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## Is good will impairment loss meaningful information?

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### Cover Page Footnote

Although this paper focuses on accounting issues in the United States of America, I believe it will have a wider appeal to both researchers and students of accounting and finance in today's global economy. Especially with the ongoing efforts in Pakistan to privatize Government-owned enterprises, recognition of goodwill and its potential impairment is a topic that should be of interest to our local readers. Editor

**ARTICLE**

## **Is Goodwill Impairment Loss Meaningful Information?**

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**Editor**

### **ABSTRACT**

This study investigates information content of goodwill impairment loss reported under current GAAP (Generally Accepted Accounting Principles). It explains the market's negative reaction to goodwill impairment losses. The sequential specification approach is used to analyze the factors affecting the level of normalized stock returns. Cumulative effect and change in debt to total assets were found to be important variables in determining the level of normalized stock returns. The finding suggests that while goodwill write-off may not affect cash flows or tangible assets, it provides information about future change in the earnings potential and increased degree of risk to solvency of the firm.

**Key words:** goodwill, impairment loss, SFAS 141, SFAS 142, business combinations, goodwill write-off

### **INTRODUCTION**

The Financial Accounting Standards Board (FASB) issued SFAS 141, *Accounting for Business Combinations* (FASB 2001a), and SFAS 142 (FASB 2001b), *Accounting for Goodwill and Intangible Assets* in June 2001 bringing about a major overhaul of the accounting rules for mergers and acquisitions. The purpose of this

study is to empirically investigate the information content of goodwill impairment loss reported under the provisions of these rules.

SFAS 141 addresses business combinations completed through acquisitions of assets or equity interests and supersedes APB Opinion No.16 as well as superseding or amending a number of interpretations of APB No.16. Under the provisions of SFAS 141, pooling of interests accounting is no longer allowed. Companies must use the purchase method in accounting for business combinations and must recognize and disclose goodwill as an asset on financial statements if the acquisition cost exceeds the fair value of separately identifiable assets. Thus, SFAS 141 standardizes the procedure for identifying and recognizing goodwill and makes it more transparent for the users of financial statements.

SFAS 142 supersedes APB Opinion No. 17 and prescribes different accounting treatment for intangible assets having a finite life and those having an indefinite life, such as goodwill. In case of goodwill, periodic amortization is disallowed. Companies are required to conduct an annual impairment test to determine if goodwill has suffered an apparent permanent decline in value and, if so, this loss is reported currently on the income statement. This is a significant departure from the traditional purchase method where recognized goodwill was amortized.

These changes are indeed significant and the result of intense debate for several years. The pooling of interest method has been the target of extensive criticism in accounting circles. Critics have argued that the financial statements produced under the two methods (purchase and pooling) depict very different pictures of the combined companies. The pooling method fails to disclose the fair values exchanged in the combination and, thus, hinders investors in properly assessing the rate of return on investment. The pooling method is only used by a small minority of companies worldwide (Radebaugh and Gray 2002, 166). Therefore, international accounting standards do not allow pooling of interest method which makes performance comparison among multinational entities extremely difficult (Schroeder, Clarke, & Cathey, 2001 p. 478).

Pooling of interest method, nonetheless, has not been without supporters. The strongest argument in favor of the pooling method was that some business combinations were mergers of equals where none of the combining entities survived. Furthermore, it was argued that elimination of the pooling method would discourage companies that wished to merge for sound economic reasons. Until recently, senior financial executives were evenly split between the purchase and pooling of interest methods (Davis 2000, 73).

SFAS 141 and SFAS 142 have been in effect for a period of more than three years. Questions about the impact of the two pronouncements need to be answered. Most

important are questions relating to the impact of the recognition of goodwill impairment loss. Would recognition of such loss be detrimental to the financial performance and position of U.S. companies? Given that a goodwill impairment loss is a non-cash charge, will the market ignore it or factor it into the value of the stock?

Due to the economic slump and the huge prices U. S. companies paid for acquisitions during the late-1990s boom (Rapoport and Weil 2002, C1), companies, possibly have huge charges in the year of implementation to write off goodwill. While it is true that amortization and impairment loss are both non-cash items, amortization is a constant and relatively small amount over a time period and goodwill impairment loss is an unpredictable and much larger amount.

To date, the articles written on the impact of recognizing loss from goodwill impairment have been speculative (for example, Colquitt and Wilson 2002 and Wermert 2003); or have dealt with discretionary announcements of goodwill write-off (for example, Hirschey and Richardson, 2003). In this study, we present empirical evidence about the information content of actual goodwill write-offs pursuant to the implementation of SFAS 141 and SFAS 142.

The remainder of the paper proceeds as follows. First, we provide a background of the changes in goodwill accounting and discuss the details of the impairment test under SFAS 142 in order to provide a basis for the development of research hypothesis and methods of testing them. The second section presents a review of previous studies. Conceptual and empirical framework is presented in the third section. A discussion of the results is presented in the fourth section and conclusion is presented in the final section.

## **BACKGROUND**

The concept of goodwill is well established in accounting literature. However, its interpretation and meaning has evolved over the years. Yang (1927, 29) had described goodwill as an intangible asset, arising out of an acquisition, that contributes to or accompany unusual earning capacity. Later goodwill was described as good and advantageous relations of a proprietor with customers (Catlett and Olson 1968, 9). Over time, the FASB and the AICPA have refined and clarified the definition of goodwill to bring it in line with extant concepts.

Goodwill is recognized pursuant to acquisition of one business entity by another entity and is interpreted as the residual value of the purchase price after subtracting the fair value of the net identifiable assets of the acquired company. Consequently, non-quantifiable factors as manufacturing processes, convenient or strategic locations, brand loyalty, and superior management that contribute to an existing business's higher than average earning potential were incorporated in the definition of goodwill.

In its November 19, 1997 meeting, the FASB affirmed that goodwill met the definition of assets as stipulated in SFAC No. 6 (FASB 1985) and that it was the residual value of purchase price after the various identifiable net assets acquired are recorded. In the light of this perspective, Johnson and Petrone (1998, 295) documented the following six components that were being included in goodwill: 1) the excess of the fair values over the book value of acquired assets at the date of acquisition, 2) the fair value of other net assets not recognized by the acquired entity at the date of acquisition, 3) the fair value of the “going concern” element of the acquired entity, 4) the fair value of expected synergies from combining the acquiring company’s and acquired company’s businesses and net assets; 5) Overvaluation of the consideration paid the acquiring company attributed to possible errors in valuing the purchase consideration, such as the current market price of the stock issued might be higher than the cash sale of stock; and 6) Overpayment (or underpayment) by the acquiring company which may occur “in the course of bidding” for the acquired company. SFAS 141 defined “core goodwill” as including the fair value of the “going concern” element of the acquired entity and the fair value of expected synergies from combining the acquiring company’s and acquired company’s businesses and net assets

Assets should normally satisfy three fundamental criteria: measurability, relevance, and reliability. However, measurability is a difficult criterion to satisfy since goodwill is not a separately identifiable and exchangeable asset. However, the FASB held that exchangeability was not a necessary criterion for asset definition. SFAS 142 addressed the problem of subsequent recognition and measurement of goodwill. The FASB considered four alternatives for subsequent recognition and measurement: 1) write-off all or a portion of goodwill immediately, 2) report goodwill as an amortizable asset, 3) report goodwill as an asset that is not amortized but is reviewed for impairment and 4) report goodwill as an asset, a portion of which is amortized and a portion of which is not.

The Board chose the third alternative based on the premise that “not all goodwill declines in value and that goodwill that does decline in value rarely declines on a straight-line basis” (FASB 2001b, par. B79). In field visits conducted by the Board during October-November 2000, fourteen companies had also preferred the non-amortization approach.

Relevance of goodwill information has been well established in institutional studies (AICPA 1994 and AIMR 1993) and research published in academic and professional journals. For example, Davis (1992), Chauvin and Hirschey (1994), McCarthy and Schneider (1995), Jennings et al. (1996), Hennings, Lewis, and Shaw (2000) validated the finding of early researchers that the market perceives goodwill as an economic resource.

The Board also decided that there was no serious damage to reliability of goodwill numbers since component one and two as well as five and six were excluded from core goodwill, (FASB 2001a, par. B123 - 131)

### **GOODWILL IMPAIRMENT TEST**

SFAS 142 describes impairment as the condition that exists when the carrying amount of recorded goodwill exceeds its implied fair value (FASB 2001b, par. 18). To determine goodwill impairment, a two-step process is followed. First, the fair value of the reporting unit is determined. If the fair value exceeds its carrying value, no further work is required. Otherwise a second step is necessary to compute the implied fair value of goodwill. This is accomplished by deducting the fair value of all separately identifiable net assets (excluding goodwill) from the fair value of the reporting unit.

If the implied fair value of the goodwill is less than its carrying amount, the difference is the goodwill impairment loss which is recognized currently as a separate item in the income statement. The implied fair value becomes the new carrying value of goodwill for that reporting unit.

### **FAIR VALUE MEASUREMENT**

Fair value is defined in SFAS 142 as the amount at which the unit as a whole could be bought or sold in a current transaction between willing parties (FASB 2001b, Par 23). This definition suggests that the reporting unit could be purchased separately in business combinations. However, if quoted market prices are not available, other estimates of fair value should be made. These include prices for similar assets and liabilities and the results of other valuation techniques. The fair value of each reporting unit does not need to be recomputed every year for the annual impairment test and can be carried forward from year to year if no significant change occurs.

Allocation of the acquisition costs to reporting units and estimation of fair values of reporting units may prove to be quite challenging. It is possible that some companies may strategically allocate acquisition costs to reporting units in order to shield themselves from future goodwill impairment. They may practice the big bath strategy by linking as much goodwill as is supportable against a poorly performing unit and disclosing a potential impairment loss in the first year. Therefore, cost allocations and fair value determination under SFAS 141 and SFAS 142 may be highly subjective.

### **TRANSITIONAL IMPAIRMENT TEST**

Companies are required to complete a transitional impairment test of all goodwill within the first year of adoption. SFAS 142 allows the accounting of the

impairment loss as a change in accounting principles. Companies that succeed in determining and comparing the fair value of the reporting unit to the reporting unit's carrying value within six months of adoption are allowed to treat any resulting impairment loss as cumulative effect of a change in accounting principles. This suggests that some core income, i.e. income from continuing operations for the year ended December 31, 2002, may not reflect the goodwill impairment loss. Cumulative effect of a change in accounting principles affects only net income, since it is presented as a line item above net income.

### **PRIOR RESEARCH**

For the past several years, research on goodwill was focused on the impact of goodwill amortization. Vincent (1997) studied the information content of goodwill amortization in the context of pooling of interests versus purchase. The findings of this study suggest that investors adjust the two methods comparable by adding back amortization of goodwill to income.

Lindenberg and Ross (1999) found that investors appeared to ignore amortization of goodwill reported under the purchase method and treated it differently from depreciation. The results of their study show that price earnings increased with goodwill amortization. This indicates that increase in goodwill amortization expense appears to be offset by the increase in price earnings.

Hopkins, Houston, and Peters (2000) arrived at a similar conclusion. The results of their study indicated that analysts appear to impute the goodwill amortization under the purchase method by backing it out and treat the total goodwill as a one-time charge in order to discount the effects of a non-cash charge.

Moehrle, Reynolds-Moehrle, and Wallace (2001) showed that the relative informativeness of earnings before amortization and earnings before extraordinary items did not differ significantly. They also found that both earnings before amortization and earnings before extraordinary items were more informative than cash flow from operations. As such, they concluded that goodwill amortization disclosures were not decision useful. Similarly, Jennings, LeClere, and Thompson (2001) reported that earnings before goodwill amortization explain significantly more of the observed distribution of share prices than earnings after goodwill amortization and when share valuations are based upon earnings alone, goodwill amortization simply adds noise to the measure.

There are two possible explanations for the finding in past research studies that investors tend to ignore goodwill amortization. First, because goodwill does not exist under the pooling-of-interests method, investors may be trying to equate the accounting numbers generated from the two business combination methods. Alternatively, investors may be ignoring goodwill amortization because it is a non-



cash charge. Moreover, investors may disregard amortization of goodwill because they may consider it to be a double hit on the company's income statement as business firms generally incur out-of-pocket expense of maintaining the value of goodwill.

Hirschey and Richardson (2002) analyzed market-value effects of discretionary goodwill write-off announcements and found a significant association between stock price decline and such announcements. Based on these results they maintain that goodwill write off decisions provide information regarding important future changes in company earnings.

In their 2003 study, Hirschey and Richardson applied the same data set to provide a “professional adaptation and extension” of their 2002 study (2003, footnote 1, p. 84). They found that goodwill write-offs do not link to contagious stock reactions; they are “essentially a company-specific event” (*Ibid.*, p.81). Comparison between simple versus messy announcements indicated that in general the stock price experienced a smaller effect when the announcements were just goodwill write-offs as compared to situations where good will write off announcements were accompanied by other announcements.<sup>1</sup> They found “statistically significant negative abnormal returns tied to goodwill write-off announcements” (*Ibid.*, p. 84). They also found “a statistically significant link between the magnitude of negative valuation effects during the announcement window and the size of negative returns in the post-announcement period.” (*Ibid.*).

The larger the size of the negative post-announcement effects, the more negative was the stock reaction to goodwill write-off announcements. They concluded that negative valuation effects during the announcement period indicates that goodwill write-off announcements signal to the investors the diminished potential future economic benefits to the company. Moreover, goodwill write-off announcements are “associated with a further fundamental deterioration in the market value of the company during a subsequent year-long period” (*Ibid.*). Investors appear to under-react to the importance of goodwill write-off announcements.

While Hirschey and Richardson (2002 & 2003) focused on goodwill write-off announcements, in the study presented here, we report the market's reaction to the actual disclosure of goodwill impairment losses in the company's financial statements.

## CONCEPTUAL AND EMPIRICAL FRAMEWORK

The apparent inconsistency between the market's disregard of goodwill amortization and the market's negative reaction to goodwill impairment losses can be rationally

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<sup>1</sup> It is noteworthy that they did not find significant value relevance by industry classification.

explained as follows. First, the amount of goodwill impairment loss would generally be much larger than the amount of periodic goodwill amortization. Therefore, it is likely to have a significant impact on income and total assets. The write-down of goodwill will lower the book value of the company and increase the debt to total assets ratio. The presence of such damaging information may depress the market price of the company stock.

Second, the units reporting goodwill impairment loss are most likely the reporting segment of a firm. Goodwill amortization, on the other hand, is reported on the consolidated financial statements of the firm. Since segment reporting is relatively more relevant in gauging the risk and return of a firm. Therefore, having goodwill impairment losses measured from each reporting unit produces more incisive and valuable information to investors.

Finally, investors find information about goodwill impairment loss more value relevant because this computation is based on the fair value of the goodwill of the reporting unit, whereas the amount of periodic goodwill amortization is purely arbitrary and involves double counting for recognizing both amortization and expenditure in maintaining goodwill.

The expenditures incurred in maintaining goodwill are likely to be more relevant in the computation of fair value of goodwill to test for impairment. Conservatism principle requires such expenditures, which can be construed as costs of restoring the purchased goodwill, to be expensed. In addition, such goodwill may be interpreted as internally generated since it is inherent in the reporting unit after the purchase. Unless goodwill is well maintained, the fair values of the reporting unit and goodwill may be less than their respective carrying amounts. Hence, the internally generated goodwill which is incorporated in the fair value of goodwill computation will be used in the computation of impairment. Any goodwill impairment is, therefore, computed net of the internally generated goodwill. This is a significant factor in the analysis of goodwill impairment. However, further analysis on this factor is not possible owing to the lack of separate disclosure of this information in the financial statements

Since the year 2001 was the first year of implementation of SFAS 142, a large number of companies announced goodwill write-off and indicated that they take advantage of taking a “big bath” by accounting the impairment loss as a change in accounting principles (Hirschey and Richardson 2003, 77). We, therefore, test the following null hypothesis:

H<sub>0</sub>: There is no information content in goodwill impairment losses reported as cumulative effect

Previous researchers have studied relative informativeness of accounting disclosures by observing association between accounting measures and stock returns (Amir, Harris, and Venuti 1993, 230). We utilized the sequential specification approach (Studenmund, 1997, 188). Gu and Lev (2004) used a similar approach in determining information content of royalty income. The following regression models were used to analyze the factors affecting the level of normalized stock returns for firms where goodwill impairment loss is reported as cumulative effect.

Model 1:  $ret_{i,t} = \beta_{1,0} + \beta_{1,1} ni_t + \beta_{1,2} ni_{i,t-1} + \epsilon_{i,t}$

Model 2:  $ret_{i,t} = \beta_{2,0} + \beta_{2,1} ni_t + \beta_{2,2} ni_{i,t-1} + \beta_{2,3} ce_{i,t} + \epsilon_{i,t}$

Model 3:  $ret_{i,t} = \beta_{3,0} + \beta_{3,1} ni_t + \beta_{3,2} ni_{i,t-1} + \beta_{3,3} ce_{i,t} + \beta_{3,4} pchdtota_{i,t} + \epsilon_{i,t}$

Model 4:  $ret_{i,t} = \beta_{4,0} + \beta_{4,1} ni_t + \beta_{4,2} ni_{i,t-1} + \beta_{4,3} ce_{i,t} + \beta_{4,4} pchdtota_{i,t} + \beta_{4,5} gwl_{i,t} + \epsilon_{i,t}$

Model 1 is the benchmark model against which R<sup>2</sup> values will be compared to determine if introduction of additional variables improves the explanatory power of the model. Prior period net income has been included in the regression models to capture the association between normalized stock returns and that part of the current period's net income that is unpredictable from the prior year's earnings (Gu and Lev 2004, 5). Information content is determined by examining the t-statistic and by comparing the sum of squared errors from successive pairs of models using the F-test.

Names and detailed description of variables are shown Table 1.

**Table 1. Names and Description of Variables**

Variable	Description
<b>Dependent Variable</b>	
$ret_{i,t}$	Normalized stock returns for firm “i” in period t.
<b>Independent Variables</b>	
$ni_t$	Reported net income for firm “i” in period t.
$ni_{i,t-1}$	Reported net income for firm “i” in period t-1.
$ce_{i,t}$	Good will loss reported as cumulative effect on income for firm “i” in period t.
$pchdtota_{i,t}$	Percentage change in debt to total assets ratio for firm “i” in period t.
$gwl_{i,t}$	Goodwill impairment loss for firm “i” in period t reported in operating income

## DATA AND SAMPLE COMPANIES

Data was collected from the 10K filed with the Securities Exchange Commissions of the 2002 Fortune 500 firms that meet the following criteria:

- 1) Financial statements are available in the Lexis-Nexis database for 10K.
- 2) Report of goodwill impairment loss separately as a line item or a component in the cumulative effect of change in accounting principle.
- 3) Stock is traded on the New York Exchange.

*Using these criteria a sample of 126 companies was selected. Sample profile is shown in Table 2.*

**Table 2: Distribution of Sample Companies**

SIC Division	Number of Companies
Mining	1
Manufacturing	49
Transportation, Communications, Electric, Gas, and Sanitary Services	31
Wholesale Trade	7
Retail Trade	15
Finance, Insurance, and Real Estate	8
<b>Total</b>	126

After the identification of sample companies, stock price three months after fiscal year-end were collected from the Yahoo.com historical quotes database. Table 3 contains the sample statistics for the variables included in the different models.

**Table 3. Descriptive Statistics**

Variable	Mean	Standard Deviation
<b>Dependent Variable</b>		
ret <sub>i,t</sub>	-.27	.32

### Independent Variables

$ni_t$	-77.12	528.32
$ni_{i,t-1}$	-82.10	839.78
$ce_{it}$	-48.87	301.24
$pchdtota_{i,t}$	.03	.08
$gwl_{i,t}$	18.85	175.19

### DISCUSSION OF RESULTS

Table 4 presents the parameter estimates obtained from the Ordinary Least Squares estimation for models 1-4.

**Table 4. Parameter Estimates from Regressions Of Normalized Stock Returns When Goodwill Impairment Loss Is Reported As Cumulative Effect.**

	Model 1	Model 2	Model 3	Model 4
Constant	-2726 (-10.25)**	-2856 (-10.80)**	-2644 (-9.68)**	-2650 (-9.49)**
$ni_t$	.0001 (2.17)**	.0009 (2.94)**	.0009 (3.02)**	.0009 (2.82)**
$ni_{i,t-1}$	-.0002 (-4.98)**	-.0002 (-5.64)**	-.0002 (-5.81)**	-.0002 (-5.68)**
$ce_{it}$		-.0014 (-2.61)**	-.0016 (-3.03)**	-.0016 (-3.00)**
$pchdtota_{i,t}$			-1.158 (-2.47)**	-1.124 (-2.22)**
$gwl_{i,t}$				.0001 (0.12)
Adjusted $R^2$	0.17	0.20	0.23	0.23
F [2, 123]	13.39			

F [3,122]		11.62		
F [4,121]			10.60	
F [5,120]				8.41
Durbin-Watson statistic	1.99	1.94	1.93	1.94

Asymptotic t-values are in parenthesis.

\*\* Statistically significant at 5%.

As expected,  $R^2$  value improved from 0.17 for the benchmark model to 0.20 when the cumulative effect variable was added in model 2. When the variable for percentage change in the ratio of debt to total assets was introduced in model 3,  $R^2$  value further improved to 0.23. Introduction of the variable for goodwill impairment loss in model 4 did not improve the  $R^2$  value, but all  $F$ -ratios were larger than the 95 percent critical value of 1.88. Thus, we rejected the hypothesis that all slopes in the regression equations were zero.

Outliers may have a strong undesirable influence on the OLS estimates that could lead to inaccurate inferential statements. The presence of outliers produces a “fat-tailed” distribution of residuals different from the normal distribution. So, a test for outliers is basically a test for normality of the OLS residuals. We performed a Jarque-Bera test for normality of the OLS regression residuals and concluded that the OLS residuals followed a normal distribution, therefore discarding the presence of outliers. We also performed White’s general test for heteroskedasticity. The chi-squared statistics in all models were not significant at 5% level. Therefore we accept the hypothesis of homoskedasticity and concluded that the data were not heteroskedastic. We also measured the interrelationships among the independent variables and concluded that multicollinearity was not a serious problem in this study. Finally, the Durbin-Watson statistics in all models were greater than the upper critical values of these statistics. Consequently, we accepted the hypotheses of no positive autocorrelation and concluded that there was no positive autocorrelation.

In general, the analysis showed that most of the independent variables included in the models were statistically significant at the level of 95% or better, suggesting that these variables are important in determining the level of normalized stock returns. Results indicate that  $ni_t$  has a positive influence on the level of normalized stock returns for firms, while  $ni_{t-1}$  has a negative sign. This is consistent with the results in Gu and Lev (2004).

Also, these OLS regression results are characteristic of all firms in the sample. To prove this point, we split the sample between manufacturing and non-manufacturing firms and performed a Chow test to test the null hypothesis that the OLS regression coefficients were the same for manufacturing and non-manufacturing firms. The  $F$

statistics in all models were not significant at the 5% significance level. Therefore we accepted the null hypothesis and concluded that the regression coefficients were the same for American manufacturing and non-manufacturing firms. Hirschey and Richardson (2002, 2003) found that negative information effect of goodwill write-off announcements were relevant for all manufacturing and non-manufacturing firms included in their sample.

The variables for cumulative effect ( $ce_{i,t}$ ) and change in debt to total asset ratio ( $pchdtota_{i,t}$ ) have negative signs. Since cumulative effect is an expense, it is bound to have a negative influence on the returns. Moreover, goodwill impairment signals erosion of future earnings potential. Also an increase in the debt to total asset ratio signals a higher solvency risk for the firm thereby depressing stock prices.

Specifically considering regression results of model 4, we found that a one percent increase in  $ni_t$  would increase normalized stock return by 0.26 percent and a one percent increase in  $ni_{t-1}$ ,  $ce_{i,t}$  and  $pchdtota_{i,t}$  would decrease normalized stock returns by 0.06 percent, 0.29 percent, and 13.0 percent respectively (these changes were calculated at the sample mean values of the three variables).<sup>2</sup>

## CONCLUSION

Results of this study empirically validate earlier expectations (Wermert 2003 and Hirschey & Richardson 2003). Results also indicate that while goodwill write-off may not affect cash flows or tangible assets, it provides information about future change in the earnings potential and increased degree of risk to the solvency of the firm.

Unlike goodwill amortization which is computed for the consolidated entity, goodwill impairment loss is computed at the segment level or a level below the segment level. This disaggregated information provides a better means of assessing the overall performance, risks, and prospects of the firm. Research conducted by Balakrishnan, Harris, and Sen in 1990 and Behn, Nichols, and Street in 2002 found segment disclosures outperformed consolidated data in the accuracy of predicting earnings. Hence, the reporting of goodwill impairment losses by segment could be a significant contributor in explaining the overall results.

Future research on this topic may also consider the uncertainty related to the effect of prospective goodwill impairment losses on stock returns. Theories of determination of expectations such as adaptive expectations, rational expectations, or a combination of the two could be used to model how firms form their expectations on

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<sup>2</sup> We also ran regressions for companies that disclosed goodwill impairment loss as line item in arriving at operating income and found identical results.

future amount of goodwill impairment loss and how they use newly available information to modify their predictions about future values. These theories could also be to analyze the effects of net and/or operating income (whose future values are also uncertain) on stock returns. Further research can also use time-series analysis as more information on the relevant variables becomes available.

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*I know of no more encouraging fact  
than the unquestionable ability of man  
to elevate his life by conscious endeavor*

HENRY DAVID THOREAU