impairments in the post-142 period.

To compare the pre- and post-142 periods on the same basis, Panel B plots the frequency of estimated impairments for both periods computed using a 5% threshold. Large impairments

are now even more heavily represented in the post-142 sample with 54% of the impairment firms writing off more than 50% of the goodwill and 34% writing off the entire goodwill balance in one year. The 26% difference (54%-28%) in the frequency of large impairments between the pre- and post-142 periods is significant at the 1% level (t = 12.91, untabulated). The higher frequency of firms taking 'big bath' write-offs of most of their goodwill balances in a single year is consistent with impairments being less timely under SFAS 142.

We turn next to our main tests of the timeliness of goodwill impairments.[6] These tests investigate the extent to which impairments lag market and financial indicators of impairment. A book-to-market ratio (BTM) greater than one for a firm with a positive goodwill indicates that the market believes that goodwill is likely impaired (Ramanna and Watts, 2012). Hence, we use an indicator variable for BTM greater than one (BTMG1) as the primary market indication of goodwill impairment. Financial performance also provides useful information regarding the value of goodwill (see ASU 2011-08 350-20-35-3Cd). To the extent that accounting performance correlates with economic performance, the accounting rate of return speaks to the fair value of the underlying assets. The combination of an unusually low rate of return and a large goodwill balance indicates that impairment is likely. We use ROA (operating income after depreciation and amortization divided by average total assets[7]) to measure the accounting rate of return, and GTA (goodwill scaled by total assets) to measure the goodwill balance. To capture the combination of low rate of return and high goodwill balance, we define an indicator variable (IMPI), which is set to one for observations with GTA greater than 10% *and* ROA less than zero, minus one for observations with GTA less than 5% *and* ROA greater than 5%, and zero

[6] For brevity, we report the results for the remaining tests with estimated impairment defined using a 0% threshold for the post-142 period. Results using a 5% threshold are qualitatively similar.

[7] We also replicated our results computing ROA using operating income before amortization. SFAS 142 changed the accounting for goodwill amortization, so it is possible that this change affected the ability of income to reflect firm performance. As a practical matter, our results are almost identical using income measured before amortization.

otherwise. A value of one indicates that goodwill is likely to be materially impaired, while a value of minus one indicates that goodwill is unlikely to be materially impaired. We use IMPI as our primary financial (i.e., non-market) indicator of goodwill impairment. We use BTMG1 and IMPI in year t-1 to predict goodwill impairments in year t.

Panel A of Table 2 reports descriptive statistics for BTMG1 and IMPI in period t-1 for observations with and without goodwill impairments in period t. If a firm makes a less timely impairment in year t, its impairment indicators should be relatively larger in period t-1. The first three columns of Table 2 report results for the pre-142 period using estimated impairments. Average IMPI is similar between the impairment and non-impairment samples (-0.122 vs. -0.139), with the difference statistically insignificant. This evidence indicates that the association between IMPI and future impairment is weak in the pre-142 period. This may arise because periodic amortization prevents goodwill balances from growing too large and hence mitigates potential delays in impairment. Compared to the non-impairment sample, the impairment sample has significantly higher average BTM (0.706 vs. 0.611) and BTMG1 (0.206 vs. 0.149) in year t-1, indicating that investors anticipate some untimely impairment.

The next three columns of Panel A report results for the post-142 period using estimated impairments. Compared to the non-impairment sample, the impairment sample has higher IMPI (0.016 vs. -0.083), higher BTM (0.792 vs. 0.584) and higher BTMG1 (0.242 vs. 0.110). The differences in these variables between the two samples are all significant at the 1% level. Thus, both the financial and market indicators suggest that goodwill impairments are untimely in the post-142 period.

The "(3)-(1)" column reports the differences in the values of the impairment indicators for firms with subsequent impairments across the pre- and post-142 periods. Focusing on the two

primary indicators, IMPI and BTMG1, we observe that both variables are significantly higher in the post-142 period, suggesting that the goodwill impairments are less timely under SFAS 142.

The next three columns of Panel A report results for the post-142 period using the actual Compustat impairment amounts. The statistics for this sample are largely consistent with those using the estimated impairment amounts, again indicating that goodwill impairments are untimely in the post-142 period. The last column of Panel A reports the differences between the Compustat impairment sample in the post-142 period and the estimated impairment sample in the pre-142 period. The results are consistent with those in column "(3)-(1)", and show that both IMPI and BTMG1 are significantly higher in the post-142 period.

Panel B reports the Pearson (above diagonal) and Spearman (below diagonal) correlations for the pre- and post-142 periods. We introduce two new impairment dummy variables called 'E_IMPDUM' and 'IMPDUM' that take on the value of one if firms have non-zero E_GDWLIP or GDWLIP in period t respectively, and zero otherwise. We then correlate E_IMPDUM and IMPDUM with each of the impairment indicators from period t-1. Consistent with the results in Panel A, both IMPI and BTMG1, our primary financial and market indicators of goodwill impairment, are more strongly correlated with E_IMPDUM and IMPDUM in the post-142 period than in the pre-142 period. This evidence is again consistent with less timely impairments in the post-142 period.

Table 3 Panel A reports conditional logit regressions of E_IMPDUM and IMPDUM, the dummy variables for goodwill impairment in year t, on the two primary financial and market indicators of impairment (IMPI and BTMG1) in year t-1, estimated using firm-level clustering for standard errors:

$$E\_IMPDUM_t = \alpha + \beta_1 IMPI_{t-1} + \beta_2 BTMG1_{t-1} + \varepsilon_t$$

and

$$IMPDUM_t = \alpha + \beta_1 IMPI_{t-1} + \beta_2 BTMG1_{t-1} + \varepsilon_t \quad (1)$$

The first column of Panel A reports the results in the pre-142 period using E_IMPDUM. The coefficients on IMPI and BTMG1 both have the predicted positive sign. However, only the coefficient on BTMG1 is statistically significant (z = 3.31). The second column reports results for the post-142 period using E_IMPDUM. The coefficients on IMPI and BTMG1 in the post-142 period are not only highly significant, but also much higher than the corresponding values in the pre-142 period. Specifically, the coefficients on IMPI and BTMG1 are 0.604 (z = 6.85) and 1.114 (z = 13.94) in the post-142 period, compared to 0.162 and 0.509 in the pre-142 period. The third column compares the coefficients across the pre-142 and post-142 regressions. The differences in the two coefficients are both significant at the 1% level. The fourth column reports results for the post-142 period using IMPDUM. The results are similar to those using E_IMPDUM.

Panel B of Table 3 analyzes the marginal effects of IMPI and BTMG1. Specifically, this table reports the change in the predicted impairment probability (IPROB) when one indicator changes from zero to one, while the other indicator is at its mean value. IPROB is estimated each year using the observations in all prior years within the same reporting regime. The first two columns show that in the pre-142 period, IPROB increases by 0.040 (0.125) when IMPI (BTMG1) changes from zero to one. In contrast, IPROB increases by 0.143 (0.256) when IMPI (BTMG1) changes from zero to one in the post-142 period. Hence, the marginal effects of IMPI and BTMG1 are more than doubled in the post-142 period. In sum, the results in Table 3 confirm that goodwill impairments under SFAS 142 are more predictable than impairments under SFAS 121, providing direct evidence that impairments in the post-142 period are less timely.

Table 4 analyzes the out-of-sample predictive ability of Equation (1). We partition the sample into five groups based on the estimated $IPROB_{t-1}$.[8] In the pre-142 period, the average $IPROB_{t-1}$ ranges from 0.099 for group 1 to 0.130 for group 5, with the difference (0.031) significant at the 1% level. The corresponding average E_IMPDUM_t generally increases with $IPROB_{t-1}$. The difference in E_IMPDUM_t between group 5 and group 1 of $IPROB_{t-1}$ is 0.009, which is statistically insignificant (t = 0.59). The results are consistent with the evidence in prior tests that the predictive ability of IMPI and BTMG1 with respect to future impairments is weak during the pre-142 period. In contrast, the predictive ability of these two variables significantly improves in the post-142 period. Specifically, the average $IPROB_{t-1}$ ranges from 0.052 for group 1 to 0.209 for group 5. The difference between the two groups (0.157) is about five times the corresponding value (0.031) in the pre-142 period. We observe a similar increase in the range of E_IMPDUM_t. The average E_IMPDUM_t increases from 0.075 for group 1 to 0.240 for group 5. The difference (0.165) is highly significant (t = 16.40). When using the actual Compustat impairment amounts (GDWLIP) to construct IMPDUM and IPROB, we obtain similar results, as shown in the last two columns of Table 4. These results confirm that goodwill impairments are more predictable (i.e., less timely) in the post-142 period.

To graphically illustrate the differential timeliness of goodwill impairments under different regimes, we plot the mean values of BTM, BTMG1 and IMPI for impairment firms over the three years prior to impairment. Panel A of Figure 2 plots the mean BTM of the impairment firms over the 12 quarters leading up to the quarter of the goodwill impairment (i.e., quarter t). In the pre-142 period, the average BTM increases steadily from 0.526 in quarter t-12 to 0.761 in quarter t-1 before dropping to 0.741 in the impairment quarter. In the post-142 period,

[8] Given that IMPI has three different values (-1, 0, 1) and BTMG1 has two different values (0, 1), IRPOB can only take on six different values each year. We combine the observations with the highest two IPROB values to form group 5.

the average BTM is consistently much higher than in the pre-142 period. For example, the mean BTM in quarter t-1 is 1.025, which is significant higher than the corresponding value (0.761) in the pre-142 period (t-stat for the difference is 11.84, untabulated). This result indicates that goodwill is more overstated prior to impairment in the post-142 period. The decrease in the mean BTM in the impairment quarter t is also much larger in the post-142 period (0.062) than in the pre-142 period (0.020), consistent with larger and more untimely impairments in the post-142 period, as seen in Figure 1. The results cannot be attributed to the different BTM levels in the pre- and post-142 periods as the mean BTM of the non-impairment firms is close to 0.600 (untabulated) over the 12-quarter window in both pre- and post-142 periods.

Panel B of Figure 2 plots the mean BTMG1 over the 12-quarter window. In quarter t-12, 17.9% of impairment firms in the post-142 period have BTM ratio greater than one, compared to 11.2% in the pre-142 period. The percentage steadily increases over the 12-quarter horizon. In quarter t-1, 38.6% of impairment firms in the post-142 period have BTM ratio greater than one, compared to 24.5% in the pre-142 period. The difference (14.1%) is significant at the 1% level (t = 11.65, untabulated). In quarter t, we also observe a bigger decrease in average BTMG1 in the post-142 period (0.036 vs. 0.019). In sum, both BTM and BTMG1 are consistently higher in the 12 quarters leading up to an impairment and decline more significantly in the quarter of the impairment during the post-142 period. These plots illustrate that the impairment lag has become much greater in the post-142 period. Panel C of Figure 2 plots the mean IMPI over the three years prior to the year of impairment, again indicating that the delay in goodwill impairment is more pronounced in the post-142 period. Finally, in the three panels of Figure 2, we also provide corresponding plots for the post-142 period using the actual Compustat impairment amounts and the results are consistent with those using the estimated impairment amounts.

In order to assess whether the elimination of the pooling-of-interests method played a significant role in the less timely post-SFAS 142 impairments, we use the ACQMETH variable on Compustat to identify firms that used pooling-of-interests in the pre-SFAS 142 period and exclude these firms from the sample. This requirement removes 991 observations (11% of the sample) from the pre-142 period and 942 observations (5% of the sample) from the post-142 period. Our results are robust with respect to the exclusion of these firms.

To summarize, the evidence consistently indicates that goodwill impairments are less timely under SFAS 142, with both market and financial indicators providing strong evidence that the goodwill is more overvalued at the time of impairment in the post-142 period. The evidence supports Hypothesis 1 and is inconsistent with the FASB's claim that goodwill accounting under SFAS 142 should better reflect the underlying economics of goodwill (SFAS 142, Pg. 7).[9]

4.2 Do inflated earnings and goodwill mislead investors?

The evidence in Table 3 shows that BTMG1 predicts future impairments, indicating that stock prices at least partially anticipate impairments. However, the evidence in Table 3 also indicates that IMPI has incremental explanatory power for impairments in the post-142 period. These results suggest that stock prices do not fully impound all available information about future impairment in the post-142 period. In this section, we formally test whether IMPI predicts the future stock price declines associated with unanticipated impairments.[10]

We first partition the samples into three groups based on IMPI in year t-1 and examine the cumulative size and book-to-market adjusted stock returns ($BHAR_t$). We follow Dharan and

[9] We also examine the three-day cumulative stock return around the announcement of earnings including goodwill impairments. We find that the announcement of earnings with goodwill impairments generates significant negative stock returns in both the pre- and post-SFAS 142 periods, and that the magnitude of the market reaction is smaller in the post-SFAS 142 period, consistent with the findings in Li et al. (2011). The smaller reaction in the post-SFAS 142 period is consistent with these impairments being less timely and hence more predictable.

[10] In unreported tests, we also examine whether IPROB, the estimated probability of goodwill impairment from Equation (1), predicts future stock price declines. Note that IPROB is less suitable candidate for predicting future stock returns, because it incorporates BTMG1, reflecting expected goodwill impairments that have already been anticipated in stock prices. Consistent with this intuition, the results show that the return predictability of IPROB is somewhat weaker than that of IMPI.

Ikenberry (1995) in adjusting returns for book-to-market and size. The $BHAR_t$ for each firm is measured as the buy-hold return over the 12-month period starting three months after the end of fiscal year t-1 in excess of the buy-hold return on its size and book-to-market matched portfolio over the same period. Panel A of Table 5 reports the mean values of E_IMPDUM, IMPDUM and BHAR in year t for the portfolios formed on IMPI=1 (high likelihood of impairment), IMPI=0 (medium likelihood of impairment) and IMPI=-1 (low likelihood of impairment) in year t-1. In the pre-142 period, although IMPI is a significant predictor of future impairments, it does not predict future returns. The difference in BHAR between the groups with IMPI=1 and IMPI=-1 is insignificant (t = 0.21). The evidence suggests that investors efficiently anticipate delayed goodwill impairments under SFAS 121.

Turning to the post-142 period, IMPI is a highly significant predictor of both future impairments and future stock returns. In particular, the average BHAR is 3.4% (t = 2.54) for the group with IMPI=-1 and -7.5% (t = -4.85) for the group with IMPI=1. The difference in BHAR between the two groups is 10.9% and significant at the 1% level (t = 4.21). These results suggest that investors temporarily overvalue firms with inflated goodwill balances in the post SFAS 142 period. Investors appear to mistakenly embrace the FASB's claim that goodwill balances under SFAS 142 should more closely reflect economic reality, resulting in the overpricing of stocks with a high probability of impairment.

Figure 3 plots the 12-month BHAR for portfolios formed on IMPI. In the post-142 period (Panel B), the stock prices of the group with IMPI=1 (i.e., strong indication of impairment) steadily decrease over the subsequent 12-month period. This is consistent with the stock prices of the firms with a higher likelihood of impairment being temporarily inflated. Note that we do not see such evidence in the pre-142 period (Panel A), suggesting that the overvaluation of these

firms is related to the change in goodwill accounting rather than a more general delayed response to poor performance.

Previous research documents a large number of variables that appear to predict future stock returns (e.g., Hou, Xue and Zhang, 2015). In Panel B of Table 5, we examine whether some of the most widely documented return predictors subsume the return predictability of IMPI. The predictors considered are book-to-market ratio (BTM_{t-1}), size ($SIZE_{t-1}$), accruals ($ACCRUAL_{t-1}$), price momentum (RET_{t-1}), return on assets (ROA_{t-1}), equity issuance (EXF_{t-1}) and acquisitions (AQC_{t-1}). Detailed variable definitions are provided in the footnote to Table 5. The coefficient on IMPI remains negative and statistically significant in the post-142 period, indicating that the predictive power of IMPI is incremental to that of other commonly known return predictors.

To examine whether the return difference between the two extreme IMPI groups is driven by different exposures to common risk factors, we run monthly time-series multi-factor models following Fama and French (1993) and Carhart (1997). Panel C of Table 5 shows that in the post-142 period, the intercept (or alpha) is 0.4% (t = 3.10) for the group with IMPI=-1, and -0.4% (t = -2.28) for the group with IMPI=1. The difference in the monthly alpha (0.8%) between the two groups is statistically significant, with a t-statistic of 2.58, and economically significant, being equivalent to 10% per annum. The evidence indicates that the return spread between the two extreme groups of IMPI is not driven by different exposures to common risk factors.

To summarize, the evidence in Table 5 and Figure 3 indicates that the delayed impairments under SFAS 142 do not appear to be fully anticipated by investors, resulting in temporarily inflated stock prices for these firms.

4.3 Sensitivity analyses

4.3.1 Measurement error in IMPI

The evidence in the prior section indicates that IMPI more strongly predicts goodwill impairments and stock returns in the post-142 period. One concern with this finding is that IMPI has more potential measurement error for multi-segment companies than for single segment companies. This is because goodwill is assigned and valued at the level of the individual reporting unit (i.e., operating segment), while we calculate IMPI at the firm level due to the lack of detailed financial data for segments. To examine the impact of any associated measurement error in IMPI on our results, we evaluate the ability of IMPI to predict future impairments and stock returns within subsamples partitioned on the number of segments. We split the sample into two groups. The first group includes observations with a single segment and the second group includes observations with multiple segments.

The results for the two segment groupings are reported in Table 6. Panel A of Table 6 reports results for the pre-142 period. IMPI predicts future goodwill impairments for both groups, but does not predict future returns in either group. The results provide reassurance that the lack of return predictability of IMPI in the pre-142 period is due to timelier goodwill impairments, rather than due to the measurement error in IMPI.

Panel B of Table 6 reports results for the post-142 period. The ability of IMPI to predict future goodwill impairments and future stock returns is slightly stronger for the single segment group. Specifically, the difference in impairment likelihood between the group with IMPI=-1 and the group with IMPI=1 is -0.134 (t = -4.41) for the single segment subsample versus -0.101 (t=-3.81) for the multiple segments subsample. However, the difference between the two subsamples (-0.033) is not statistically significant. The stock return spread between the group

with IMPI=-1 and the group with IMPI=1 is 0.144 (t = 3.64) for the single segment subsample, higher than the 0.088 (t = 2.83) for the multiple segments subsample. Once again, the difference between the two subsamples (0.056) is not statistically significant. The fact that we continue to find robust results for firms with multiple segments suggests that while this source of measurement error may be present, it does not affect our key inferences.

4.3.2 Incentives for earnings management

Managers' reluctance to impair goodwill is likely to vary with incentives to manage earnings. Based on the findings in prior studies (e.g., Beatty and Weber, 2006; Burgstahler and Eames, 2006; McVay et al., 2006; and Teoh et al., 1998), we predict that the negative association between IMPI and future stock returns is stronger for firms that beat analysts' forecasts ($BEAT_{t-1}$), issue equity ($ISSUE_{t-1}$), and have longer-tenured CEOs ($LONG_{t-1}$). $BEAT_{t-1}$ is an indicator variable set to one if firms' annual earnings in year t-1 are equal to or higher than the last available consensus forecast on I/B/E/S, and zero otherwise. $ISSUE_{t-1}$ is an indicator variable set to one if firms issue equity in year t-1, and zero otherwise. $LONG_{t-1}$ is an indicator variable set to one if CEO tenure is higher than the annual sample median, and zero otherwise.

Table 7 reports cross-sectional regressions of $BHAR_t$ on $IMPI_{t-1}$, $BEAT_{t-1}$, $ISSUE_{t-1}$, $LONG_{t-1}$, and interactions between $IMPI_{t-1}$ and the three incentive variables. The second column shows that in the post-142 period, the coefficients on the interaction terms, $IMPI_{t-1}$*$ISSUE_{t-1}$ and $IMPI_{t-1}$*$LONG_{t-1}$, are both negative and statistically significant, indicating that IMPI is more negatively associated with future stock returns for firms issuing equity and for firms with longer-tenured CEOs. Thus, there is some evidence consistent with opportunistic CEO incentives driving the decision to delay impairments.

4.3.3 Information environment

Managerial discretion is not without boundaries. Prior studies suggest that sell-side analysts monitor and discipline managerial opportunism (e.g., Chen et al., 2014; Jung et al., 2012; Yu, 2008). Institutional shareholders also have incentives to monitor corporate performance, as their scale allows them to obtain greater benefits from monitoring (Shleifer and Vishny, 1986). Finally, information is generally more rapidly assimilated for larger firms (Freeman, 1987). With more information, external stakeholders are likely able to monitor managers more effectively. Based on the discussions above, we expect that the negative association between IMPI and future stock returns will be weaker for firms with analyst following ($FOLLOW_{t-1}$), higher institutional ownership ($HIGHIO_{t-1}$), and larger market capitalization ($LARGE_{t-1}$). $FOLLOW_{t-1}$ is an indicator variable set to one if firms have analyst following in year t-1, and zero otherwise. $HIGHIO_{t-1}$ is an indicator variable set to one if institutional ownership, measured by the percentage of shares held by Form 13-F filers, is higher than the annual sample median, and zero otherwise. $LARGE_{t-1}$ is an indicator variable set to one if a firm's market value of equity is higher than the annual sample median, and zero otherwise.

Table 8 reports cross-sectional regressions of $BHAR_t$ on $IMPI_{t-1}$, $FOLLOW_{t-1}$, $LARGE_{t-1}$, $HIGHIO_{t-1}$, and interactions between $IMPI_{t-1}$ and these three information environment variables. The second column shows that in the post-142 period, the coefficients on $IMPI_{t-1}$*$LARGE_{t-1}$ and $IMPI_{t-1}$*$HIGHIO_{t-1}$ are both positive and statistically significant, indicating that a richer information environment and higher institutional ownership mitigate the overpricing associated with delayed impairments.

4.3.4 Excluding 2008 and 2009

As shown in Table 1, a large proportion of the goodwill impairments in the post-SFAS 142 period occur during 2008 and 2009, the two years of the financial crisis. We examine whether our primary findings, that goodwill impairments are less timely and less anticipated by investors in the post-142 period, are driven by these two years. We replicate all of the tests in the post-142 period after excluding observations from 2008 and 2009. The evidence corroborates our primary findings. IMPI continues to predict both future impairments and stock returns. We do not tabulate these results for brevity.

4.3.5 Alternative cutoffs for IMPI

Our primary results indicate that the goodwill impairment indicator, IMPI, is a simple and powerful tool for identifying delayed goodwill impairment and security mispricing under SFAS 142. These tests employ a measure of IMPI in which observations with GTA greater than 0.1 *and* ROA less than zero are coded as having indications of impairment. In this section, we examine the robustness of the results to alternative cutoffs for IMPI. Specifically, we first decrease the cutoff values for GTA from the initial value of 0.1 in increments of 0.01. The untabulated results show that the return predictability of IMPI in the post-142 period remains significant until the cutoff for GTA reaches 0.03. We next reset the GTA cutoff to 0.1 and increase the cutoff value for ROA from the initial value of zero in increments of 0.01. The untabulated results show that the return predictability of IMPI in the post-142 period remains significant until the cutoff for ROA reaches 0.05. Thus, the results are robust with respect to a range of reasonable cutoffs for IMPI.[11]

4.3.6 Post-ASU 2011-08 period

[11] Because we focus on the overvaluation of firms with a high likelihood of impairment, we hold the cutoffs for IMPI=-1 (i.e., low likelihood of impairment) constant in these sensitivity tests. An exception occurs when the GTA cut-off for IMP=1 falls below 0.05, in which case we change the corresponding cutoff for IMPI=-1 accordingly. For example, when using a 0.03 GTA cutoff, IMPI is equal to one for observations with GTA>=3% and ROA<0, minus one for observations with GTA<3% and ROA>5%, and zero otherwise.

In this section, we examine the robustness of the results during the post-ASU 2011-08 period. Recall that ASU 2011-08 imposes a less stringent qualitative impairment test and is effective for fiscal years starting after December 15, 2011. The post-ASU 2011-08 sample consists of 8,484 observations from 2012 to 2015 with 1,186 estimated goodwill impairments. Panel A of Table 9 reports conditional logit regressions of E_IMPDUM, the indicator variable for estimated goodwill impairment in year t, on the two primary financial and market indicators (IMPI and BTMG1) in year t-1. The third column shows that the coefficients on IMPI and BTMG1 both have the predicted positive sign and are statistically significant in the post-ASU 2011-08 period. The fifth column shows that the coefficients on IMPI are similar both before and after ASU 2011-08. In contrast, the coefficient on BTMG1 is significantly smaller in the post-ASU 2011-08 period, and it is quite similar to the coefficient in the pre-SFAS 142 period. These results indicate that firms with book-to-market ratios greater than one have taken more timely goodwill impairments in the post-ASU 2011-08 period. These results seem at odds with the less stringent qualitative impairment test in ASU 2011-08. However, there is an alternative explanation for these results. Starting in 2008, the SEC emphasized that companies with material goodwill balances that also have book value in excess of market capitalization should consider goodwill for impairment.[12] This was followed by numerous comment letters in which the SEC challenged companies for untimely goodwill impairments based on book value in excess of market capitalization.[13] Thus, companies could be responding to increased scrutiny from the SEC.

[12] See Robert G. Fox III, Professional Accounting Fellow, Office of the Chief Accountant, "Current SEC and PCAOB Developments" remarks to the AICPA (Dec. 8, 2008) http://www.sec.gov/news/speech/2008/spch120808rgf.htm.
[13] See https://www.lw.com/thoughtLeadership/declining-market-capitalizations-and-the-impairment-of-goodwill and http://blogs.wsj.com/cfo/2012/07/17/sec-makes-barnes-noble-justify-unimpaired-goodwill/.

Panel B of Table 9 analyzes stock return results for the post-ASU 2011-08 sample. In this period, the difference in BHAR between the groups with IMPI=-1 and IMPI=1 has the predicted positive sign. The return spread, however, drops from 10.9% in the pre-ASU portion of the post-SFAS 142 period to only 2.5% in the post-ASU period, and is statistically insignificant (t = 0.41). This evidence suggests that investors have more efficiently anticipated delayed goodwill impairments since the passage of ASU 2011-08, perhaps learning from their earlier mistakes.

5. Conclusion

SFAS 142 eliminates the systematic amortization of goodwill, relying solely on a fair-value based impairment test. In this study, we examine the standard's impact on the accounting for and valuation of goodwill. We show that the new accounting standard has led to relatively inflated goodwill balances and untimely impairments. We also find that investors do not appear to have fully anticipated the untimely nature of post-SFAS 142 goodwill impairments.

The fair value model envisioned by SFAS 142 is no doubt well intentioned, but is subject to opportunistic managerial behavior. Managers are presumably reluctant to impair goodwill, as any impairment is likely to be interpreted as an admission that they overpaid for the associated business acquisition. The subjective nature of goodwill impairments also makes it difficult for auditors and regulators to enforce impairments. Consequently, it appears that the systematic amortization of goodwill paired with a periodic impairment test may lead to accounting that better reflects the underlying economics of goodwill.

Appendix A: Comparison of estimated goodwill impairment and Compustat goodwill impairment in post-SFAS 142 period.

No	Fiscal year end	Company name	CIK	Total assets	Negative special items	Goodwill beginning balance	Goodwill ending balance	Compustat impairment	Estimated impairment	|Comp.-Est.| Total assets	Reported (10-K)	|10K-Comp.|	|10K-Est.|	Estimated more accurate	Reason
1	20041231	INTELIDATA TECHNOLOGIES CORP	1021810	10.61	-25.77	26.24	0.00	-25.77	0.00	243%	-25.77	0.00	25.77	No	We underestimate due to the requirement on special items.
2	20101231	EDIETS.COM INC	1094058	3.60	-7.08	6.84	0.00	0.00	-6.84	190%	-6.84	6.84	0.00	Yes	Compustat misses goodwill impairment.
3	20060630	MSGI SECURITY SOLUTIONS INC	14280	2.20	-3.63	3.11	0.00	0.00	-3.11	141%	-3.11	3.11	0.00	Yes	Compustat misses goodwill impairment in discontinued operations (AONet)
4	20041231	REDBACK NETWORKS INC	1081290	307.44	-486.43	431.74	0.00	0.00	-431.74	140%	-284.09	284.09	147.66	Yes	Compustat misses the write off in "fresh-start adjustment". We overestimate due to incorrect goodwill balance reported in Compustat.
5	20081231	INUVO INC	829323	29.22	-40.20	79.80	3.35	-37.88	0.00	130%	-74.01	36.13	74.01	No	Compustat misses goodwill impairment in discontinued operations (Direct and Advertising Segments). We underestimate due to the requirement on special items.
6	20070331	ATARI INC	1002607	42.82	-48.12	66.40	0.00	-54.13	0.00	126%	-54.13	0.00	54.13	No	We underestimate due to the requirement on special items.
7	20051231	PRGX GLOBAL, INC.	1007330	162.06	-187.28	170.68	4.60	0.00	-166.08	102%	-165.98	165.98	0.11	Yes	Compustat misses goodwill impairment.
8	20071231	TEARLAB CORP	1299139	15.31	-22.87	14.45	0.00	0.00	-14.45	94%	-14.45	14.45	0.00	Yes	Compustat misses goodwill impairment.
9	20081231	ENTERCOM COMMUNICATIONS CORP	1067837	996.73	-825.51	115.61	45.05	-835.72	-70.56	77%	-73.37	762.35	2.81	Yes	Compustat includes impairment of broadcast licenses.
10	20081231	EW SCRIPPS	832428	1088.98	-993.01	1666.21	215.43	-790.40	0.00	73%	-1023.00	232.60	1023.00	No	Compustat includes impairment of FCC license but misses the impairment of goodwill in SNI. We underestimate due to the requirement on special items.
11	20041231	RAMP CORP	890784	4.31	-7.03	4.85	1.79	0.00	-3.06	71%	-3.36	3.36	0.30	Yes	Compustat misses goodwill impairment loss in discontinued operations (OnRamp).
12	20081231	LIN TV CORP	1166789	852.59	-1033.32	535.42	117.16	-1020.54	-418.26	71%	-420.90	599.64	2.64	Yes	Compustat includes impairment of broadcast licenses.
13	20081231	VIRTUS INVESTMENT PTNRS INC	883237	159.01	-564.06	454.37	4.80	-559.26	-449.57	69%	-449.02	110.24	0.55	Yes	Compustat includes impairment of other intangible assets.

Appendix A: Continued.

No	Fiscal year end	Company name	CIK	Total assets	Negative special items	Goodwill beginning balance	Goodwill ending balance	Compustat impairment	Estimated impairment	|Comp.-Est.| Total assets	Reported (10-K)	|10K-Comp.|	|10K-Est.|	Estimated more accurate	Reason
14	20090331	APPLIED MICRO CIRCUITS CORP	711065	324.61	-231.81	264.13	0.00	-222.97	0.00	69%	-264.13	41.16	264.13	No	Compustat misses goodwill impairment in discontinued operations. We underestimate due to the requirement on special items.
15	20081231	POWERWAVE TECHNOLOGIES INC	1023362	487.90	-336.09	353.19	0.00	-315.89	0.00	65%	-315.89	0.00	315.89	No	We underestimate due to the requirement on special items.
16	20081231	NEXCEN BRANDS INC	1093434	113.90	-142.87	66.44	0.00	-137.88	-66.44	63%	-47.51	90.37	18.93	Yes	Compustat includes impairment of trademarks and other intangibles. Our estimate includes reduction in goodwill due to reclassification to assets held for sale.
17	20090331	QUANTUM CORP	709283	549.37	-334.81	390.78	46.77	-339.00	0.00	62%	-339.00	0.00	339.00	No	We underestimate due to the requirement on special items.
18	20111231	SUPERMEDIA INC	1367396	1633.00	-916.00	1707.00	704.00	-1003.00	0.00	61%	-1003.00	0.00	1003.00	No	We underestimate due to the requirement on special items.
19	20081231	VCG HOLDING CORP	1172852	75.63	-48.10	58.96	2.45	-46.05	0.00	61%	-18.72	27.32	18.72	Yes	Compustat includes impairment of other intangible assets. We underestimate due to the requirement on special items.
20	20081231	COX RADIO INC	1018522	1292.09	-749.26	211.61	190.02	-749.26	-21.59	56%	-22.80	726.46	1.21	Yes	Compustat includes impairment of FCC licenses.
21	20091231	QUALITY DISTRIBUTION INC	922863	279.62	-145.47	173.52	27.02	-148.63	0.00	53%	-146.20	2.43	146.20	No	We underestimate due to the requirement on special items.
22	20081231	COCA COLA ENTERPRISES INC	804055	15589.00	-7759.00	606.00	604.00	-7625.00	-2.00	49%	0.00	7625.00	2.00	Yes	Compustat includes impairment of franchise license.
23	20081231	MPS GROUP INC	924646	795.89	-379.27	678.53	293.28	-379.27	0.00	48%	-376.78	2.49	376.78	No	We underestimate due to the requirement on special items.
24	20080630	VELOCITY EXPRESS CORP	1002902	101.95	-33.87	81.79	35.14	-46.65	0.00	46%	-46.65	0.00	46.65	No	We underestimate due to the requirement on special items.
25	20091231	SOCKET MOBILE INC	944075	11.74	-4.92	9.80	4.43	-5.37	0.00	46%	-5.37	0.00	5.37	No	We underestimate due to the requirement on special items.
26	20080229	CALAMP CORP	730255	143.04	-71.59	90.00	28.52	0.00	-61.48	43%	-71.28	71.28	9.79	Yes	Compustat misses goodwill impairment. We underestimate due to goodwill generated by new acquisition.
27	20081231	FUSION TELECOMMUNICATIONS	1071411	9.46	-4.45	0.97	0.00	-5.01	-0.97	43%	-0.97	4.05	0.00	Yes	Compustat includes impairment of other intangibles.

Appendix A: **Continued**.

No	Fiscal year end	Company name	CIK	Total assets	Negative special items	Goodwill beginning balance	Goodwill ending balance	Compustat impairment	Estimated impairment	|Comp.-Est.| Total assets	Reported (10-K)	|10K-Comp.|	|10K-Est.|	Estimated more accurate	Reason
28	20090228	EMMIS COMMUNICATIONS CORP	783005	739.21	-377.62	81.30	29.44	-362.81	-51.86	42%	-58.30	304.51	6.44	Yes	Compustat includes impairment of FCC licenses. We underestimate due to goodwill generated by new acquisition.
29	20081231	RCM TECHNOLOGIES INC	700841	78.84	-49.41	39.59	6.54	0.00	-33.05	42%	-40.45	40.45	7.40	Yes	Compustat misses goodwill impairment. We underestimate due to goodwill generated by new acquisition.
30	20090228	CALAMP CORP	730255	69.65	-35.74	28.52	0.00	0.00	-28.52	41%	-28.53	28.53	0.01	Yes	Compustat misses goodwill impairment.

The table reports the 30 observations with largest difference between estimated goodwill impairment (E_GDWLIP) and Compustat goodwill impairment (GDWLIP), scaled by total assets (AT), in the post-SFAS 142 period. Estimated goodwill impairment is equal to the reduction of goodwill balance (GDWL) during the year if the firm also reports negative special items (SPI) that are at least as large as the goodwill reduction. All undeflated amounts are in $millions.

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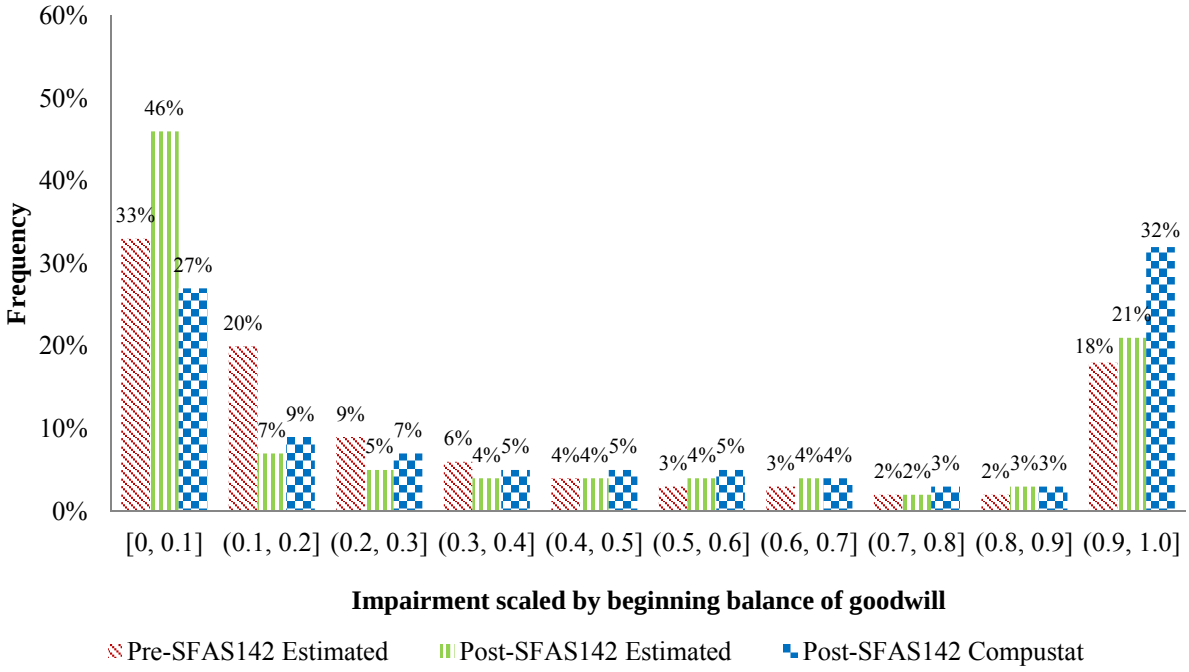
Figure 1: The relative frequency of goodwill impairment magnitudes under the pre-SFAS 142 and post-SFAS 142 reporting regimes.

Panel A: Pre-SFAS 142 estimated goodwill impairments using a 5% threshold, post-SFAS 142 estimated goodwill impairments using a 0% threshold and post-SFAS 142 impairments from Compustat.



Panel B: Pre-SFAS 142 estimated goodwill impairments using a 5% threshold, post-SFAS 142 estimated goodwill impairments using a 5% threshold and post-SFAS 142 impairments from Compustat.

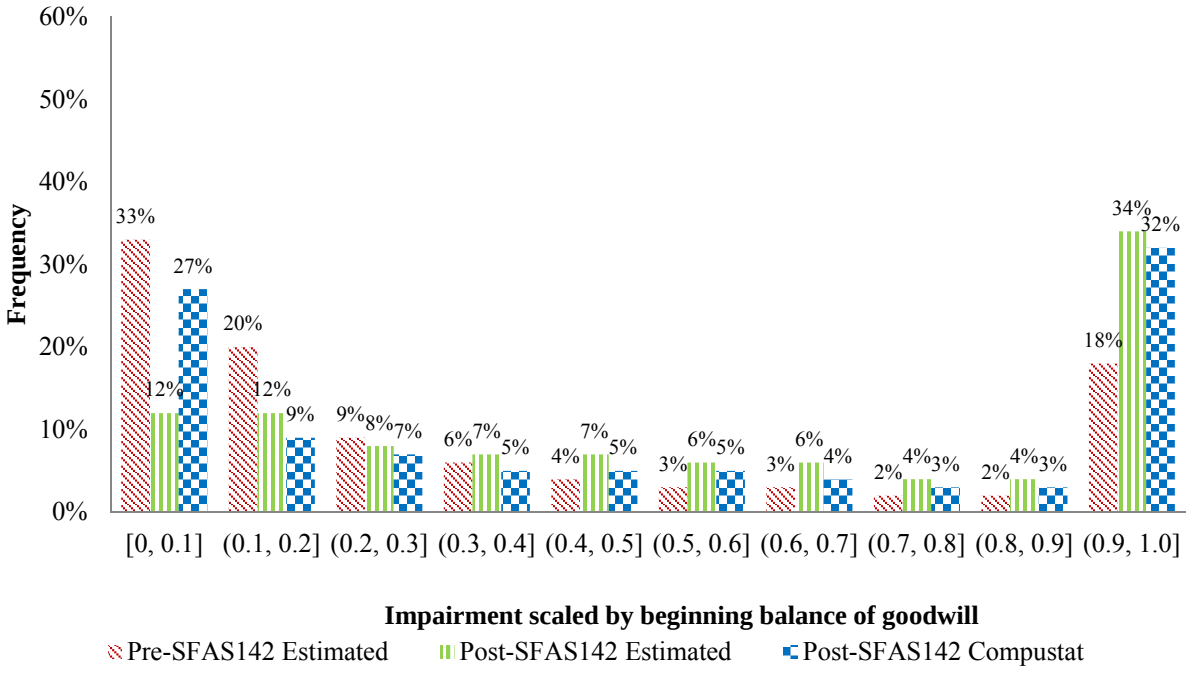
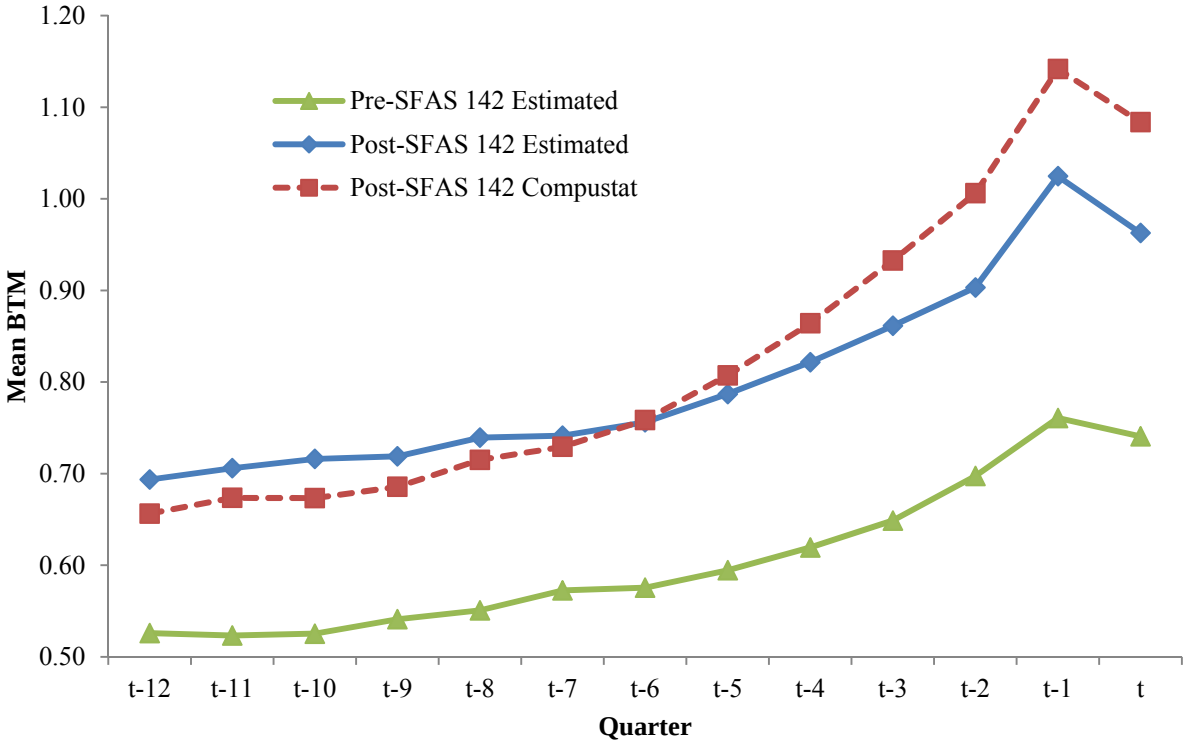


Figure 1: Continued

The sample for these figures is restricted to observations with non-zero goodwill impairments. Panel A definition uses estimated goodwill impairments in the pre-SFAS 142 period computed as the reduction in the goodwill balance (GDWL) during the year if the reduction exceeds a 5% threshold relative to the beginning balance of goodwill and the firm also reports negative special items (SPI) that are at least as large as the reduction in goodwill. Estimated impairments in the post-SFAS 142 period are computed as the reduction of GDWL during the year if the firm also reports negative special items (SPI) that are at least as large as the goodwill reduction. This definition uses a 0% threshold. Compustat goodwill impairment loss is obtained directly from Compustat (GDWLIP). The Panel B computation of estimated impairment in the post-SFAS 142 period is the same as in the pre-SFAS 142 period, employing the same 5% threshold. The figure plots the distribution of goodwill impairments divided by the beginning of year goodwill balance ($GDWL_{t-1}$). The ratio is winsorized at one. Relative frequencies are reported at intervals of 0.1.

Figure 2: Market and financial indicators of untimely impairments.

Panel A: Mean BTM of the impairment sample in the pre- and post-SFAS 142 periods.



Panel B: Mean BTMG1 of the impairment sample in the pre- and post-SFAS 142 periods.

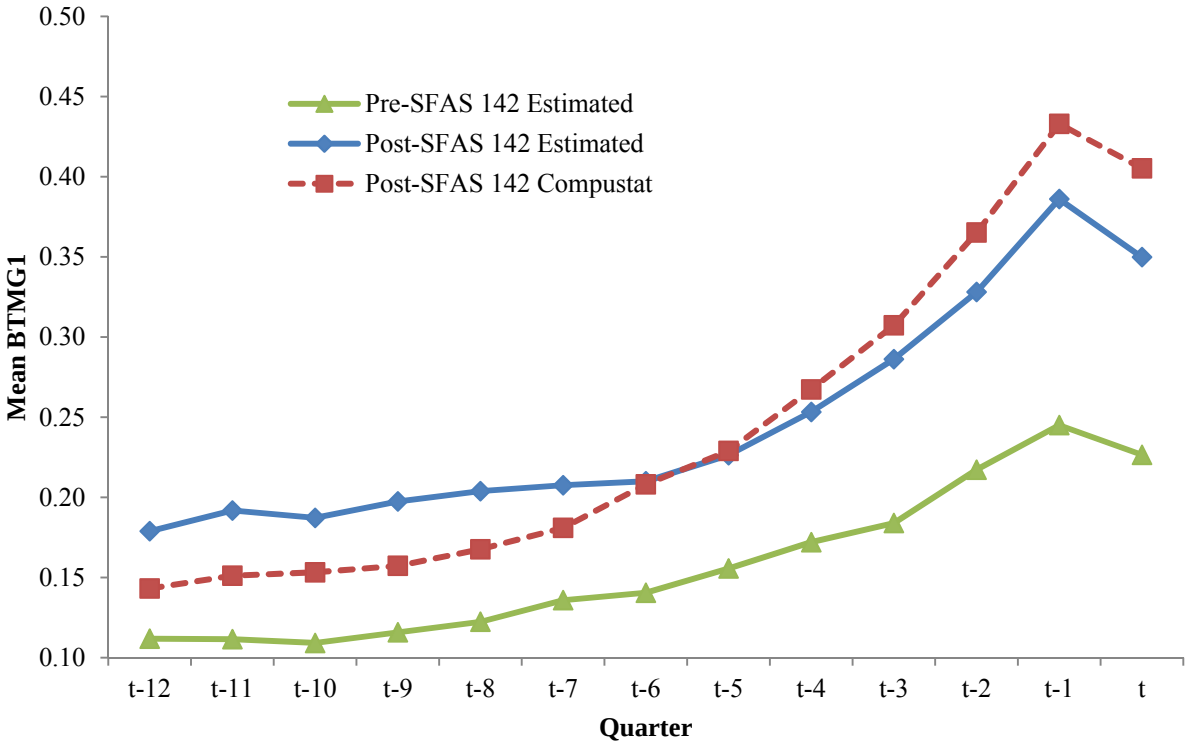
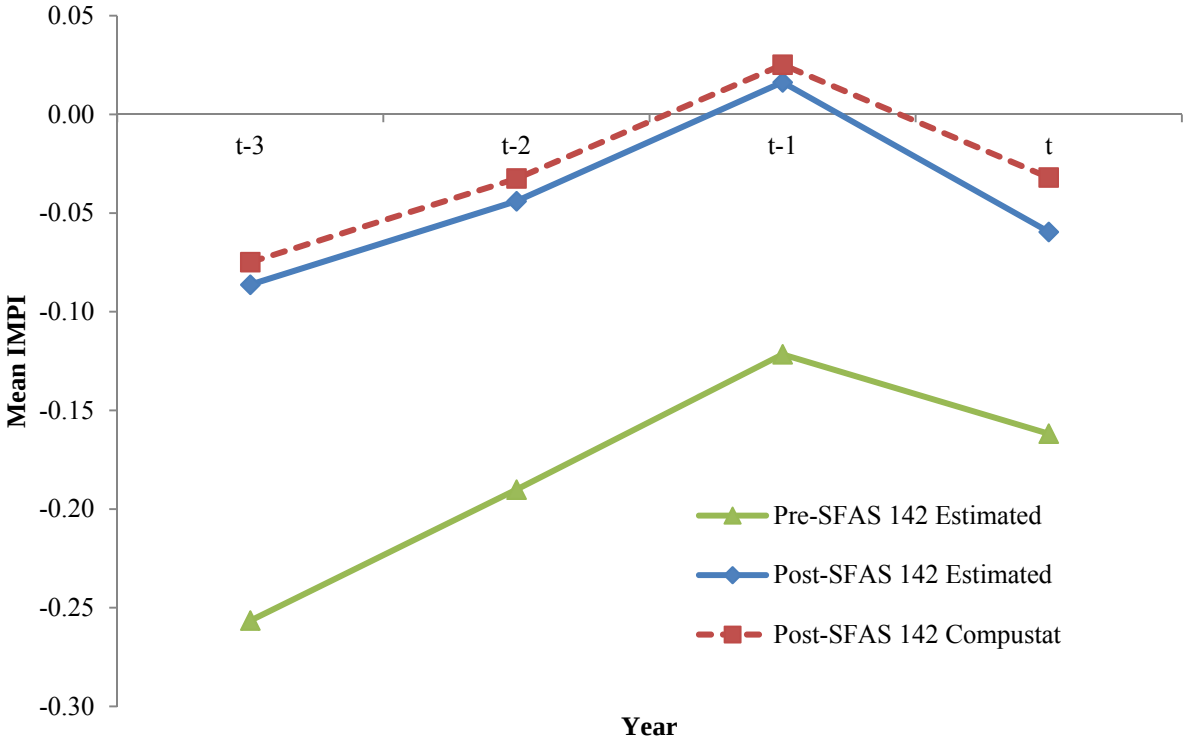


Figure 2: Continued

Panel C: Mean IMPI of the impairment sample in the pre- and post-SFAS 142 periods.

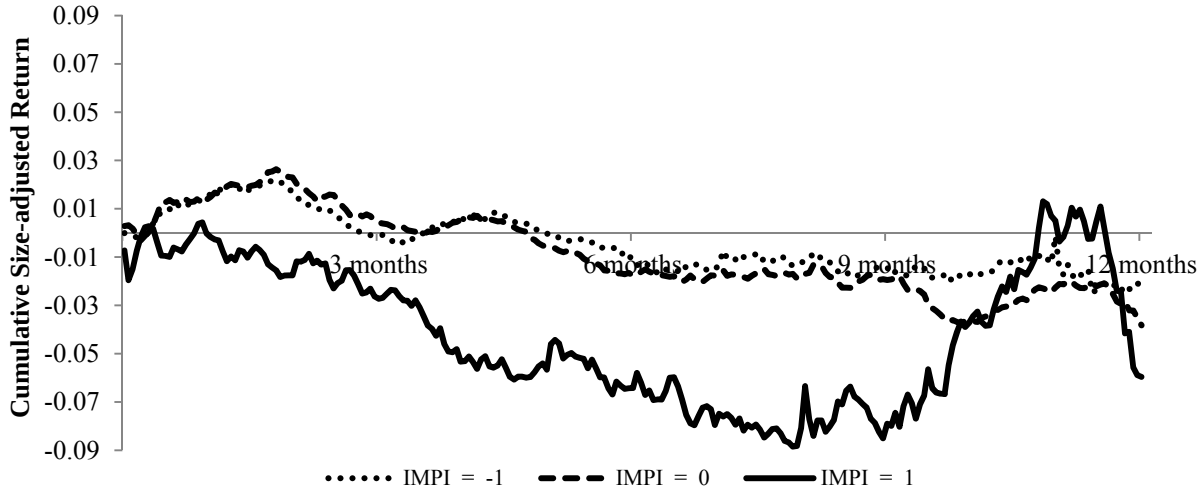


The sample for this figure is restricted to observations with non-zero estimated or Compustat goodwill impairment. Panel A (Panel B) plots the average quarterly BTM (BTMG1) over the 12 quarters prior to quarter t when the firms report estimated or Compustat goodwill impairment. Estimated goodwill impairment in the pre-SFAS 142 period is calculated as the reduction of other assets (AOQ) during the quarter if the reduction is more than 1.25% of the beginning balance of AOQ and the firm also reports negative special item (SPIQ) during the quarter that is at least as large as the reduction. Estimated impairment is the post-SFAS 142 period is defined in the same way but without the 1.25% requirement for the reduction in other assets. Compustat goodwill impairment is obtained directly from Compustat (GDWLIPQ). BTM is book value of equity (CEQQ) divided by market value of equity (PRCCQ*CSHOQ). BTMG1 is an indicator variable that is equal to one if BTM is greater than one, and zero otherwise.

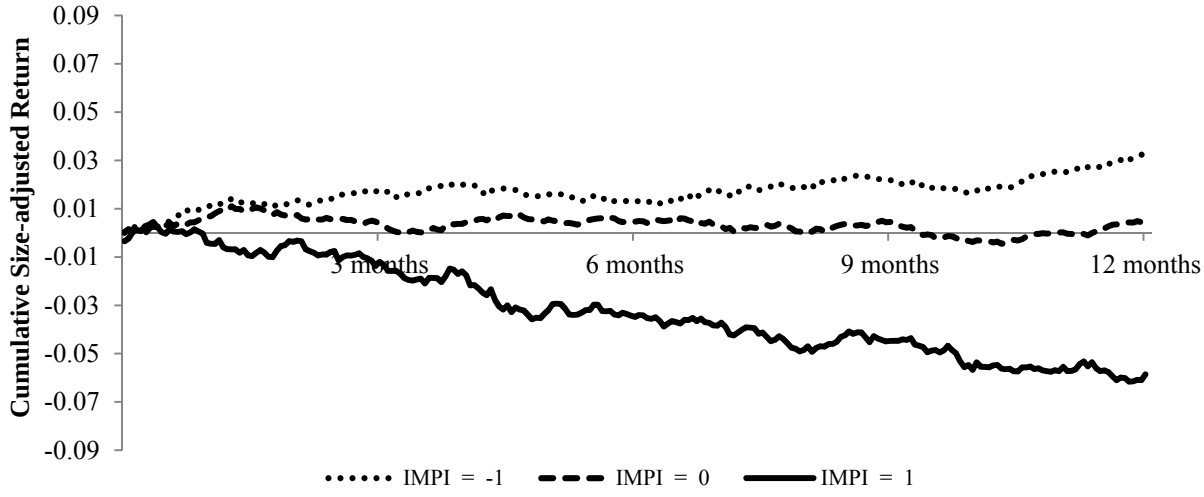
Panel C plots the average IMPI over the three years prior to year t when the firms report estimated or Compustat goodwill impairment. IMPI is equal to one for observations with GTA>10% *and* ROA<0, minus one for observations with GTA<5% *and* ROA>5%, and zero otherwise. GTA is goodwill (GDWL) divided by total assets (AT). ROA is operating income after depreciation (OIADP) divided by average total assets (AT). Estimated goodwill impairment in the pre-SFAS 142 period is calculated as the reduction of GDWL during the year if the reduction is more than 5% of the beginning balance of goodwill and the firm also reports negative special item (SPI) that is at least as large as the goodwill reduction. Estimated impairment in the post-SFAS 142 period is defined in the same way but without the 5% requirement for the reduction in goodwill balance. Compustat goodwill impairment is obtained directly from Compustat (GDWLIP).

Figure 3: Cumulative abnormal returns for portfolios formed on the financial indicator of goodwill impairments (IMPI).

Panel A: Pre-SFAS 142 period



Panel B: Post-SFAS 142 period



The figure plots cumulative size and book-to-market adjusted returns ($BHAR_t$) of portfolios formed on $IMPI_{t-1}$ over the 12-month period starting three months after the end of year t-1. $IMPI_{t-1}$ is equal to one for observations with GTA_{t-1}>10% *and* ROA_{t-1}<0, minus one for observations with GTA_{t-1}<5% *and* ROA_{t-1}>5%, and zero otherwise. GTA_{t-1} is goodwill (GDWL) divided by total assets (AT) at the end of year t-1. ROA_{t-1} is operating income after depreciation (OIADP) in year t-1 divided by average total assets (AT). To adjust stock returns for size and book-to-market ratio, observations in the Compustat annual database with CRSP share code of 10 or 11 are sorted into ten groups based on size (market capitalization) on June 30 each year. Each of the ten size-based portfolios is further sorted into five additional portfolios based on the BTM ratio measured using the end-of-June market value and the book value of equity (CEQ) from the most recent fiscal year. For companies with fiscal year ending in April to June, we use the CEQ from the prior year. This procedure yields 50 portfolios. We then compute the equal weighted portfolio returns for July through the subsequent June for each of the 50 portfolios. $BHAR_t$ for each firm is measured as the buy-hold return over the 12-month period starting three month after the end of fiscal year t-1 in excess of the buy-hold return on its size and book-to-market matched portfolio over the same period.

Table 1: Time series averages of goodwill balances and goodwill impairments under the pre-SFAS 142 and post-SFAS 142 regimes.

		Firms with Positive Beginning Goodwill		Firms with Estimated Goodwill Impairment			Firms with Compustat Goodwill Impairment		
Regime	Year	N	GTA_{t-1}	n	n/N	E_GDWLIP_t/GW_{t-1}	n	n/N	$GDWLIP_t/GW_{t-1}$
Pre-SFAS 142, estimated impairments using a 5% threshold	1996	1,682	0.113	185	11.0%	0.352			
	1997	1,838	0.113	195	10.6%	0.393			
	1998	1,930	0.124	177	9.2%	0.382			
	1999	1,819	0.133	172	9.5%	0.300			
	2000	1,780	0.132	192	10.8%	0.365			
	Subtotal	***9,049***	***0.123***	***921***	***10.2%***	***0.360***			
Transition Period: 2001 to 2003									
Post-SFAS 142, estimated impairments using a 0% threshold	2004	2,530	0.140	205	8.1%	0.244	181	7.2%	0.435
	2005	2,607	0.143	242	9.3%	0.252	214	8.2%	0.441
	2006	2,600	0.148	218	8.4%	0.225	224	8.6%	0.342
	2007	2,558	0.149	209	8.2%	0.359	240	9.4%	0.481
	2008	2,478	0.152	589	23.8%	0.512	648	26.2%	0.612
	2009	2,284	0.149	419	18.3%	0.502	525	23.0%	0.557
	2010	2,123	0.146	236	11.1%	0.190	216	10.2%	0.343
	2011	2,110	0.145	279	13.2%	0.236	252	11.9%	0.366
	Subtotal	***19,290***	***0.146***	***2,397***	***12.4%***	***0.358***	***2,500***	***13.0%***	***0.488***
	Correlations between E_GDWLIP_t/GW_{t-1} and $GDWLIP_t/GW_{t-1}$: Pearson 0.818, Spearman 0.587								
Post-SFAS 142, estimated impairments using a 5% threshold	2004	2,530	0.140	103	4.1%	0.473	181	7.2%	0.435
	2005	2,607	0.143	123	4.7%	0.482	214	8.2%	0.441
	2006	2,600	0.148	113	4.3%	0.420	224	8.6%	0.342
	2007	2,558	0.149	130	5.1%	0.569	240	9.4%	0.481
	2008	2,478	0.152	463	18.7%	0.647	648	26.2%	0.612
	2009	2,284	0.149	318	13.9%	0.657	525	23.0%	0.557
	2010	2,123	0.146	94	4.4%	0.458	216	10.2%	0.343
	2011	2,110	0.145	122	5.8%	0.524	252	11.9%	0.366
	Subtotal	***19,290***	***0.146***	***1,466***	***7.6%***	***0.576***	***2,500***	***13.0%***	***0.488***
	Correlations between E_GDWLIP_t/GW_{t-1} and $GDWLIP_t/GW_{t-1}$: Pearson 0.818, Spearman 0.677								

The sample is restricted to firms with positive beginning goodwill balance ($GDWL_{t-1}$). The estimated goodwill impairment (E_GDWLIP) in the pre-SFAS 142 period is equal to the reduction of goodwill (GDWL) during the year if the reduction exceeds a 5% threshold relative to the beginning balance of goodwill and the firm also reports negative special items (SPI) that are at least as large as the reduction in goodwill. The first definition of E_GDWLIP in the post-SFAS 142 period is equal to the reduction of GDWL during the year if the firm also reports negative SPI that are at least as large as the goodwill reduction. This definition uses a 0% threshold. The next definition of E_GDWLIP in the post-SFAS 142 period is the same as in the pre-SFAS 142 period, employing the same 5% threshold. The Compustat goodwill impairment is obtained directly from Compustat (GDWLIP). GTA_{t-1} is GDWL divided by total assets (AT) at the end of year t-1. E_GDWLIP_t/GW_{t-1} is the estimated goodwill impairment in year t scaled by goodwill balance at the end of year t-1 for firms with a non-zero estimated impairment. $GDWLIP_t/GW_{t-1}$ is the Compustat goodwill impairment in year t scaled by goodwill balance at the end of year t-1 for firms with a non-zero Compustat goodwill impairment. Year 2001 to 2003 are defined as transition period to eliminate the effects of early and initial adoption of SFAS 142.

Table 2: Descriptive statistics for market and financial indicators of goodwill impairment in period t-1 for firms with (IMP) and without (No-IMP) impairments in period t.

Panel A: Summary statistics

Variable	Pre-SFAS 142 Estimated			Post-SFAS 142 Estimated			(3) - (1)	Post-SFAS 142 Compustat			(5) - (3)	(5) - (1)
	IMP (1) N=921	No-IMP (2) N=8,128	(1) - (2)	IMP (3) N=2,397	No-IMP (4) N=16,893	(3) - (4)		IMP (5) N=2,500	No-IMP (6) N=16,790	(5) - (6)		
GTA_{t-1}	0.098	0.126	-0.028*** (-6.50)	0.172	0.143	0.029*** (9.14)	0.074*** (15.89)	0.172	0.143	0.029*** (9.09)	0.000 (0.17)	0.074*** (15.73)
ROA_{t-1}	0.024	0.077	-0.053*** (-10.08)	0.046	0.067	-0.021*** (-7.66)	0.022*** (3.87)	0.040	0.068	-0.028*** (-10.21)	-0.006 (-1.63)	0.016*** (2.83)
$IMPI_{t-1}$	-0.122	-0.139	0.017 (1.01)	0.016	-0.083	0.099*** (9.92)	0.138*** (7.20)	0.025	-0.085	0.110*** (11.20)	0.009 (0.68)	0.147*** (7.69)
BTM_{t-1}	0.706	0.611	0.095*** (5.71)	0.792	0.584	0.208*** (18.33)	0.086*** (3.55)	0.872	0.571	0.301*** (27.29)	0.080*** (3.77)	0.166*** (5.89)
$BTMG1_{t-1}$	0.206	0.149	0.057*** (4.56)	0.242	0.110	0.132*** (18.30)	0.036** (2.21)	0.280	0.103	0.177*** (25.25)	0.038*** (3.08)	0.074*** (4.38)
RET_{t-1}	0.071	0.220	-0.149*** (-4.74)	0.016	0.238	-0.222*** (-13.43)	-0.055* (-1.75)	-0.056	0.250	-0.306*** (-20.29)	-0.072*** (-3.50)	-0.127*** (-4.33)

Table 2: Continued.

Panel B: Pearson (above diagonal) and Spearman (below diagonal) correlations

Pre-SFAS 142 Estimated	E_IMPDUM_t	GTA_{t-1}	ROA_{t-1}	$IMPI_{t-1}$	BTM_{t-1}	$BTMG1_{t-1}$	RET_{t-1}
E_IMPDUM_t		-0.068***	-0.105***	0.011	0.060***	0.048***	-0.050***
GTA_{t-1}	-0.063***		0.009	0.448***	-0.034***	-0.020*	-0.031***
ROA_{t-1}	-0.106***	0.128***		-0.425***	-0.132***	-0.127***	0.013
$IMPI_{t-1}$	0.007	0.543***	-0.432***		0.081***	0.084***	-0.039***
BTM_{t-1}	0.027***	-0.097***	-0.342***	0.039***		0.778***	-0.233***
$BTMG1_{t-1}$	0.048***	-0.031***	-0.278***	0.084***	0.627***		-0.153***
RET_{t-1}	-0.105***	-0.068***	0.196***	-0.136***	-0.326***	-0.235***	
Post-SFAS 142 Estimated	E_IMPDUM_t	GTA_{t-1}	ROA_{t-1}	$IMPI_{t-1}$	BTM_{t-1}	$BTMG1_{t-1}$	RET_{t-1}
E_IMPDUM_t		0.066***	-0.053***	0.071***	0.131***	0.131***	-0.092***
GTA_{t-1}	0.080***		0.057***	0.393***	-0.086***	-0.076***	-0.011
ROA_{t-1}	-0.070***	0.207***		-0.431***	-0.175***	-0.138***	0.040***
$IMPI_{t-1}$	0.071***	0.467***	-0.471***		0.082***	0.076***	-0.049***
BTM_{t-1}	0.134***	-0.132***	-0.408***	0.088***		0.688***	-0.171***
$BTMG1_{t-1}$	0.131***	-0.094***	-0.259***	0.077***	0.575***		-0.121***
RET_{t-1}	-0.157***	0.002	0.150***	-0.096***	-0.259***	-0.204***	
Post-SFAS 142 Compustat	$IMPDUM_t$	GTA_{t-1}	ROA_{t-1}	$IMPI_{t-1}$	BTM_{t-1}	$BTMG1_{t-1}$	RET_{t-1}
$IMPDUM_t$		0.065***	-0.071***	0.080***	0.192***	0.179***	-0.129***
GTA_{t-1}	0.070***		0.057***	0.393***	-0.086***	-0.076***	-0.011
ROA_{t-1}	-0.093***	0.207***		-0.431***	-0.175***	-0.138***	0.040***
$IMPI_{t-1}$	0.080***	0.467***	-0.471***		0.082***	0.076***	-0.049***
BTM_{t-1}	0.192***	-0.132***	-0.408***	0.088***		0.688***	-0.171***
$BTMG1_{t-1}$	0.179***	-0.094***	-0.259***	0.077***	0.575***		-0.121***
RET_{t-1}	-0.209***	0.002	0.150***	-0.096***	-0.259***	-0.204***	

IMP (No-IMP) refers to observations with (without) estimated or Compustat goodwill impairment over the next 12 months. The estimated goodwill impairment (E_GDWLIP) in the pre-SFAS 142 period is equal to the reduction of goodwill (GDWL) during the year if the reduction exceeds a 5% threshold relative to the beginning balance of goodwill and the firm also reports negative special items (SPI) that are at least as large as the reduction in goodwill. E_GDWLIP in the post-SFAS 142 period is equal to the reduction of GDWL during the year if the firm also reports negative SPI that are at least as large as the goodwill reduction. This definition uses a 0% threshold. The Compustat goodwill impairment is obtained directly from Compustat (GDWLIP). E_IMPDUM_t ($IMPDUM_t$) is a dummy variable that is equal to one if firms have non-zero E_GDWLIP (GDWLIP) in year t, and zero otherwise. GTA_{t-1} is GDWL divided by total assets (AT) at the end of year t-1. ROA_{t-1} is operating income after depreciation (OIADP) in year t-1 divided by average total assets (AT). $IMPI_{t-1}$ is equal to one for observations with GTA_{t-1}>10% *and* ROA_{t-1}<0, minus one for observations with GTA_{t-1}<5% *and* ROA_{t-1}>5%, and zero otherwise. BTM_{t-1} is book value of equity (CEQ) divided by market value of equity (PRCC_f*CSHO) at the end of year t-1. $BTMG1_{t-1}$ is an indicator variable that is equal to one if BTM_{t-1} is greater than one, and zero otherwise. RET_{t-1} is cumulative stock return over the 12-month period starting in the fourth month of year t-1. Numbers in the parentheses are t-statistic for difference in mean. ***, ** and * denote significance at 0.01, 0.05 and 0.10 level using two-tailed test, respectively.

Table 3: Predicting goodwill impairments in period t using financial and market indicators from period t-1.

$$E\_IMPDUM_t = \alpha + \beta_1 IMPI_{t-1} + \beta_2 BTMG1_{t-1} + \varepsilon_t$$

or

$$IMPDUM_t = \alpha + \beta_1 IMPI_{t-1} + \beta_2 BTMG1_{t-1} + \varepsilon_t$$

Panel A: Conditional logit regressions (firm-level clustering)

Variables	Predicted Sign	Dependent variable: E_IMPDUM_t ($IMPDUM_t$)					
		Pre-SFAS 142 E_IMPDUM_t (1)	Post-SFAS 142 E_IMPDUM_t (2)	(2)–(1)	Post-SFAS 142 $IMPDUM_t$ (3)	(3)–(1)	(3)–(2)
$IMPI_{t-1}$	+	0.162	0.604***	0.442***	0.494***	0.332**	-0.110
		(1.24)	(6.85)	(2.82)	(5.61)	(2.12)	(-0.88)
$BTMG1_{t-1}$	+	0.509***	1.114***	0.605***	1.207***	0.698***	0.093
		(3.31)	(13.94)	(3.49)	(15.70)	(4.06)	(0.84)
Pseudo R^2		0.2%	1.3%	-	1.5%	-	-

Panel B: Marginal effects analysis of the goodwill indicators

	Pre-SFAS 142 Estimated		Post-SFAS 142 Estimated		Post-SFAS 142 Compustat	
	$IMPI_{t-1}$	$BTMG1_{t-1}$	$IMPI_{t-1}$	$BTMG1_{t-1}$	$IMPI_{t-1}$	$BTMG1_{t-1}$
Mean	-0.137	0.155	-0.071	0.126	-0.071	0.126
IPROB at 0	0.520	0.494	0.535	0.489	0.538	0.492
IPROB at 1	0.560	0.619	0.678	0.745	0.647	0.764
Marginal change	**0.040**	**0.125**	**0.143**	**0.256**	**0.109**	**0.272**

The estimated goodwill impairment (E_GDWLIP) in the pre-SFAS 142 period is equal to the reduction of goodwill (GDWL) during the year if the reduction exceeds a 5% threshold relative to the beginning balance of goodwill and the firm also reports negative special items (SPI) that are at least as large as the reduction in goodwill. E_GDWLIP in the post-SFAS 142 period is equal to the reduction of GDWL during the year if the firm also reports negative SPI that are at least as large as the goodwill reduction. This definition uses a 0% threshold. The Compustat goodwill impairment is obtained directly from Compustat (GDWLIP). E_IMPDUM_t ($IMPDUM_t$) is a dummy variable that is equal to one if firms have non-zero E_GDWLIP (GDWLIP) in year t, and zero otherwise. GTA_{t-1} is GDWL divided by total assets (AT) at the end of year t-1. ROA_{t-1} is operating income after depreciation (OIADP) in year t-1 divided by average total assets (AT). $IMPI_{t-1}$ is equal to one for observations with GTA_{t-1}>10% *and* ROA_{t-1}<0, minus one for observations with GTA_{t-1}<5% *and* ROA_{t-1}>5%, and zero otherwise. BTM_{t-1} is book value of equity (CEQ) divided by market value of equity (PRCC_f*CSHO) at the end of year t-1. $BTMG1_{t-1}$ is an indicator variable that is equal to one if BTM_{t-1} is greater than one, and zero otherwise. Panel A reports conditional logit regressions of Equation (1) estimated at firm clusters. Numbers in the parentheses are z-statistics. ***, ** and * denote significance at 0.01, 0.05 and 0.10 level using two-tailed test, respectively. Panel B reports the predicted goodwill impairment probability (IPROB) when one impairment indicator is at zero or one, while the other indicator is at its mean value. $IPROB_{t-1}$ is estimated each year using the observations in all prior years within the same reporting regime.

Table 4: The predictive ability of goodwill impairment indicators in year t-1 ($IPROB_{t-1}$) for impairments in year t (E_IMPDUM_t or $IMPDUM_t$).

Portfolio Ranking	Pre-SFAS 142 Estimated		Post-SFAS 142 Estimated		Post-SFAS 142 Compustat	
on $IPROB_{t-1}$	$IPROB_{t-1}$	E_IMPDUM_t	$IPROB_{t-1}$	E_IMPDUM_t	$IPROB_{t-1}$	$IMPDUM_t$
1	0.099	0.126	0.052	0.075	0.048	0.076
2	0.102	0.083	0.085	0.108	0.084	0.106
3	0.106	0.119	0.128	0.209	0.140	0.162
4	0.127	0.129	0.138	0.180	0.152	0.201
5	0.130	0.135	0.209	0.240	0.253	0.294
5-1	**0.031*****	**0.009**	**0.157*****	**0.165*****	**0.205*****	**0.218*****
	(125.07)	**(0.59)**	**(169.16)**	**(16.40)**	**(180.67)**	**(20.68)**

The estimated goodwill impairment (E_GDWLIP) in the pre-SFAS 142 period is equal to the reduction of goodwill (GDWL) during the year if the reduction exceeds a 5% threshold relative to the beginning balance of goodwill and the firm also reports negative special items (SPI) that are at least as large as the reduction in goodwill. E_GDWLIP in the post-SFAS 142 period is equal to the reduction of GDWL during the year if the firm also reports negative SPI that are at least as large as the goodwill reduction. This definition uses a 0% threshold. The Compustat goodwill impairment is obtained directly from Compustat (GDWLIP). E_IMPDUM_t ($IMPDUM_t$) is a dummy variable that is equal to one if firms have non-zero E_GDWLIP (GDWLIP) in year t, and zero otherwise. $IPROB_{t-1}$ is the predicted probability of goodwill impairment within the next 12 months generated from Equation (1). $IPROB_{t-1}$ is estimated each year using the observations in all prior years within the same reporting regime. The observations are sorted into five groups based on $IPROB_{t-1}$ each year. Because $IPROB_{t-1}$ can only take on six different values each year, we combine the observations with the highest two $IPROB_{t-1}$ values to form group 5. Numbers in the parentheses are t-statistic for difference in mean. ***, ** and * denote significance at 0.01, 0.05 and 0.10 level using two-tailed test, respectively.

Table 5: The predictive ability of the financial indicator of goodwill impairments in year t-1 ($IMPI_{t-1}$) for stock returns in year t ($BHAR_t$).

Panel A: Subsequent annual buy and hold abnormal stock returns ($BHAR_t$) for portfolios of observations formed on the financial indicator of goodwill impairments ($IMPI_{t-1}$)

Portfolio formed on $IMPI_{t-1}$	Pre-SFAS 142			Post-SFAS 142			
	N	E_IMPDUM_t	$BHAR_t$	N	E_IMPDUM_t	$IMPDUM_t$	$BHAR_t$
$IMPI_{t-1}$=-1	1,861	0.114***	-0.028	2,796	0.084***	0.085***	0.034**
		(19.53)	(-1.27)		(6.63)	(5.13)	(2.54)
$IMPI_{t-1}$=0	6,571	0.092***	-0.046	15,069	0.125***	0.130***	-0.006
		(18.62)	(-1.56)		(5.80)	(4.80)	(-0.76)
$IMPI_{t-1}$=1	617	0.164***	-0.061	1,425	0.192***	0.211***	-0.075***
		(19.92)	(-0.44)		(5.60)	(5.12)	(-4.85)
$IMPI_{t-1}$(-1)-$IMPI_{t-1}$(1)		**-0.050****	**0.033**		**-0.108*****	**-0.126*****	**0.109*****
		(-4.35)	**(0.21)**		**(-4.31)**	**(-4.49)**	**(4.21)**

Panel B: Cross-sectional regressions of future buy-and-hold abnormal returns (BHAR) on the financial indicator of goodwill impairments (IMPI) and controls for other common return predictors.

$$BHAR_t = \alpha + \beta IMPI_{t-1} + \sum_{i=1}^{I} \gamma_i Control_{i,t-1} + \varepsilon_t$$

	Pre-SFAS 142	Post-SFAS 142
Intercept	0.156	-0.067
	(1.22)	(-0.65)
$IMPI_{t-1}$	**-0.014**	**-0.042****
	(-0.44)	**(-2.81)**
BTM_{t-1}	-0.048	0.170*
	(-0.56)	(2.14)
$SIZE_{t-1}$	-0.019	-0.002
	(-1.13)	(-0.16)
$ACCRUAL_{t-1}$	-0.327***	-0.369**
	(-5.35)	(-2.57)
RET_{t-1}	-0.034	-0.020
	(-2.07)	(-0.78)
ROA_{t-1}	-0.175	0.215*
	(-0.37)	(2.31)
EXF_{t-1}	-0.084*	-0.018
	(-2.36)	(-0.30)
AQC_{t-1}	-0.031	0.253
	(-0.11)	(1.14)
Adj. R^2	0.9%	3.3%

Table 5: Continued.

Panel C: Carhart four-factor regressions for portfolios formed on the financial indicator of goodwill impairments (IMPI). Regressions use equally weighted monthly stock returns as the dependent variable.

$$(r_i - r_f) = a_i + b_i(r_m - r_f) + s_i SMB + h_i HML + u_i UMD + \varepsilon_i$$

Pre-SFAS 142 period						
Portfolio	Intercept a	r_m-r_f b	SMB s	HML h	UMD u	Adj. R^2
$IMPI_{t-1}$=-1	0.000 (-0.11)	1.058*** (14.96)	0.694*** (11.13)	0.566*** (6.66)	-0.272*** (-7.33)	89.0%
$IMPI_{t-1}$=1	0.009 (0.67)	0.673*** (3.06)	1.132*** (4.66)	-0.994*** (-2.86)	-0.764** (-2.41)	69.2%
$IMPI_{t-1}$(-1)-$IMPI_{t-1}$(1)	-0.009 (-0.77)	0.385** (2.02)	-0.439** (-2.01)	1.559*** (5.06)	0.491* (1.68)	57.3%
Post-SFAS 142 period						
Portfolio	Intercept a	r_m-r_f b	SMB s	HML h	UMD u	Adj. R^2
$IMPI_{t-1}$=-1	0.004*** (3.10)	1.033*** (26.87)	0.684*** (10.60)	0.048 (0.77)	-0.132*** (-3.52)	96.2%
$IMPI_{t-1}$=1	-0.004** (-2.28)	1.122*** (14.80)	1.111*** (7.43)	-0.234 (-0.91)	-0.152** (-2.01)	83.5%
$IMPI_{t-1}$(-1)-$IMPI_{t-1}$(1)	0.008** (2.58)	-0.089 (-1.09)	-0.427*** (-2.84)	0.282 (1.18)	0.021 (0.24)	11.6%

Table 5: Continued.

The estimated goodwill impairment (E_GDWLIP) in the pre-SFAS 142 period is equal to the reduction of goodwill (GDWL) during the year if the reduction exceeds a 5% threshold relative to the beginning balance of goodwill and the firm also reports negative special items (SPI) that are at least as large as the reduction in goodwill. E_GDWLIP in the post-SFAS 142 period is equal to the reduction of GDWL during the year if the firm also reports negative SPI that are at least as large as the goodwill reduction. This definition uses a 0% threshold. The Compustat goodwill impairment is obtained directly from Compustat (GDWLIP). E_IMPDUM_t ($IMPDUM_t$) is a dummy variable that is equal to one if firms have non-zero E_GDWLIP (GDWLIP) in year t, and zero otherwise. $IMPI_{t-1}$ is equal to one for observations with $GTA_{t-1}>10\%$ *and* $ROA_{t-1}<0$, minus one for observations with $GTA_{t-1}<5\%$ *and* $ROA_{t-1}>5\%$, and zero otherwise. GTA_{t-1} is GDWL divided by total assets (AT) at the end of year t-1. ROA_{t-1} is operating income after depreciation (OIADP) in year t-1 divided by average total assets (AT). To adjust stock returns for size and book-to-market ratio, observations in the Compustat annual database with CRSP share code of 10 or 11 are sorted into ten groups based on size (market capitalization) on June 30 each year. Each of the ten size-based portfolios is further sorted into five additional portfolios based on the BTM ratio measured using the end-of-June market value and the book value of equity (CEQ) from the most recent fiscal year. For companies with fiscal year ending in April to June, we use the CEQ from the prior year. This procedure yields 50 portfolios. We then compute the equal weighted monthly portfolio returns for July through the subsequent June for each of the 50 portfolios. $BHAR_t$ for each firm is measured as the buy-hold return over the 12-month period starting three month after the end of fiscal year t-1 in excess of the buy-hold return on its size and book-to-market matched portfolio over the same period. In Panel A, the reported means are calculated over the pooled sample. In Panel B, BTM_{t-1} is book value of equity (CEQ) divided by market value of equity (PRCC_f*CSHO). $SIZE_{t-1}$ is the logarithm of market value of equity (PRCC_f*CSHO). $ACCRUAL_{t-1}$ is calculated following Richardson et al. (2005), i.e., (ΔWC+ΔNCO)/AT, where WC is (ACT-CHE)-(LCT-DLC) and NCO is (AT-ACT-IVAO)-(LT-LCT-DLTT). RET_{t-1} is buy-hold stock return over the 12-month period beginning in the fourth month of year t-1. EXF_{t-1} is net equity issuance measured following Sloan and You (2015), i.e., $[MV_{t-1}-MV_{t-2}*(1+rx_{t-1})]/MV_{t-2}$, where MV is market value of equity and rx is the cumulative ex-dividend buy-hold stock return. AQC_{t-1} is cash used for acquisitions divided by average total assets (AT). The t-statistics (in parentheses) in Panels A and B are adjusted for two-way cluster-robust standard errors (clustered by firm and year), following Petersen (2008) and Gow et al. (2010). In Panel C, the sample is restricted to firms with December fiscal year-ends. Portfolios based on $IMPI_{t-1}$ are formed for the 12 months starting three months after the end of fiscal year t-1. r_f is the monthly return on one-month T-bill. r_m is the value-weighted return on the NYSE/AMEX/NASDAQ market index. SMB is the Fama-French (1993) small firm factor. HML is the Fama-French book-to-market factor. UMD is the Carhart (1997) momentum factor. The numbers in parentheses are White (1980) heteroskedasticity corrected t-statistics. ***, ** and * denote significance at 0.01, 0.05 and 0.10 level using two-tailed test, respectively.

Table 6: The relation between the financial indicator of goodwill impairments ($IMPI_{t-1}$) and future stock returns ($BHAR_t$) for subsamples partitioned by the number of segments.

Panel A: Pre-SFAS 142 period

Portfolio formed on $IMPI_{t-1}$	Single Segment		Multiple Segments		Single-Multiple	
	E_IMPDUM_t	$BHAR_t$	E_IMPDUM_t	$BHAR_t$	E_IMPDUM_t	$BHAR_t$
$IMPI_{t-1}$=-1	0.123***	-0.021	0.103***	-0.041**	0.020	0.020
	(16.23)	(-0.83)	(10.99)	(-2.96)	(1.82)	(1.08)
$IMPI_{t-1}$=0	0.111***	-0.043**	0.080***	-0.066*	0.031**	0.023
	(16.17)	(-2.93)	(20.95)	(-2.54)	(4.21)	(1.37)
$IMPI_{t-1}$=1	0.172***	-0.128	0.154***	0.053	0.018	-0.181
	(16.76)	(-1.59)	(10.14)	(0.20)	(1.27)	(-0.81)
$IMPI_{t-1}$(-1)-$IMPI_{t-1}$(1)	**-0.049****	**0.107**	**-0.051****	**-0.094**	**0.002**	**0.201**
	(-3.86)	**(1.01)**	**(-3.02)**	**(-0.34)**	**(0.15)**	**(0.91)**

Panel B: Post-SFAS 142 period

Portfolio formed on $IMPI_{t-1}$	Single Segment		Multiple Segments		Single-Multiple	
	E_IMPDUM_t	$BHAR_t$	E_IMPDUM_t	$BHAR_t$	E_IMPDUM_t	$BHAR_t$
$IMPI_{t-1}$=-1	0.093***	0.045*	0.073***	0.026	0.020	0.019
	(7.68)	(2.07)	(4.38)	(1.68)	(1.87)	(0.79)
$IMPI_{t-1}$=0	0.135***	0.025	0.129***	0.003	0.006	0.022
	(6.54)	(1.83)	(6.18)	(0.31)	(1.00)	(1.72)
$IMPI_{t-1}$=1	0.227***	-0.099**	0.174***	-0.062**	0.053**	-0.037
	(6.14)	(-2.44)	(4.89)	(-2.42)	(2.67)	(-0.65)
$IMPI_{t-1}$(-1)-$IMPI_{t-1}$(1)	**-0.134*****	**0.144*****	**-0.101*****	**0.088****	**-0.033**	**0.056**
	(-4.41)	**(3.64)**	**(-3.81)**	**(2.83)**	**(-1.20)**	**(1.36)**

The estimated goodwill impairment (E_GDWLIP) in the pre-SFAS 142 period is equal to the reduction of goodwill (GDWL) during the year if the reduction exceeds a 5% threshold relative to the beginning balance of goodwill and the firm also reports negative special items (SPI) that are at least as large as the reduction in goodwill. E_GDWLIP in the post-SFAS 142 period is equal to the reduction of GDWL during the year if the firm also reports negative SPI that are at least as large as the goodwill reduction. This definition uses a 0% threshold. E_IMPDUM_t is a dummy variable that is equal to one if firms have non-zero E_GDWLIP in year t, and zero otherwise. GTA_{t-1} is GDWL divided by total assets (AT) at the end of year t-1. ROA_{t-1} is operating income after depreciation (OIADP) in year t-1 divided by average total assets (AT). $IMPI_{t-1}$ is equal to one for observations with GTA_{t-1}>10% *and* ROA_{t-1}<0, minus one for observations with GTA_{t-1}<5% *and* ROA_{t-1}>5%, and zero otherwise. To adjust stock returns for size and book-to-market ratio, observations in the Compustat annual database with CRSP share code of 10 or 11 are sorted into ten groups based on size (market capitalization) on June 30 each year. Each of the ten size-based portfolios is further sorted into five additional portfolios based on the BTM ratio measured using the end-of-June market value and the book value of equity (CEQ) from the most recent fiscal year. For companies with fiscal year ending in April to June, we use the CEQ from the prior year. This procedure yields 50 portfolios. We then compute the equal weighted monthly portfolio returns for July through the subsequent June for each of the 50 portfolios. $BHAR_t$ for each firm is measured as the buy-hold return over the 12-month period starting three month after the end of fiscal year t-1 in excess of the buy-hold return on its size and book-to-market matched portfolio over the same period. Firms are split into two groups based on the number of segments every year. Single segment group includes observations with only one segment, while multiple segments group includes observations with more than one segment. The t-statistics (in parentheses) are adjusted for two-way cluster-robust standard errors (clustered by firm and year). ***, ** and * denote significance at 0.01, 0.05 and 0.10 level using two-tailed test, respectively.

Table 7: Regressions of future stock returns ($BHAR_t$) on the financial indicator of goodwill impairments ($IMPI_{t-1}$) including interactions for managerial incentives to inflate earnings in order to support a higher stock price.

$$BHAR_t = \alpha + \beta_1 IMPI_{t-1} + \beta_2 BEAT_{t-1} + \beta_3 IMPI_{t-1} \times BEAT_{t-1} + \beta_4 ISSUE_{t-1} + \beta_5 IMPI_{t-1} \times ISSUE_{t-1} + \beta_6 LONG_{t-1} + \beta_7 IMPI_{t-1} \times LONG_{t-1} + \varepsilon_t$$

	Pre-SFAS 142	Post-SFAS 142
Intercept	-0.011	0.095
	(-0.09)	(1.14)
$IMPI_{t-1}$	0.101	-0.157*
	(1.44)	(-1.92)
$BEAT_{t-1}$	0.142**	0.006
	(2.95)	(0.19)
$IMPI_{t-1}$*$BEAT_{t-1}$	0.006	0.053
	(0.05)	(1.64)
$ISSUE_{t-1}$	-0.046	-0.073
	(-0.65)	(-1.16)
$IMPI_{t-1}$*$ISSUE_{t-1}$	-0.085	-0.188*
	(-0.94)	(-1.90)
$LONG_{t-1}$	-0.017	-0.011**
	(-0.88)	(-2.43)
$IMPI_{t-1}$*$LONG_{t-1}$	-0.096	-0.014*
	(-1.70)	(-2.07)
Adj. R^2	0.1%	0.3%

This table reports cross-sectional regressions of $BHAR_t$ on $IMPI_{t-1}$, controlling for proxies for earnings management incentives. To adjust stock returns for size and book-to-market ratio, observations in the Compustat annual database with CRSP share code of 10 or 11 are sorted into ten groups based on size (market capitalization) on June 30 each year. Each of the ten size-based portfolios is further sorted into five additional portfolios based on the BTM ratio measured using the end-of-June market value and the book value of equity (CEQ) from the most recent fiscal year. For companies with fiscal year ending in April to June, we use the CEQ from the prior year. This procedure yields 50 portfolios. We then compute the equal weighted monthly portfolio returns for July through the subsequent June for each of the 50 portfolios. $BHAR_t$ for each firm is measured as the buy-hold return over the 12-month period starting three month after the end of fiscal year t-1 in excess of the buy-hold return on its size and book-to-market matched portfolio over the same period. $IMPI_{t-1}$ is equal to one for observations with GTA_{t-1}>10% *and* ROA_{t-1}<0, minus one for observations with GTA_{t-1}<5% *and* ROA_{t-1}>5%, and zero otherwise. GTA_{t-1} is goodwill (GDWL) divided by total assets (AT) at the end of year t-1. ROA_{t-1} is operating income after depreciation (OIADP) in year t-1 divided by average total assets (AT). $BEAT_{t-1}$ is an indicator variable set to one if firms' annual earnings in year t-1 are equal to or higher than the last available consensus forecast in I/B/E/S, and zero otherwise. $ISSUE_{t-1}$ is an indicator variable set to one if firms issue equity (SSTK) in year t-1, and zero otherwise. $LONG_{t-1}$ is an indicator variable set to one if CEO tenure (retrieved from ExecuComp) is higher than the annual sample median, and zero otherwise. The t-statistics (in parentheses) are adjusted for two-way cluster-robust standard errors (clustered by firm and year). ***, ** and * denote significance at 0.01, 0.05 and 0.10 level using two-tailed test, respectively.

Table 8: Regressions of future stock returns ($BHAR_t$) on the financial indicator for goodwill impairments ($IMPI_{t-1}$) including interactions for the richness of the information environment.

$$BHAR_t = \alpha + \beta_1 IMPI_{t-1} + \beta_2 FOLLOW_{t-1} + \beta_3 IMPI_{t-1} \times FOLLOW_{t-1} + \beta_4 LARGE_{t-1} + \beta_5 IMPI_{t-1} \times LARGE_{t-1} + \beta_6 HIGHIO_{t-1} + \beta_7 IMPI_{t-1} \times HIGHIO_{t-1} + \varepsilon_t$$

	Pre-SFAS 142	Post-SFAS 142
Intercept	-0.017	0.015
	(-0.39)	(0.46)
$IMPI_{t-1}$	0.022	-0.077**
	(0.25)	(-3.00)
$FOLLOW_{t-1}$	0.010	-0.029
	(0.24)	(-1.25)
$IMPI_{t-1}$*$FOLLOW_{t-1}$	0.066	-0.001
	(0.67)	(-0.06)
$LARGE_{t-1}$	-0.080**	-0.027
	(-2.97)	(-1.31)
$IMPI_{t-1}$*$LARGE_{t-1}$	-0.187	0.032**
	(-1.70)	(2.53)
$HIGHIO_{t-1}$	0.035	0.054
	(0.84)	(1.07)
$IMPI_{t-1}$*$HIGHIO_{t-1}$	0.051	0.046*
	(0.58)	(2.11)
Adj. R^2	0.1%	0.3%

This table reports cross-sectional regressions of $BHAR_t$ on $IMPI_{t-1}$, controlling for proxies for information environment. To adjust stock returns for size and book-to-market ratio, observations in the Compustat annual database with CRSP share code of 10 or 11 are sorted into ten groups based on size (market capitalization) on June 30 each year. Each of the ten size-based portfolios is further sorted into five additional portfolios based on the BTM ratio measured using the end-of-June market value and the book value of equity (CEQ) from the most recent fiscal year. For companies with fiscal year ending in April to June, we use the CEQ from the prior year. This procedure yields 50 portfolios. We then compute the equal weighted monthly portfolio returns for July through the subsequent June for each of the 50 portfolios. $BHAR_t$ for each firm is measured as the buy-hold return over the 12-month period starting three month after the end of fiscal year t-1 in excess of the buy-hold return on its size and book-to-market matched portfolio over the same period. $IMPI_{t-1}$ is equal to one for observations with GTA_{t-1}>10% *and* ROA_{t-1}<0, minus one for observations with GTA_{t-1}<5% *and* ROA_{t-1}>5%, and zero otherwise. GTA_{t-1} is goodwill (GDWL) divided by total assets (AT) at the end of year t-1. ROA_{t-1} is operating income after depreciation (OIADP) in year t-1 divided by average total assets (AT). $FOLLOW_{t-1}$ is an indicator variable set to one if firms have analyst following in year t-1, and zero otherwise. $LARGE_{t-1}$ is an indicator variable set to one if firms' market value of equity (PRCC_f*CSHO) is higher than the annual sample median, and zero otherwise. $HIGHIO_{t-1}$ is an indicator variable set to one if institutional ownership, measured by the percentage of shares held by 13F filers, is higher than the annual sample median, and zero otherwise. The t-statistics (in parentheses) are adjusted for two-way cluster-robust standard errors (clustered by firm and year). ***, ** and * denote significance at 0.01, 0.05 and 0.10 level using two-tailed test, respectively.

Table 9: Robustness tests for the post-ASU 2011-08 period. This sample consists of 8,484 observations from 2012 to 2015 with 1,186 estimated goodwill impairments.

Panel A: Conditional logit regressions employing firm-level clustering to predict goodwill impairments in period t using financial and market indicators from period t-1

Variables	Predicted Sign	Dependent variable: E_IMPDUM_t					
		Pre-SFAS 142 (1)	Post-SFAS 142 & Pre-ASU 2011-08 (2)	Post-ASU 2011-08 (3)	(3)–(1)	(3)–(2)	Post-SFAS 142 all inclusive (4)
$IMPI_{t-1}$	+	0.162	0.604***	0.663***	0.501**	0.059	0.602***
		(1.24)	(6.85)	(3.67)	(2.25)	(0.29)	(8.77)
$BTMG1_{t-1}$	+	0.509***	1.114***	0.459***	-0.050	-0.655***	1.015***
		(3.31)	(13.94)	(2.66)	(-0.22)	(-3.44)	(15.38)
Pseudo R^2		0.2%	1.3%	0.3%	-	-	1.2%

Panel B: Subsequent annual buy and hold abnormal stock returns (BHAR) for portfolios of observations formed on the financial indicator of goodwill impairments (IMPI)

Portfolio formed on $IMPI_{t-1}$	Pre-SFAS 142		Post-SFAS 142 & Pre-ASU 2011-08		Post-ASU 2011-08		Post-SFAS 142 all inclusive	
	N	$BHAR_t$	N	$BHAR_t$	N	$BHAR_t$	N	$BHAR_t$
$IMPI_{t-1}$=-1	1,861	-0.028	2,796	0.034**	1,187	-0.017	3,983	0.019
		(-1.27)		(2.54)		(-1.29)		(1.57)
$IMPI_{t-1}$=0	6,571	-0.046	15,069	-0.006	6,780	0.012	21,849	-0.001
		(-1.56)		(-0.76)		(1.21)		(-0.08)
$IMPI_{t-1}$=1	617	-0.061	1,425	-0.075***	517	-0.042	1,942	-0.066***
		(-0.44)		(-4.85)		(-0.82)		(-3.92)
$IMPI_{t-1}$(-1)-$IMPI_{t-1}$(1)		**0.033**		**0.109*** **		**0.025**		**0.085*** **
		(0.21)		**(4.21)**		**(0.41)**		**(3.27)**

The estimated goodwill impairment (E_GDWLIP) in the pre-SFAS 142 period is equal to the reduction of goodwill (GDWL) during the year if the reduction exceeds a 5% threshold relative to the beginning balance of goodwill and the firm also reports negative special items (SPI) that are at least as large as the reduction in goodwill. E_GDWLIP in the post-SFAS 142 period is equal to the reduction of GDWL during the year if the firm also reports negative SPI that are at least as large as the goodwill reduction. This definition uses a 0% threshold. E_IMPDUM_t is a dummy variable that is equal to one if firms have non-zero E_GDWLIP in year t, and zero otherwise. GTA_{t-1} is GDWL divided by total assets (AT) at the end of year t-1. ROA_{t-1} is operating income after depreciation (OIADP) in year t-1 divided by average total assets (AT). $IMPI_{t-1}$ is equal to one for observations with GTA_{t-1}>10% *and* ROA_{t-1}<0, minus one for observations with GTA_{t-1}<5% *and* ROA_{t-1}>5%, and zero otherwise. BTM_{t-1} is book value of equity (CEQ) divided by market value of equity (PRCC_f*CSHO) at the end of year t-1. $BTMG1_{t-1}$ is an indicator variable that is equal to one if BTM_{t-1} is greater than one, and zero otherwise. Panel A reports conditional logit regressions of Equation (1) estimated at firm clusters. Numbers in the parentheses are z-statistics. Panel B reports the pooled sample mean buy and hold abnormal stock returns, adjusted for size and book-to-market ratio. To adjust stock returns for size and book-to-market ratio, observations in the Compustat annual database with CRSP share code of 10 or 11 are sorted into ten groups based on size (market capitalization) on June 30 each year. Each of the ten size-based portfolios is further sorted into five additional portfolios based on the BTM ratio measured using the end-of-June market value and the book value of equity (CEQ) from the most recent fiscal year. For companies with fiscal year ending in April to June, we use the CEQ from the prior year. This procedure yields 50 portfolios. We then compute the equal weighted monthly portfolio returns for July through the subsequent June for each of the 50 portfolios. $BHAR_t$ for each firm is measured as the buy-hold return over the 12-month period starting three month after the end of fiscal year t-1 in excess of the buy-hold return on its size and book-to-market matched portfolio over the same period. ***, ** and * denote significance at 0.01, 0.05 and 0.10 level using two-tailed test, respectively.