Goodwill Testing and Earnings under SFAS 142

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Statement of Financial Accounting Standards 142, *Goodwill and Other Intangible Assets* (FASB 2001b) affords significant managerial discretion regarding the timing and size of goodwill impairment charges. We investigate whether charges under SFAS 142 reflect economic factors potentially related to fair value and reporting incentive proxies. We find evidence of both, but the influence of earnings management incentives appears stronger, especially after a transitional period. Goodwill impairment charges are strongly related to proxies for both "big bath" and "earnings smoothing" reporting incentives. The results are consistent with the existence of sufficient managerial discretion under SFAS 142 to permit manipulation of impairment charges.

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Introduction

Goodwill is the most difficult to define among all intangible assets. The value of goodwill cannot be directly associated with any specific identifiable right and it is not separable from the company as a whole. Rather, it represents the unique value of the company as a whole over and above the net identifiable tangible and intangible assets. With the adoption of Statement of Financial Accounting Standards 141 (SFAS 141), *Business Combinations* (FASB 2001a) all merger transactions must be accounted for using the purchase method, so every merger has the potential to include goodwill. Prior to the adoption the new standards, goodwill was subject to arbitrary amortization over a period not to exceed 40 years. The FASB believed that this accounting treatment did not reflect the underlying economic nature of goodwill, and in July, 2001, adopted SFAS 142, G*oodwill and Other Intangible Assets* (FASB 2001b). This standard significantly changed accounting for goodwill by eliminating amortization and requiring an annual test to determine if the value of goodwill is impaired.

One intent of SFAS 142 is to reduce managerial discretion and to increase the consistency and comparability of financial statement information among entities. Hayn and Hughes (2005) present results that indicate that prior to SFAS 142, a lag of three to four years existed between the deterioration of an acquired business's performance and the recognition of any goodwill impairment. They further report that for a significant subset of firms, the lag may be up to ten years. Hayn and Hughes argue that the delay is consistent with managerial discretion in timing goodwill write-offs to meet reporting objectives. These authors suggest that the requirements of SFAS 142 are more stringent than previous standards in that an annual review of the value of goodwill is required, while

previous standards only required a review if circumstances indicated that a decline in value may have occurred.

Watts (2003) questions whether the requirements in SFAS 142 will improve reporting with respect to goodwill and the timely recognition of goodwill impairments. Watts notes (p. 217), "Assessing impairment requires valuation of future cash flows. Because those future cash flows are unlikely to be verifiable and contractible, they, and a valuation based on them, are likely to be manipulated…. SFAS 142 may be an error in judgment by the FASB."

Riedl (2004) notes that reporting of asset impairments is conceptually a function of economic factors and reporting incentives. SFAS 142 provides a transitional period during which goodwill impairments are recognized as a change in accounting principle that is reported below operating income on the income statement. After the transitional period, goodwill impairments are reported as a component of operating income. This paper examines goodwill write-downs both during the transitional period when the charge is "below the line" and in subsequent periods when the charge is included in the calculation of operating income to evaluate whether these write-downs result from reporting incentives or from economic factors.

Accounting Rules for Goodwill and Asset Impairment

Under the purchase method, the full purchase price is reflected in the entries to record the acquisition and the fair value of the assets, including goodwill, and liabilities acquired are reflected in the financial statements of the acquiring company. Goodwill, as defined by SFAS 141, is "the excess of the cost of an acquired entity over the net of the amount assigned to assets acquired and liabilities assumed."

The significant rise in both the frequency and the magnitude of asset write-offs in the late 1980s and 1990s led the FASB to adopt, in 1995, SFAS 121, *Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed Of* (FASB 1995), which specified criteria for determining whether impairments of long-lived assets (including goodwill) had occurred and how to measure and report them. Impairment charges are based on a review for recoverability whereby the entity first estimates the future cash flows expected from the use of the asset and its eventual disposition. SFAS 121 states "an entity shall review long-lived assets and certain identifiable intangibles to be held and used for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable." However, a periodic, systematic review of intangibles was not required, so goodwill impairment charges potentially could be managed.

The effect of SFAS 121 has been controversial. Baker, Rue and Volkan (2000) present results that indicate SFAS 121 reduces managerial discretion. However, Riedl's (2004) results indicate that the reporting of write-offs under SFAS 121 has decreased in quality relative to before the standard.

As intangible assets become an increasingly important economic resource for many entities and an increasing proportion of the assets acquired in many transactions, users of financial statements indicated a need for better information about these assets. In July 2001, with unanimous approval, the FASB issued SFAS no. 141 *Business Combinations* (FASB 2001a), which requires that all business combinations be accounted for using the purchase method, and SFAS no. 142 *Goodwill and Other Intangible Assets* (FASB 2001b), which superseded APB Opinions 16 and 17 respectively (FASB 1970a;

FASB 1970b). To address accounting for goodwill resulting from purchase method, FASB adopted a whole new set of guidelines which are contained in SFAS 142.

SFAS 142 significantly changes accounting for goodwill. Accounting for goodwill is based on reporting units. Paragraph 30 of statement 142 provides guidance for identifying reporting units. A reporting unit is defined as an operating segment or a component of an operating segment that has discrete financial information, has dissimilar economic characteristics, or is regularly reviewed by management. Goodwill should be allocated to reporting units, and potential impairment charges should be evaluated at the reporting unit level. The rationale is that expected synergies resulting from acquisitions could be better recognized and evaluated within the entity. Further, annual impairment testing at the reporting unit level reduces the possibility for management to group assets inappropriately to either avoid or overestimate asset write-offs.

Compared to SFAS No. 121 which required testing only in certain circumstances and provided little guidance, SFAS No. 142 provides specific guidance for testing goodwill for impairment. The statement does not presume that goodwill is a wasting asset. Consequently, the statement mandates that goodwill be tested for impairment, which the FASB felt would better reflect the valuation of goodwill subsequent to acquisition. Further, goodwill must be tested for impairment on an annual basis and, in certain circumstances, between annual reviews. It also requires the impairment test be performed at the same time every year, and provides a method for determining goodwill impairment using a two-step process.

Because periodic evaluation for impairment is required, SFAS No. 142 significantly reduces the possibility for management to manipulate the timing of impairment

recognition. This Statement also requires enhanced disclosure of information about goodwill and other intangible assets in the years subsequent to their acquisition that is meant to provide users with a better understanding of the expectations about and changes in those assets over time, thereby improving their ability to assess future profitability and cash flows. However, Hayn and Hughes (2005) suggest that "in addition to the subjectivity that is likely to be present in determining the firm's reporting units and allocating newly created goodwill to these units, the impairment test introduces two additional layers of subjectivity by requiring the projection of the fair value of the reporting unit(s) as a whole and the unit(s)' assets and liabilities excluding goodwill" (p. 7).

SFAS 142 provides a transitional period for companies first adopting the standard. Because SFAS 142 is to be applied retroactively, companies must evaluate goodwill already on the books at the date of adoption. The statement potentially allows the initial impairment charge to be recognized below the line as a change in accounting principle. After the initial adoption, subsequent impairment charges are to be recognized as a component of operating income. The standard must be implemented for fiscal years beginning after December 15, 2001. Early adoption was also an alternative, with companies allowed to implement the standard for with fiscal years beginning after March 15, 2001, provided that the first interim financial statements have not previously been issued. In all cases, the initial application of this statement must be as of the beginning of the fiscal year. For a company to show an impairment charge as a change in accounting principle, there had to be goodwill already on the books prior to the implementation of the standard.

Upon adoption of SFAS 142, businesses are required to perform the transitional impairment test on all goodwill within six months. The amounts used in the transitional

goodwill impairment test should be measured as of the first of the year. If the first step indicates that goodwill is impaired, any impairment loss should be recorded as soon as possible, but no later than the end of the year of initial application. An impairment loss resulting from the transitional test is treated as a change in accounting principle and recognized in the first interim period financial statement. An impairment loss that does not result from a transitional goodwill impairment test shall be presented as a component of operating income.

Discretion existing in SFAS 142 could allow management to manipulate write-down amounts to achieve desired reporting objectives for earnings. Identifying reporting units entails significant judgment. As the FASB provides only broad guidelines for the implementation process, companies may struggle to define the most appropriate reporting units. One goal may be to choose the most favorable allocation alternative. The choice of reporting units and goodwill allocation may significantly affect the amount of goodwill impairment that companies will have to write off. Impairment charges are dependent on the assumptions management makes with respect to cost of capital and expected cash flows.

This rule potentially provides incentives for companies to recognize an impairment charge during the first fiscal quarter after adoption. If companies perform an impairment test by the end of the second quarter, any charge will show up on the financial statements as a “change in accounting principle” which is reflected as a “below-the-line” item, and operating income will not be affected. However, if the impairment test is performed later in the year, the charge will be “above-the-line” and will be included in operating expenses.

A study by Bear Stearns in 2002 indicated that 500 or more companies would be candidates for goodwill impairment charges, with at least six companies announcing expected charges in excess of $1 billion and others expected to follow suit (Sender 2002). Analysts anticipated that companies would take the charge off sooner rather than later. Robert Willens, a Lehman Brothers accounting specialist, stated, "If an impairment is indicated, you want to do this in 2002. You can explain it more easily now as part of adoption of the new rules" (Sender 2002, p. C.5). This paper examines these transitional charges and charges in subsequent periods to evaluate whether they reflect economic substance or manipulation.

Previous Research and Hypothesis

The process of allocating goodwill to business units and the valuation process will be hidden from investors, which may provide ample opportunity for manipulation. As a result, management could use the available discretion to delay or overstate any impairment recognition to reach different impairment amounts they want.

All entities, regardless of size, are subject to the risks of potential impairment of their assets. Some indicators of potential goodwill impairment described in SFAS 142 include a significant adverse change in the business climate, a loss of key personnel, and disposal of a reporting unit or a significant portion of a reporting unit. Asset impairment resulting from these factors could be categorized as having economic substance.

Chen, Kohlbeck and Warfield (2004) present results indicating that impairment charges taken during the transitional period after adoption of SFAS 142 represent new information to the market. They also report increased value relevance associated with SFAS 142, and interpret their results to mean that the impact of the standard was consis-

tent with the intent of the FASB's objectives in promulgating the new standard. Further insight into this question can be gained by determining whether the impairment charge resulted from economic substance, from earnings management techniques, or from a combination of both. Fair value measurements required under the Statement are numerous and also require the use of significant judgment. SFAS 142 has expressed a preference for the use of observable market prices to evaluate impairment. In the absence of observable market prices, fair value is required to be based on the best information available. Since there are many options for companies to choose from, the result could be a wide range of values. This makes it possible for the allocation process to be manipulated by management.

Alternatively, Baker, Rue and Volkan (2000) argue that "in the absence of enforceable restrictions over the reporting of write-offs, management could use accounting rules to manipulate earnings either by not recognizing impairment when it has occurred or by recognizing it only when it is advantageous to do so." Dowdell and Press (2002) suggest that management can use latitude in the accounting rules for write-downs either to smooth their income or to take a "bath".

Healy (1985) finds managers with bonus plans often make accounting choices that increase current earnings. If net income is low, below a threshold that triggers a bonus, the manager may have an incentive to lower it even further, which is called "taking a bath." This strategy attempts to move income into a future period and to increase the probability of earning a future bonus. Heflin and Warfield (1997) also suggest that managers tend to delay a write-off from the current year to a future year, recognizing the charge-off when earnings performance is already below the threshold for a bonus. Simi-

larly, if net income is high, above some predetermined cap, there is motivation for management to adopt accounting policies and procedures to reduce reported net income in the current period and shift it to a subsequent period. These techniques are sometimes called "smoothing."

Zucca and Campbell (1992) and Wolcott (1993) report that firms that recognizing asset impairments are less profitable, or have lower returns on assets and equity in the write-down year, compared to non-write-off firms. They also find write-off firms have pre-write down earnings in the current year that are less than previous year's earnings. This suggests that the firms took a big bath with the write-downs. Kinney and Trezevant (1997) investigate special items for firms from 1981 through 1991, and find that firms with either large positive or large negative changes in earnings recognize negative income from special items. This indicates, respectively, that firms use write-downs to either smooth earnings or take "a big bath".

Alciatore et al. (1998) examine the timeliness of write-offs for firms in the oil and gas industry, finding that such write-offs have a significant negative association with contemporary quarterly returns and an even more negative association with poor quarter returns. They conclude such impairments are not timely. Francis, Hanna and Vincent (1996) provide evidence that both manipulation and impairment can drive write-off decisions. They find that reporting incentives can vary by the type of write-offs. (i.e., inventory, goodwill, property, plant, and equipment, and restructuring charges). Their findings show that reporting incentives play little or no role in determining inventory and fixed asset write-offs, but may play a substantial role in explaining other, more discretionary items, such as goodwill write-offs.

Reported asset impairments result, therefore, from either economic factors or reporting incentives. If an economic decline in the value of a firm's assets below carrying value is observed, impairment on assets should be recognized. However, if the regulations leave discretion in determining the amount and timing of an impairment, management may report or not report an economic impairment if there are reporting incentives to do so.

Relative to earlier standards, SFAS 142 provides more specific guidance in determining the amount and timing of recognized goodwill impairments, and periodic evaluation for impairment is required. The detailed methodology and increased scrutiny required by SFAS 142 leave less room for management to manipulate write-down amounts. However, there is still considerable discretion in applying this methodology. Additionally, during the transition period there may be incentives to maximize the impairment charge as it is recognized as a "below the line" item and not included in operating income. However, the requirement that goodwill must be evaluated for impairment may force companies to recognize an impairment charge that had previously been avoided. The first hypothesis to be tested is:

H1: Goodwill write-downs reported as accounting changes during the transition period after adoption of SFAS 142 result from both reporting incentives and underlying economic substance.

There is also considerable discretion allowed subsequent to the transitional period. While annual evaluation is required, foreknowledge of this requirement may allow additional management planning. The inclusion of the impairment charge as a component of operating income may provide additional incentives to manage the timing and amount

of the charge. Still, significant economic events may be material and force recognition of impairment charges. The second hypothesis to be evaluated is:

H2: Goodwill write-downs reported in net income subsequent to the transition period after adoption of SFAS 142 result from both reporting incentives and underlying economic substance.

Methods and Variables

We observe a charge to recognize the cumulative effect of an accounting change for a goodwill impairment under SFAS 142 only if the firm records a charge. If firms tend to exploit the discretion that the statement allows, the observed charges constitute a non-random sample. Heckman (1976, 1979) analyzes regression analysis in such cases of self-selection and demonstrates that OLS estimates of regression coefficients and standard errors are biased. Heckman proposes a two-equation model to correct for selection bias. One equation is a probit regression of the probability of observing non-zero values of the dependent measure as a function of one set of regressors, and the other is an ordinary linear regression to explain the magnitude of observations using a separate set of regressors.[1]

We examine the following variables to capture economic and earnings management motives for goodwill writeoffs. We use buy-and-hold abnormal stock return

[1] Heckman (1979) shows that the tobit model is a special case of the sample selection model. This approach is commonly implemented using the two-step approach that Heckman (1979) suggests, but Heckman points out that conventional standard error estimates from the approach are inconsistent. Hall (2002) notes that the two-step estimators are inefficient and do not constrain the estimated correlation of the two equations' error terms to an absolute value of one or less. Given advances in statistical software and computing power, Hall recommends estimating the system simultaneously using full maximum likelihood. This approach is beginning to appear in the accounting and finance literature, for example, in Mansi, Maxwell and Miller (2004). We use the full maximum likelihood approach. Francis, Hanna and Vincent (1996) and Riedl (2004) adjust for the truncation of observed writeoffs by means of tobit models, which treat the dependent variable as censored.

(BHAR) over the preceding five years as an indicator of the change in the firm value. This measure tends to be highly skewed (Barber and Lyon, 1997; Cowan and Sergeant, 2001), so we use a dummy variable equal to one if the BHAR is in the bottom quartile of the sample. A positive association between the low BHAR dummy and the decision to write off goodwill would support an economic motive. We also define a dummy variable equal to one when a firm has long-term debt but no Standard and Poor's debt rating. This variable is a proxy for the presence of bank debt, privately placed debt or junk bonds (Riedl, 2004). Such forms of long-term debt tend to have tighter covenants that could be more easily violated by a goodwill writeoff (Beatty, Dichev and Weber, 2002). Therefore, a negative association between the decision to write off goodwill and the unrated debt dummy would support an earnings management motive.

Net losses could have a positive association with goodwill writeoffs for either economic or earnings management reasons. A loss could indicate that goodwill is overvalued (an economic explanation). Alternately, a firm could write off goodwill during a net loss year, consistent with a "bath" earnings reporting strategy. We also include intangibles as a percentage of assets as a proxy for goodwill as a percentage of assets. The more important goodwill is on the firm's balance sheet, the more attention it is likely to receive from management for either economic measurement or earnings management reasons. We also include the number of cash acquisitions of publicly traded firms in the last five years as proxy for the importance of recent goodwill in the firm's reporting decisions. We expect a positive coefficient on the dummy variable for a net loss, the intangibles ratio and the number of cash acquisitions under either the economic or earnings management hypothesis.

The dependent variable for the linear regression is the goodwill adjustment scaled by total assets. This measure is negative when there is a writeoff.[2] Companies with greater growth in sales and net income are expected to have smaller absolute values of goodwill writeoffs. Thus, the predicted sign for the coefficients for these measures is positive. We also include a proxy for the firm's current economic environment, as represented by return on net operating assets (RNOA) of the firm's 3-digit NAICS subsector for the current fiscal year. This effect is expected to be positive to the extent that goodwill writeoffs reflect economic reality. Following Riedl (2004), we use "big bath" and smoothing proxies to assess earnings management explanations for the amount of goodwill writeoffs. We construct the bath and smoothing variables based on the change in earnings before interest, depreciation, amortization and taxes (A18) from accounting change year –1 to 0, scaled by year –1 assets. The big bath variable is the scaled accounting change if it is less than the median negative value, and zero otherwise. Firms with bigger negative changes are expected to have larger (i.e., more negative) goodwill writeoffs, hence we predict a positive coefficient for the big bath proxy under the earnings management hypothesis. The smoothing variable is the mirror image of the bath variable; it is the scaled income change if it is above the median of positive changes, and zero otherwise. Under earnings management, the smoothing variable should be negatively associated with the goodwill writeoff variable (i.e., large increases in earnings imply more negative writeoffs).

[2] During the transition period, goodwill writeups and writedowns were allowed, thus the dependent measure for an individual company could be either positive or negative. Subsequent to the transition period, only writedowns occurred, and all non-zero values of the dependent measure are negative.

Results

Table 1 reports the descriptive statistics for the accounting change and corresponding control samples. Firms that take an impairment charge during the transition period write off a mean of 9% (median 5%) of their total assets and 40% of their goodwill. Those that separately report goodwill for the preceding fiscal year (about two-thirds of the sample) have a mean goodwill of 21% of assets (median 17%); all intangibles as a percent of assets, available for the bulk of the sample, are three to four percentage points greater. Control firms report mean (median) goodwill of 16% (11%) of assets, with total intangibles again around four percentage points greater. Less than a third of the accounting change and control firms separately report goodwill amortization in the fiscal year before adoption of SFAS 142. Those reporting intangibles amortization have a median of slightly over one percent for the accounting change sample and slightly under one percent for the control sample. We interpret these figures as indicating that the goodwill is an economically significant fraction of reported assets, and that for firms reporting an effect of an accounting change, the report effect is a substantial fraction of assets and goodwill.

Table 1 also shows that firms in the accounting change sample report median sales growth of –3% from the previous fiscal year to the year of SFAS 142 adoption, while control firms report median sales growth of +4%. This is crude evidence that firms reporting an effect of SFAS 142 on assets have poorer operating performance. Twenty-five percent of the accounting change sample and 19% of the control sample made an acquisition for stock of a firm listed on CRSP in the preceding three years, while 11%-12% of each sample make a cash acquisition of a CRSP-listed firm the period.

Table 2 reports buy-and-hold abnormal stock returns over the years preceding adoption of SFAS 142. The accounting change effect sample experiences negative Fama-French three-factor model mean and median buy-and-hold abnormal returns over one, three and five years preceding the fiscal year of SFAS 142 adoption. Simple market-adjusted returns are negative over the preceding five and three years but positive over the immediately preceding one year. Control sample buy-and-hold abnormal returns using the Fama-French model are less negative than those of the accounting change effect sample over the five and three year periods, and are positive in the one year period. The control sample market-adjusted returns are positive except for a negative median in the five-year period. All the means are significantly different from zero using a skewness-adjusted transformed-normal test (Hall, 1992.) The results suggest that the stockholders of both groups experience negative returns relative to their risk characteristics in the preceding five years, but possibly not in the immediately preceding year. The results also suggest that stock returns in the recent past are worse in firms reporting an accounting change effect. If past acquisitions accounted for by the purchase method contribute to the poor risk-adjusted stock-price performance, or if acquired assets lose market value in a similar manner to other assets, there are three potential implications of table 2 results. First, the worse performance for the change sample suggest that the transitional impairment writeoffs recorded as accounting change effects could reflect reductions in market value that are greater than those experienced by control firms. Second, the negative risk-adjusted performance for the control sample before the most recent year suggests that control firms could have reason to write off goodwill, although they do not do so. Third, the mostly positive market-adjusted (but not risk-adjusted) returns for the control sample

suggest that control firms have more flexibility than change firms to interpret their goodwill as being unimpaired, depending on how they apply the guidelines of SFAS 142.

Table 3 reports the results for the two-equation sample selection model for the firms recognizing an impairment charge during the transition period. The binary dependent variable in the probit equation is equal to one if the firms takes a transitional goodwill writeoff. The dependent variable in the linear regression equation is the accounting change cumulative effect, scaled by total assets at the end of the previous fiscal year. A writeoff produces a negative value of the variable.

Table 3 shows that a prior five-year buy-and-hold abnormal return being in the worst quartile has a positive influence on the probability of a goodwill writeoff. This is consistent with the hypothesis that firms consider economic performance in deciding whether to take a goodwill writeoff. The dummy variable for unrated debt has a significantly positive coefficient, supporting the prediction that firms consider potential debt covenant violations in making writeoff decisions. Recording a net loss for the year is a significant positive predictor of writeoffs, consistent with both economic and earnings management motives.[3] The ratio of intangibles to prior year assets is also a positive predictor of goodwill writeoffs. The number of cash acqusitions in the previous five years is insignificant in predicting whether a firm takes a writeoff.

In the linear regression equation, the coefficients of current year sales growth and subsector RNOA are positive, indicating that positive operating performance and industry environment are associated with writeoffs that are smaller in absolute value. The coeffi-

[3] The net loss dummy defined using net income. Similar to big bath reporting incentives, presumably a firm considering recording a transitional impairment write-off would be less reluctant to do so if its net income before extraordinary items is already negative. Estimating the regressions with the loss dummy defined on income before extraordinary items does not alter the conclusions.

cient of the bath proxy is significantly positive, indicating that companies with larger negative changes in net income tend to write off larger amounts of goodwill. The coefficient of the smoothing proxy is significantly negative, indicating that companies with larger positive changes in net income also tend to write off larger amounts of goodwill. The results indicate that both economic performance and earnings management contribute to explaining transitional goodwill impairment charges.

Table 4 replicates the linear regression model of table 3 using a robust regression method, the M-estimator of Huber (1973). The method is robust to outliers in the dependent variable. The results are similar to those in table 3

Table 5 reports descriptive statistics for the sample of goodwill impairment charges above the line and the corresponding control sample. For firms recognizing an impairment charge, the after-tax impairment charge is 63% of total assets and 84% of goodwill.

Table 6 reports the results for the two-equation sample selection model for the firms recognizing an impairment charge as a part of ordinary income after the transition period. As of this writing, we are revising this model to be more consistent with the one for the transitional impairment writeoffs. Neither prior five-year subsector RNOA nor the ratio of intangibles to prior year assets have a significant effect on goodwill writeoffs in the probit equation. The presence of unrated debt has only a marginally significant effect on goodwill writeoffs ($p = .09$). The presence of a net loss in the current year is associated with a higher probability of a charge. Further, recognition of an impairment charge the previous year as a cumulative effect of an accounting change does not predict a subsequent impairment charge.

In the linear regression in table 6, the proxies for big bath and smoothing proxies again have coefficients that are highly statistically significant and of the signs predicted by the earnings management hypothesis. In contrast to the transition period, current year subsector RNOA does not affect the magnitude of goodwill writeoffs, and the dummy variable for unrated debt is only marginally significant ($p = .06$). The size of the impairment charge appears to reflect primarily earnings management behavior.

Conclusion

The results indicated that during the transitional period for the adoption of SFAS 142 the goodwill impairment charges reflect both economic substance and earnings management. The positive significant association between the impairment charge and both sales growth and subsector RNOA indicate economic reasons for the impairment charge. At the same time, the variables for unrated debt, "big bath" charges, and income smoothing are also significant. This suggests that the management discretion created by SFAS 142 is sufficient to allow manipulation of writeoff amounts.

After the transitional period, the variables related to economic substance are no longer significant predictors of the magnitude of the goodwill impairment charge. When the impairment charge is recognized "above the line" as a component of operating income, the size of the charge is predicted by the "big bath" and smoothing proxies.

The results indicate that the reporting of goodwill impairments under SFAS 142 have lower associations with economic factors, particularly in the post-transition period, and are primarily associated with earnings management behavior. The charges appear to reflect opportunistic behavior of managers responding to reporting incentives rather than

managers providing substantive information about firm performance and the expectations about realizing benefits from the existence of goodwill.

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Table 1

Descriptive statistics for 768 firms reporting an accounting change cumulative effect under SFAS 142 and 1432 firms with goodwill or intangibles amortization not recording one, first fiscal year ending after December 15, 2002 and previous fiscal year if ending after March 15, 2002.

Panel A includes each firm only in the fiscal year it reports an accounting change for SFAS 142 adoption. Panel B includes firms that are not in the accounting change sample, have nonzero goodwill or goodwill amortization reported or, if Compustat records missing values for both items, nonzero intangibles amortization, for the last fiscal year, if any, ending on or before December 15, 2002 and after March 15, 2002 and the first fiscal year end after December 15, 2002. A firm could be represented twice in panel B. All ratios are in decimal, not percent, form. Many firms report a combined balance sheet item for goodwill and other intangibles, resulting in a missing value for the goodwill asset on Compustat and corresponding low sample size for the ratios involving the goodwill asset amount.

Variable	N	Mean	Std Dev	10th %ile	Median	90th %ile
Panel A: Firms with goodwill-related accounting changes (N=768)						
Goodwill accounting change to year –1 assets	761	–0.0860	0.1105	–0.2355	–0.0458	–0.0025
Goodwill accounting change to year –1 goodwill	492	–0.4054	1.3524	–1.0000	–0.3706	–0.0409
Goodwill to year –1 assets	492	0.2142	0.1756	0.0295	0.1669	0.4707
Intangibles to year –1 assets	713	0.2539	0.2103	0.0328	0.1997	0.5595
Year –1 goodwill amortization to year –1 sales	193	0.0003	0.0016	0.0000	0.0000	0.0000
Year –1 intangibles amortization to year –1 sales	360	0.0821	0.3331	0.0021	0.0117	0.1396
Subsector median RNOA (Nissam & Penman, 2001, with Graham tax rate)	766					
Current year	768	–0.0788	0.6291	–0.1903	0.0125	0.0913
Mean of previous five fiscal years	760	–0.1023	0.3551	–0.4791	0.0271	0.0930
Rate of change in sales, year –1 to 0	760	–0.0232	0.3579	–0.2925	–0.0278	0.2016
ΔE: Change in income before extraordinary items, divided by year –1 assets	760	0.0482	0.3407	–0.0793	0.0112	0.1805
Change in operating net cash flow, divided by year –1 assets	757	0.0079	0.1099	–0.0876	0.0049	0.0918
Rate of change in cash dividends to common, year –1 to 0	760	0.0306	0.5057	0.0000	0.0000	0.0200
Bath: ΔE when < 0 and < median of all such negative values on Compustat	760	–0.0315	0.1728	–0.0793	0.0000	0.0000
Smooth: ΔE when > 0 and > median of all such positive values on Compustat	760	0.0783	0.2851	0.0000	0.0000	0.1805
Dummy variable: 1 = firm has long–term debt but no S&P debt rating	761	0.4427	0.4970	0.0000	0.0000	1.0000
Dummy variable: 1 = firm reports a net loss in year 0	761	0.7096	0.4542	0.0000	1.0000	1.0000
Number of acquisitions for stock in the preceding three years	537	0.2533	0.9940	0.0000	0.0000	1.0000
Number of acquisitions for cash in the preceding three years	537	0.1173	0.4311	0.0000	0.0000	0.0000

Table 1 continued

Variable	N	Mean	Std Dev	10th %ile	Median	90th %ile
Panel B : Firms with no goodwill–related accounting change (N=1236)						
Goodwill to year –1 assets	898	0.1616	0.1555	0.0128	0.1094	0.3911
Intangibles to year –1 assets	1196	0.2003	0.1818	0.0201	0.1453	0.4700
Year –1 goodwill amortization to year –1 sales	329	0.0375	0.3403	0.0000	0.0014	0.0188
Year –1 intangibles amortization to year –1 sales	1235	0.1031	0.7463	0.0008	0.0089	0.1053
Subsector RNOA (Nissam & Penman, 2001, with Graham tax rate)						
Current year	1233	–0.0152	0.5946	–0.2858	0.0188	0.1341
Mean of previous five fiscal years	1235	–0.1501	0.5351	–0.8245	–0.0058	0.0993
Rate of change in sales, year –1 to 0	1234	0.1634	1.6521	–0.2612	0.0370	0.3497
ΔE: Change in income before extraordinary items, divided by year –1 assets	1235	0.0921	0.4166	–0.0920	0.0169	0.2565
Change in operating net cash flow, divided by year –1 assets	1234	0.0233	0.1701	–0.1011	0.0125	0.1447
Rate of change in cash dividends to common, year –1 to 0	1203	0.0441	0.4105	0.0000	0.0000	0.0189
Bath: ΔE when < 0 and < median of all such negative values on Compustat	1235	–0.0302	0.1015	–0.0920	0.0000	0.0000
Smooth: ΔE when > 0 and > median of all such positive values on Compustat	1235	0.1204	0.3952	0.0000	0.0000	0.2565
Dummy variable: 1= firm has long–term debt but no S&P debt rating	1236	0.5485	0.4978	0.0000	1.0000	1.0000
Dummy variable: 1 = firm reports a net loss in year 0	1236	0.3746	0.4842	0.0000	0.0000	1.0000
Number of acquisitions for stock in the preceding three years	823	0.1944	0.5160	0.0000	0.0000	1.0000
Number of acquisitions for cash in the preceding three years	823	0.1118	0.4728	0.0000	0.0000	0.0000

Table 2

Buy-and-hold abnormal returns preceding the fiscal year an accounting change cumulative effect under SFAS 142

The fiscal year is the first one ending after December 15, 2002, or the previous fiscal year if ending after March 15, 2002. The control sample contains firms with goodwill or intangibles amortization not recording an accounting change cumulative effect. Parameters are estimated over the thirty-six month period beginning four months after the fiscal year end. T1 is the skewness-corrected transformed normal test statistic (Hall, 1992.) MAR stands for market-adjusted returns, the simple difference between the compounded stock return and compounded market index return. The Fama-French SMB and HML factors are from Ken French's web site. Both the Fama-French and MAR calculations use the CRSP value-weighted market index, not the equal-weighted index included in the Fama-French factor data set.

Benchmark	N	How many months before fiscal year	Mean BHAR	Median BHAR	+:–	T1
Panel A: Accounting change effect sample						
Fama-French	531	60	<–999.9%	–82.02%	129:402	–1.83*
Fama-French	531	36	–665.17%	–51.08%	139:392	–2.42**
Fama-French	530	12	–11.12%	–6.32%	239:291	–2.69**
MAR	531	60	–27.95%	–63.23%	118:413	–2.19*
MAR	531	36	–9.34%	–22.26%	180:351	–2.50**
MAR	530	12	22.63%	11.88%	336:194	10.77***
Panel B Control sample						
Fama-French	798	60	–818.57%	–47.67%	299:499	–3.72***
Fama-French	798	36	–106.87%	–13.48%	361:437	–4.28***
Fama-French	795	12	10.10%	4.57%	427:368	2.73**
MAR	798	60	23.44%	–19.04%	341:457	4.22***
MAR	798	36	43.48%	14.14%	463:335	12.10***
MAR	795	12	16.08%	3.41%	417:378	4.39***

*, **, *** denote significance at the 5%, 1% and 0.1% levels.

Table 3

Selection model regressions to predict and explain transitional SFAS 142 writeoffs

The dependent variable for the probit regression is a binary variable where a 1 indicates that the firm reports a nonzero cumulative effect of an accounting change for adoption of SFAS 142. The dependent variable for the ordinary linear regression is the goodwill-related accounting change effect (negative if it reduces income) divided by year –1 total assets. The two regressions are estimated simultaneously as a Heckman-type selection model system using maximum likelihood. The subsector RNOA is the median, across all firms in the same NAICS 3-digit subsector, of return on net operating assets as defined by Nissim and Penman (2001). Changes in sales are rates of change. The big bath (smoothing) reporting proxy is the rate of change in EBITDA provided that it is negative (positive) and below (above) the median of all such negative (positive) values reported by publicly traded firms on Compustat for the same fiscal year, and zero otherwise. t statistics are in parentheses.

	Predicted sign Economic/EM	(1)	(2)	(3)
Probit regression variable				
Intercept		–0.839 (–12.43***)	–0.815 (–12.11***)	–0.82739 (–12.493***)
Dummy: Prior five-year BHAR in worst quartile	+ / 0	0.174 (2.35**)		0.166 (2.27*)
Dummy variable for unrated debt	? / –	–0.117 (–1.87*)	–0.107 (–1.71*)	–0.124 (–2.00*)
Dummy variable for net loss	+ / +	0.206 (3.56***)	0.213 (3.68***)	0.196 (3.43***)
Intangibles to year –1 assets	+ / +	1.468 (8.48***)	1.462 (8.40***)	1.498 (8.86***)
Number of cash acquisitions last five years	+ / +	0.092 (1.52)	0.084 (1.39)	
N		1577	1577	1577
Linear regression variable				
Intercept		–0.160 (–12.20***)	–0.161 (–12.09***)	–0.163 (–12.89***)
Δ sales, year –1 to 0	+ / 0	0.033 (2.48**)	0.034 (2.54**)	0.033 (2.46**)
Δ sales, year –5 to –1	+ / 0	–0.000 (–0.22)	0.019 (–0.27)	–0.000 (–0.23)
Subsector RNOA, year 0	+ / 0	0.014 (1.86*)	0.015 (1.97*)	0.014 (1.86*)
"Big bath" reporting proxy	0 / +	0.393 (3.70***)	0.387 (3.63***)	0.397 (3.73***)
Smoothing reporting proxy	0 / –	–0.227 (–2.54***)	–0.238 (–2.66***)	–0.223 (–2.50***)

*, ** and *** indicate statistical significance at the 5%, 1%, and 0.1% levels, respectively.

Table 4

Regression to explain transitional writeoffs under SFAS 142: Robust regression

Regression by the M-estimation method of Huber (1973). The dependent variable is the goodwill-related accounting change effect (negative if it reduces income) divided by year –1 total assets. The subsector RNOA is the median, across all firms in the same NAICS 3-digit subsector, of return on net operating assets as defined by Nissim and Penman (2001). Changes in sales are rates of change. The big bath (smoothing) reporting proxy is the rate of change in EBITDA provided that it is negative (positive) and below (above) the median of all such negative (positive) values reported by publicly traded firms on Compustat for the same fiscal year, and zero otherwise. Chi-square statistics are in parentheses.

	Predicted sign Economic/EM	
Intercept		–0.043 (272.74***)
Δ sales, year –1 to 0	+ / 0	0.025 (10.18***)
Δ sales, year –5 to –1	+ / 0	–0.000 (0.12)
Subsector RNOA, year 0	+ / 0	0.013 (15.68***)
"Big bath" reporting proxy	0 / +	0.129 (4.72*)
Smoothing reporting proxy	0 / –	–0.107 (4.34*)
R^2		2.29%

*, ** and *** indicate statistical significance at the 5%, 1%, and 0.1% levels, respectively.

Table 5

Descriptive statistics for 532 firm-years recording a goodwill impairment charge and 7553 control firm-years with goodwill or intangibles amortization not recording one; fiscal years ending after December 15, 2002.

Panel B includes firms that are not in the impairment charge sample, have nonzero goodwill or goodwill amortization reported or, if Compustat records missing values for both items, nonzero intangibles amortization, for fiscal years ending after December 15, 2002. All ratios are in decimal, not percent, form. Many firms report a combined balance sheet item for goodwill and other intangibles, resulting in a missing value for the goodwill asset on Compustat and corresponding low sample size for the ratios involving the goodwill asset amount.

Variable	N	Mean	Std Dev	10th %ile	Median	90th %ile
Panel A: Firm-years with goodwill impairment charges (N=532)						
Goodwill impairment charge before tax to year –1 assets	519	-0.6238	8.8178	-0.3491	-0.0496	-0.0015
Goodwill impairment charge after tax to year –1 assets	487	-0.6373	9.1028	-0.2774	-0.0389	-0.0011
Goodwill impairment charge before tax to year –1 goodwill	266	-1.0690	3.4536	-1.2221	-0.4580	-0.0126
Goodwill impairment charge after tax to year –1 goodwill	244	-0.8401	2.3650	-1.0350	-0.3240	-0.0101
Goodwill to year –1 assets	331	0.1672	0.1794	0.0000	0.1052	0.4294
Intangibles to year –1 assets	476	0.2355	0.2196	0.0084	0.1714	0.5445
Year –1 goodwill amortization to year –1 sales	158	0.0107	0.0632	0.0000	0.0000	0.0093
Year –1 intangibles amortization to year –1 sales	267	0.2069	0.8044	0.0000	0.0188	0.3016
Subsector median RNOA (Nissam & Penman, 2001, with Graham tax rate)						
Current year	528	-0.2179	2.5236	-0.3373	-0.0360	0.0850
Mean of previous five fiscal years	531	-0.2231	0.4372	-0.8231	-0.0485	0.0722
Rate of change in sales, year –1 to 0	489	2.2639	27.0270	-0.4786	-0.0571	0.4916
ΔE: Change in income before extraordinary items, divided by year –1 assets	496	0.1278	3.3058	-0.3967	-0.0312	0.5785
Change in operating net cash flow, divided by year –1 assets	487	-0.0069	1.2254	-0.1324	0.0020	0.2347
Rate of change in cash dividends to common, year –1 to 0	507	0.0322	0.3859	0.0000	0.0000	0.0000
Bath: ΔE when < 0 and < median of all such negative values on Compustat	496	-0.2921	1.5874	-0.3967	-0.0092	0.0000
Smooth: ΔE when > 0 and > median of all such positive values on Compustat	496	0.4203	2.8570	0.0000	0.0000	0.5785
Dummy variable: 1 = firm has long–term debt but no S&P debt rating	532	0.4474	0.4977	0.0000	0.0000	1.0000
Dummy variable: 1 = firm reports a net loss in year 0	519	0.7977	0.4021	0.0000	1.0000	1.0000
Dummy variable: 1= firm recorded an accounting change effect for SFAS 142	532	0.1917	0.3940	0.0000	0.0000	1.0000

Table 5 continued

Variable	N	Mean	Std Dev	10th %ile	Median	90th %ile
Panel B : Firm-years with no goodwill impairment charge (N=7553)						
Goodwill to year –1 assets	6268	0.1658	0.1602	0.0112	0.1170	0.3957
Intangibles to year –1 assets	7428	0.1911	0.1913	0.0108	0.1291	0.4700
Year –1 goodwill amortization to year –1 sales	5830	0.0734	2.7750	0.0000	0.0000	0.0166
Year –1 intangibles amortization to year –1 sales	3976	0.0587	1.1192	0.0000	0.0028	0.0441
Subsector RNOA (Nissam & Penman, 2001, with Graham tax rate)						
Current year	7533	0.0214	0.9271	-0.1306	0.0549	0.1276
Mean of previous five fiscal years	7548	-0.1554	0.9401	-0.5744	0.0116	0.1292
Rate of change in sales, year –1 to 0	7311	1.0192	60.4556	-0.1266	0.0728	0.3957
ΔE: Change in income before extraordinary items, divided by year –1 assets	7330	-0.2544	18.7613	-0.0617	0.0079	0.1368
Change in operating net cash flow, divided by year –1 assets	6511	-0.1916	11.2507	-0.0935	0.0077	0.1122
Rate of change in cash dividends to common, year –1 to 0	7451	0.1617	1.5234	0.0000	0.0000	0.1428
Bath: ΔE when < 0 and < median of all such negative values on Compustat	7330	-0.3288	18.7516	-0.0616	0.0000	0.0000
Smooth: ΔE when > 0 and > median of all such positive values on Compustat	7330	0.0727	0.5607	0.0000	0.0000	0.1368
Dummy variable: 1= firm has long–term debt but no S&P debt rating	7553	0.4946	0.5000	0.0000	0.0000	1.0000
Dummy variable: 1 = firm reports a net loss in year 0	7537	0.3054	0.4606	0.0000	0.0000	1.0000
Dummy variable: 1= firm recorded an accounting change effect for SFAS 142	7553	0.1623	0.3688	0.0000	0.0000	1.0000

Table 6

Selection model regressions to explain goodwill impairment charges

The dependent variable for the probit regression is a binary variable where a 1 indicates that a nonzero goodwill impairment charge occurs in the firm-year. The dependent variable for the ordinary linear regression is the pretax impairment (negative if there is a charge) divided by year –1 total assets. The two regressions are estimated simultaneously as a Heckman-type selection model system using maximum likelihood. The subsector RNOA is the median, across all firms in the same NAICS 3-digit subsector, of return on net operating assets as defined by Nissim and Penman (2001); the five-year version is averaged across the years for each firm before taking the median. Changes in sales and dividends are rates of change. Change in net income is before extraordinary items and is divided by year –1 assets. The big bath (smoothing) reporting proxy is the Δnet income as defined above provided that it is negative (positive) and below (above) the median of all such negative (positive) values reported by publicly traded firms on Compustat for the same fiscal year, and zero otherwise.

	Predicted sign Economic/EM	(1)	(2)
Probit regression variable			
Intercept		–2.071 (–39.16***)	–2.061 (–40.17***)
Subsector RNOA years –5 through –1	? / NA	0.020 (0.53)	
Dummy variable for unrated debt	NA / –	–0.085 (–1.68)	–0.094 (–1.89)
Dummy variable for net loss	+ / +	0.953 (18.12***)	0.961 (18.54***)
Intangibles to year –1 assets	+ / +	0.083 (0.66)	0.138 (1.14)
Dummy variable for accounting change	NA / NA	0.079 (1.24)	
Ordinary linear regression variable			
Intercept		–0.181 (–0.73)	–0.193 (–0.82)
Δ sales, year –1 to 0	+ / 0	0.000 (0.15)	0.000 (0.15)
Δ dividends, year –1 to 0	+ / 0	0.001 (0.01)	
Δ net income, non-bath, non-smooth	+ / 0	–0.364 (–0.05)	
Subsector RNOA, year 0	? / 0	–0.002 (–0.11)	–0.007 (–0.05)
"Big bath" reporting proxy	0 / +	0.656 (16.94***)	0.656 (17.15***)
Smoothing reporting proxy	0 / –	–0.150 (–5.38***)	–0.150 (–5.39***)

*, ** and *** indicate statistical significance at the 5%, 1%, and .1% levels, respectively.