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Evidence from Goodwill Non-impairments on the Effects of Unverifiable Fair-Value Accounting

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Abstract

SFAS 142 requires firms to use unverifiable fair-value estimates to determine goodwill impairments. Standard setters suggest managers will use the discretion given by such estimates to convey private information on future cash flows, while agency theory predicts managers will use the discretion opportunistically. We test these alternative hypotheses using a sample of firms with market indications of goodwill impairment (firms with book goodwill and two successive years of book-to-market ratios above one). We find non-impairment of goodwill is increasing in firm characteristics predicted to be associated with greater managerial discretion. We also find evidence that the discretion is being used in a manner consistent with agency-based predictions. The evidence does not confirm managerial discretion is being used to convey private information.

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1. Introduction

Fair-value accounting records assets and liabilities at estimates of their current values. When those estimates are based on observable prices from active markets, they are verifiable. Some recent FASB standards require managers to estimate fair values of assets, liabilities, and reporting units that have no or thinly traded markets. Since these estimates cannot be "objectively characterized as true or false" (*Ollman v. Evans*, 750 F.2d 970, D.C. Cir., 1984), they are unverifiable. Standard setters argue such unverifiable estimates allow managers to convey private information on future cash flows.[1] In contrast, agency theory predicts managers (absent reputation costs) will use the unverifiable estimates to opportunistically manage financial reports.[2] We test these alternative predictions in this paper.

We investigate managers' implementation of a recent and prominent fair-value standard that uses unverifiable management estimates: SFAS 142, accounting for acquired goodwill (FASB, 2001). The standard introduced a goodwill impairment test that allows, for example, managers of single-reporting-unit firms to use hypothetical firm values that exceed the firms' liquid market values when determining whether goodwill is impaired. In a sample of firms with market indications of goodwill impairment, we examine whether managers' decisions to avoid goodwill write-offs are associated with firm financial characteristics predicted to increase managers' discretion under SFAS 142 (Ramanna, 2008). The results are consistent with avoidance of goodwill impairment

[1] This is the implicit assumption in standards that promote the use of unverifiable fair-value estimates in financial reports. For example, in explaining how SFAS 142, accounting for acquired goodwill, improves financial reporting, the FASB (2001, p. 7) argued that the standard will provide "users with a better understanding of the expectations about and changes in [goodwill and other intangible assets] over time."

[2] Increased monitoring can mitigate opportunism; however, such monitoring is difficult to specify because it is unlikely to be based on contracting: unverifiable estimates are, by definition, non contractible.

increasing in those characteristics. We also examine whether goodwill non-impairment is associated with managers' private information on future cash flows (as standard setters expect) and/or with agency-based motives. We do not find evidence to confirm the private information argument, but we do find evidence consistent with the agency argument.[3]

To generate the sample with market indications of goodwill impairment, we begin with a sample of firm-years that have both: (i) book goodwill; and (ii) equity-market-values greater than equity-book-values. From this sample, we retain only observations that end each of the two subsequent fiscal years with book-to-market ratios (BTM) above one (where BTM is calculated before the effect of any goodwill impairment). The condition BTM > 1 for two consecutive years suggests goodwill impairments are expected by the market. We investigate the extent of, and determinants of, goodwill non-impairment at the end of the second fiscal year, conditional on the firms having non-zero goodwill balances at the beginning of that fiscal year.

There are 124 firm-years on COMPUSTAT that meet our sample selection criteria, i.e., 124 firm observations with non-zero goodwill that are in their second consecutive fiscal year of BTM > 1. All observations are from the years 2003 through 2006.[4] The relatively small sample size is due in part to firm attrition (firms with BTM > 1 are more likely to be acquired, delisted, etc., as discussed later). The frequency of goodwill non-impairment in sample firm-years (i.e., the second fiscal year) is 69%.

[3] Throughout the paper, we assume that managers are responsible for firm decisions: if managers' incentives are not perfectly aligned with those of shareholders, firm decisions will reflect managers' interests.

[4] Mandatory adoption of SFAS 142 is required for fiscal years beginning after December 15, 2001. We exclude the initial adoption year (2002) because of the likely effects of transition rules (described later). Years beyond 2006 are not included since these data were not available as of this writing.

Further, 57% of firms do not impair in either the first or the second fiscal years with BTM > 1.

It is possible that managers of sample firms avoid goodwill write-offs because they have (or believe they have) private information on positive future cash flows. We identify firms likely to have favorable private information as those firms with either positive net share-repurchase activity or positive net insider buying. Both activities suggest management believes the firm is undervalued. We find that only 41% of the sample shows evidence of favorable information asymmetry (per the definition above). We next examine whether sample firms with favorable information asymmetries have a higher non-impairment frequency than all other sample firms. If this is the case, the evidence can still support the argument that managers' private information drives non-impairments. We find the non-impairment frequency among firms with positive information asymmetry (71%) is statistically indistinguishable from non-impairment frequency among all other firms (68%). Overall, the data do not confirm that the high frequency of non-impairment in the sample is due to management's possession of favorable private information.

To investigate whether non-impairment is associated with agency-based motives, we test for the cross-sectional variation in goodwill write-offs with proxies for CEO compensation concerns, CEO reputation concerns, asset-pricing concerns, exchange-delisting concerns, and concerns relating to debt covenant violation. Beatty and Weber (2006) predict from the agency-theory literature that goodwill write-offs in the initial

adoption year of SFAS 142 vary in these motives. We find evidence of goodwill impairments decreasing in CEO reputation and debt-covenant violation concerns.[5]

Even with agency-based motives to avoid timely goodwill write-offs, managers are unable to do so if SFAS 142 does not afford them such flexibility. By studying the mechanics of SFAS 142, Ramanna (2008) identifies several firm characteristics likely to facilitate discretionary non-impairment. These financial characteristics are: (1) the number and size of a firm's business units; and (2) the proportion of a firm's net assets that are unverifiable. The specifics of how these characteristics interact with SFAS 142 rules to promote non-impairment are described in the following section. In univariate and multivariate tests, we find goodwill impairments decrease in both number and size of business units and the proportion of unverifiable assets. The results are robust to a variety of empirical proxies for the two factors (as described later in the paper). The multivariate tests control for potential information asymmetry (between managers and shareholders), agency-based motives, and economic fundamentals (such as fiscal year stock returns).

The results in this paper are consistent with managers exploiting unverifiable fair-value-based discretion in SFAS 142 to avoid timely goodwill write-offs in circumstances where they have agency-based motives to do so (Watts, 2003; Ramanna, 2008). The results do not confirm standard setters' arguments that managers will use SFAS 142 to convey private information on future cash flows. The results are based on a limited sample of firms, in particular firms with book goodwill and with two successive years of

[5] Our primary proxy for CEO reputation is CEO tenure (long-tenure CEOs are more likely to have initiated the mergers that generated the now-impaired goodwill and so are less likely to authorize write-offs). Avoiding timely impairments to prevent debt covenant violations can also be motivated by CEO reputation concerns (in addition to transferring wealth from debtholders to shareholders) since failure to do so can be perceived as managerial incompetence.

BTM > 1. Goodwill in such firms is likely to be impaired and managers' non-recognition of the impairment is more difficult to justify.

We intentionally exclude negative book-value firms and firms with BTM < 1 from our analysis since the case for impairment in their goodwill is less compelling. The determinants of goodwill write-off decisions can be associated with a firm's BTM status: for example, CEO reputation concerns may be more likely to affect write-off decisions when BTM > 1. This suggests that our results may not be generalizable to all firms. Nevertheless, finding that SFAS 142 is unable to generate write-offs when they are most likely due does not reflect well on the standard. Further, if write-offs are most likely when BTM > 1, the 69% frequency of non-impairment documented in the sample is a lower bound on the incidence of non-impairment in the general population.

A suggested alternative explanation for our results is that a change from BTM < 1 to BTM > 1 will not be associated with a write-off if the market value decline is attributable to situations where GAAP does not require recognition of a contemporaneous expense (e.g., certain contingencies, deferred taxes, pensions, etc.). Even in such circumstances, if the market value decline is permanent, we expect auditors to encourage managers to take timely write-offs. Nevertheless, to minimize the likelihood of this explanation, we restrict our sample to firms with two consecutive years of BTM > 1. Under these circumstances, we argue that a write-off in goodwill or some other account is prudent. If an adequate write-off is taken on an account other than goodwill, the firms are by selection not in our sample (because their BTM should no longer be greater than one).

The remainder of the paper is organized as follows. Section 2 describes our study, including the sample, the research design, and our proxies for managers' ability and

motives to avoid timely goodwill write-offs under SFAS 142. Descriptive statistics on non-impairment post-SFAS 142 together with univariate and multivariate results are reported in Section 3. Section 4 concludes.

2. The study

In this section, we first explain (in §2.1.) the SFAS 142 goodwill impairment rules. In §2.2., we describe two firm characteristics (and their empirical proxies) that, given the rules, provide managers with unverifiable discretion to manage goodwill impairments: the number and size of reporting units and the extent to which the reporting units' net assets are unverifiable. In §2.3., we discuss the possible motives (and our proxies for those motives) for managers to avoid impairment write-offs. In §2.4., we discuss our sample selection. §2.5., describes the research design.

2.1. The SFAS 142 goodwill impairment test

Prior to SFAS 142, accounting for acquired goodwill was governed by APB 17 (AICPA, 1970) and SFAS 121 (FASB, 1995). Under these standards, goodwill was subject to periodic amortization. Goodwill was also subject to impairment, but only when certain associated long-lived assets were also impaired. SFAS 142 abolished goodwill amortization and required instead an impairment-only approach to goodwill. Further, SFAS 142 no longer tied the goodwill impairment decision to impairment decisions on related long-lived assets. Instead, goodwill is now impaired based on a comparison of a fair-value estimate of goodwill with the book value of goodwill.

SFAS 142 lays out the following procedure for goodwill impairment. All acquired goodwill is initially allocated among the "reporting units" of a firm. Generally, a reporting unit is an operating segment, or a component thereof, if that component constitutes a business with discrete financial information that is regularly reviewed by management (SFAS 142, §30). Goodwill is tested for impairment at this reporting unit level. For a given reporting unit, the goodwill impairment test is a two-step procedure as described below.

Step 1: The reporting unit's total fair value is estimated by management (or their agents). This fair value is then compared to the unit's total book value. If the fair value is greater than the book value, step 2 is skipped and no impairment loss is recognized. In other words, no impairment charge is required if the fair value to book value (FTB) ratio of a reporting unit is greater than one.

Step 2: If the unit's estimated fair value is less than its book value, the fair value of the unit's goodwill is estimated. The fair value of goodwill is defined as the difference between the unit's total fair value (from step 1) and the sum of the fair values of the unit's non-goodwill net assets. The fair value of goodwill is then compared to the book value of goodwill. Any excess of goodwill's book value over its fair value is recorded as the unit's impairment loss (no loss or gain is recognized if the goodwill's fair value estimate exceeds its book value). Goodwill impairment losses from the firm's various reporting units are aggregated and reported as a separate above-the-line item in the income statement.

2.2. Financial characteristics that facilitate unverifiable discretion under SFAS 142

Acquired goodwill represents rents expected from an acquisition (i.e., potential growth options). Allocations of these rents among reporting units and subsequent estimates of their fair values (as required under SFAS 142) are unverifiable, i.e., they cannot be "objectively characterized as true or false" (*Ollman v. Evans*, 750 F.2d 970, D.C. Cir., 1984).[6] The lack of (legal) verifiability of goodwill accounting under SFAS 142 compromises accounting's contracting and stewardship roles. Under SFAS 142, managers can either: delay goodwill impairment losses, overstating current earnings and net assets; or overstate goodwill impairment losses, understating current earnings and net assets (as part of a "big bath"). The unverifiable discretion in SFAS 142 makes it easier for managers who pursue negative net-present-value acquisitions (e.g., empire builders, poor planners, etc.) to distort those acquisitions' cost and their effect on subsequent financial performance. Standard setters argue, however, that unverifiability can be used to convey private information to equity investors.

Following Ramanna (2008), below we identify two firm financial characteristics that increase firms' unverifiable discretion to determine impairment under SFAS 142: the number and size of reporting units; and the unverifiable net assets in reporting units.

2.2.1. Number and size of reporting units

When a firm recognizes goodwill in an acquisition, SFAS 142 requires the firm allocate that goodwill among the reporting units that benefit from the acquisition. If the rents that goodwill represents are generated jointly by the units, any allocation is arbitrary and there is no way to meaningfully allocate goodwill: any one allocation scheme is as

[6] The D.C. Circuit Court defined verifiability in the context of establishing whether a statement is "fact or opinion." This definition has since been cited by the Supreme Court (e.g., *Milkovich v. Lorain*, 497 U.S. 1, 1990) and other circuit courts (e.g., *Biospherics v. Forbes*, 151 F.3d 180, 4th Cir., 1998).

good as another (Watts 2003; Roychowdhury and Watts, 2007). For a given firm, the larger the number of reporting units and the larger the size of those units relative to acquired goodwill, the greater the flexibility in allocating goodwill. This initial flexibility in goodwill allocation provides the opportunity to later avoid or overstate impairment losses. Goodwill can be allocated to units where subsequent impairment can be masked by the units' internally generated unrecognized gains or losses. Managers can allocate goodwill either to low growth units to accelerate impairment (a big bath), or to high growth units (with existing unrecorded internally generated growth options) to delay impairment. The larger and more numerous the reporting units, the greater is management's flexibility in determining future impairment losses.[7]

Empirical Proxies for Number and Size of Reporting Units

*Ln(Seg)*Ln(Sales)*: Empirical data on "the number and size of reporting units" are not readily available. SFAS 131, however, requires firms to disclose data on their business segments. We use the number of business segments as our proxy for the number of reporting units and the sales of the business segments (which when aggregated are the sales of the firm) as our proxy for the size of reporting units. We use one variable to represent the flexibility given by "the number and size of reporting units." That variable is the product of the natural logs of the number of segments and aggregate sales data, i.e., *Ln(Seg)*Ln(Sales)*. Holding the number of segments constant, increasing total sales increases the average segment size (and flexibility to hide impairment in a segment).

[7] Once goodwill is allocated among reporting units, reallocation in future years is not permitted (SFAS 142, §34). Thus, in principle, the "number and size of reporting units" provides flexibility only at the time of acquisition. However, firms can reorganize their reporting structures in future years (SFAS 142, §36), effectively leading to a reallocation in acquired goodwill.

Holding the total sales constant, increasing the number of segments increases the probability of finding units with high fair-value-to-book-value ratios (recall that if this ratio is greater than one, no impairment charge is required).

Ln(Seg): In addition to *Ln(Seg)*Ln(Sales)*, we use just the number of segments, *Ln(Seg)*, as a proxy for the number and size of reporting units. It is possible that *Ln(Seg)*Ln(Sales)* is only capturing the size of the firm, i.e., not the size *and* complexity of its business segments. Since *Ln(Seg)* cannot directly proxy for the size of business segments (it only captures the complexity of firms' segment structures), using *Ln(Seg)* mitigates the possibility that our main results from using *Ln(Seg)*Ln(Sales)* are driven only by firm size. Reporting units are at least as numerous as business segments (SFAS 142, §30). Thus, using business segments as proxies understates the number of reporting units. This, in turn, biases against finding an association between impairment delays and the number of reporting units (i.e., biases against finding our predicted relation).

NumSICcodes: The number of distinct SIC codes within a firm can also inform us on the number of reporting units in that firm. If different lines of business (represented by different SIC codes) are organized into different reporting units, then the number of reporting units in a firm is increasing in the number of its SIC codes. Firms operating across a large number of SIC codes are also likely to have more heterogeneous cash flows across their units. If goodwill is allocated strategically in order to manage future impairment decisions, having more heterogeneous cash flows across units gives firms greater impairment management flexibility. This is because goodwill can be allocated to a unit whose cash flows are unassociated with the goodwill's value, so it is less likely that an economic shock that results in goodwill losing value will affect the unit as a whole

(and vice versa). Thus, we use *NumSICcodes*, the natural log of the number of distinct SIC codes in a firm as a proxy for the number and size of its reporting units.

HHI: We also use a variant of the Herfindahl-Hirschman Index (*HHI*) as a proxy for the number and size of reporting units. We calculate each firm's *HHI* as follows.

$$HHI = \sum_{i=1}^{n} (s_i^2);$$

where n is the number of business segments in the firm and s_i is the ratio of the i^{th} business-segments' sales to total firm sales. Thus, *HHI* is an index of segment concentration within a firm. *HHI* ranges from zero to one. If a firm has only one segment, then its *HHI* is one; if a firm has several segments, but one of them is much larger than the others, its *HHI* is close to one. As the number of segments increases, and as segments become of similar size, the firm's *HHI* gets closer to zero. Thus, an *HHI* close to zero indicates a firm with several equally sized segments, while an *HHI* close to one indicates a firm with a few disproportionately sized segments. In using *HHI* to proxy for the number and size of reporting units, note that low *HHI* (several equally sized segments) offers the greater flexibility associated with more and larger reporting units, while high *HHI* (few disproportionately sized segments) offers the lesser flexibility associated with fewer and smaller reporting units. Thus, *HHI* is expected to be negatively associated with *Ln(Seg)*Ln(Sales)*, *Ln(Seg)*, and *NumSICcodes*.

2.2.2. Unverifiable net assets in reporting units

If a reporting unit fails step 1 of the impairment test (i.e., if the unit's fair value to book value ratio is less than one), management must estimate the fair value of the unit's goodwill under step 2. That estimate is calculated as the difference between the unit's

total fair value (from step 1) and the fair value of the unit's constituent net assets (excluding book goodwill). Thus, in step 2, managers must obtain fair-value appraisals for all of the unit's assets and liabilities. For units that have a larger proportion of net assets (excluding goodwill) without readily observable market values (hereafter, unverifiable net assets), assessing fair values of net assets introduces additional subjectivity in determining impairment losses. Subjectivity in appraising the fair values of net assets other than goodwill results in subjectivity in estimating the fair value of goodwill, and consequently in estimating the amount of impairment loss. The subjectivity suggests that units with more unverifiable net assets have greater ability to manage goodwill impairment losses.

Empirical Proxies for Unverifiable Net Assets in Reporting Units

UNA0: We compute the ratio of [Cash + Short Term Investments – Debt – Preferred Equity] to [Assets – Liabilities]. The denominator in this ratio is total net assets, while the numerator is intended to proxy for that component of net assets whose fair-values are likely most verifiable (Richardson *et al*., 2005). Thus, this ratio is intended to capture the verifiability of net assets (VNA). Items *excluded* from the numerator include plant and equipment, receivables, payables, inventories, advances, etc. Fair-value estimates of these items are likely less verifiable than cash, short-term investments, debt, and preferred equity. Thus, as the VNA ratio decreases, subjectivity in estimating the fair value of goodwill is expected to increase. To obtain a measure that increases in the subjectivity of estimating the fair value of goodwill, we multiply VNA by -1 and call the result *UNA0* for the unverifiability of net assets.

UNA1, *UNA2*, and *UNA3*: *UNA0* imposes the assumption that cash, short-term investments, debt, and preferred equity are the only verifiable net assets. It is possible that verifiable market values exist for all investments, advances, receivables, payables, and inventories as well; however, the availability of verifiable market values for these net assets is likely to vary across inputs, outputs, and industries. We define three additional incremental variables *UNA1*, *UNA2*, and *UNA3* that successively allow for broader definitions of verifiable net assets. *UNA1* is defined as -1* [Cash + All Investments and Advances – Debt – Preferred Equity] ÷ [Assets – Liabilities], *UNA2* is defined as -1* [Cash + All Investments and Advances + Receivables – Payables – Debt – Preferred Equity] ÷ [Assets – Liabilities], and *UNA3* is defined as -1* [Cash + All Investments and Advances + Receivables + Inventories – Payables – Debt – Preferred Equity] ÷ [Assets – Liabilities]. In empirical tests, we evaluate the effect of broadening the definition of verifiable net assets to include all investments and advances, receivables, payables, and inventories.

Ind.Lev: A potential problem with *UNA0* and its derivatives is that the formulae homogenize the net assets considered verifiable across all industries. Fabricant (1936) reports that in a sample of 208 large listed industrial US firms for the period 1925-1934, property, plant, and equipment write-ups were more numerous (70) than investment write-ups (43). Watts (2006, p. 54) argues the property, plant, and equipment written up were likely to be general, non-firm-specific assets for which market prices were more observable. If that is true, *UNA0* and its derivatives measure unverifiability with error. Consequently, as an alternate proxy for the unverifiability of a firm's net assets, we also use the firm's industry-average debt-to-assets.

Leverage can be a good proxy for non-firm-specific assets (Myers, 1977; Smith and Watts, 1992). Such assets are more likely to have verifiable fair-value estimates. At the firm level, leverage is a noisy measure of assets-in-place because it also proxies for distress (especially likely in our sample where all firms have BTM > 1). Industry mean leverage, however, can average out the firm-specific distress component of leverage, leaving us with a proxy for assets-in-place. The higher the industry's average leverage, the more likely the nature of assets in a firm are such that they can be reliably valued; and thus, the less likely the unverifiability of net assets. We define "industry" as four-digit NAICS codes, and rank all such industries by mean leverage. We use the industry mean leverage rank, *Ind.Lev*, as a proxy for verifiability of firm assets. Thus, we expect the subjectivity generated by unverifiable net assets to decrease in *Ind.Lev*.

In addition to the two financial characteristics described above (i.e., the number and size of reporting units and the unverifiable net assets in reporting units), Ramanna (2008) describes a third firm attribute that can facilitate write-off management: the fair-value-to-book-value ratio (FTB) of reporting units. Under step 1 of SFAS 142, impairment losses are recognized only when the unit's estimated fair value is less than the book value of its net assets—i.e., only when the unit's fair value to book value ratio is less than one. This step implicitly assigns all of the difference between a unit's fair value and its book value to acquired goodwill. However, at least two other factors can be responsible for this difference. First, internally generated growth options can increase the unit's fair value without increasing its book value. Second, the book value of the unit's recorded net assets can be below their market value. These two factors mean that the

value implicitly allotted to acquired goodwill in step 1 of the SFAS 142 impairment test can be overstated. Units with high FTB ratios can avoid impairment of acquired goodwill even when that goodwill is impaired because internally generated rents and understatement of net assets can absorb any drop in goodwill value. Thus, units with high FTB ratios are more likely to be able to delay impairment losses post-SFAS 142.

We do not explicitly test this hypothesis. We cannot directly observe FTB ratios, and the best available proxy for FTB ratios—firm-wide market-to-book ratios—is used to select our sample (as described below). In other words, since our sample only consists of firms with BTM > 1, testing whether firms with high FTB are avoiding impairment losses is not possible. This suggests that the extent of non-impairment documented in this paper is a lower bound on the total avoidance occurring under SFAS 142.

2.3. Motives to manage goodwill impairment losses

In the prior section, we discussed how the rules in SFAS 142 make it easier for firms with certain financial characteristics to manage impairment losses. In addition to having the *ability* to manage impairment losses, firms must have the *motives* to do so. In this section, we discuss some of the possible motives for impairment management. We expect that the likelihood of recording impairment losses will vary in cross-section with both the ability and the motives to manage those losses.

Standard setters propose that SFAS 142's unverifiable estimates allow managers to convey private information on future cash flows. In explaining how SFAS 142 improves financial reporting, the FASB (2001, p. 7) argues the standard provides "users with a better understanding of the expectations about and changes in [goodwill and other

intangible assets] over time." If this is the case, managers' failure to impair goodwill can be attributed to information asymmetries between managers and shareholders, in particular, situations in which managers have private information that the market undervalues the firm. We identify firms whose managers believe the firm is undervalued by the market as those firms with either positive net share-repurchase activity or positive net insider buying. These actions strongly suggest such a belief. We code these firms using an indicator variable, *InfoAsym*. In our tests, we examine the differential properties of *InfoAsym* firms and examine the cross-sectional variation in impairment decisions with *InfoAsym*.

Agency theory predicts managers (absent reputation costs) will use unverifiability in SFAS 142 to opportunistically manage financial reports (Watts, 2003; Ramanna, 2008). Beatty and Weber (2006) study firms' agency-based motives to delay goodwill losses in the SFAS 142 transition period. They argue from prior literature that the decision to delay goodwill losses is based on: debt and compensation contracts written on goodwill accounts (Watts and Zimmerman, 1986), management reputation (Francis *et al*., 1996), and equity-asset-pricing concerns (i.e., the responsiveness of stock prices to goodwill-inclusive earnings, Fields *et al*., 2001). They also hypothesize that exchange delisting concerns can affect the impairment loss recognition decision when delisting is triggered by goodwill-inclusive covenants. In empirical tests, they find support for all motives except equity-asset-pricing concerns. In this paper, in testing whether goodwill impairment decisions vary with financial characteristics that allow for discretion, we test for agency-based predictions as potential motives. Specifically, impairment avoidance is expected to increase in the following factors.

(a) The costs of violating debt covenants (*CovDebt*): Our proxy for the cost of violating debt covenants is the product of the ratio of current period debt to prior period assets and an indicator if the firm has a net worth or net income based debt covenant. For firms with debt contracts written on accounting numbers, violating a covenant will be more costly, the greater its leverage. Thus, we multiply the covenant indicator variable by leverage.[8]

(b) Managers' accounting-based compensation (*Bonus*): Our proxy for the managers' accounting-based compensation concerns is an indicator for whether the firm's CEO received a cash bonus during the year in question. Murphy (1999) reports that accounting-based compensation is usually paid out as a bonus and that accounting-based compensation contracts are usually written on net income (and so include the effect of goodwill write-offs).

(c) Managers' reputational concerns (*Tenure*): Beatty and Weber (2006) argue that among firms with book goodwill, CEOs with longer tenures are more likely to have been involved in the acquisitions that generated that goodwill. To avoid reputation costs, such long-tenure CEOs are less likely to take goodwill write-offs. CEO tenure is measured as the number of years the incumbent CEO has held that office.

(d) The firm being traded on an exchange with accounting-based delisting requirements (*Delist*). Beatty and Weber (2006) report that firms listed on the

[8] Dichev and Skinner (2002) find that leverage is a relatively noisy proxy for the *probability* of debt covenant violation; however, holding constant this probability, leverage is likely a good proxy for the *cost* of debt covenant violation (the more debt a firm has, the more costly it will be to renegotiate contracts once covenants are violated). Further, we expect the probability of covenant violation in our sample (firms with two years of BTM > 1) is relatively high.

NASDAQ and AMEX are subject to goodwill-inclusive accounting-based delisting requirements. OTC listed firms do not have such delisting requirements, while NYSE listed firms face delisting based on subjective criteria. To capture exchange delisting concerns, we create a dummy variable set to one if the firm trades on NASDAQ or AMEX; zero otherwise.

(e) Equity-asset-pricing concerns (*AsstPrc*): We use the earnings response coefficient (ERC) to measure the capitalization of earnings in returns. If equity-asset-pricing concerns affect managers' impairment decisions, non-impairment is likely to increase in ERC. Following Beatty and Weber (2006), we define ERC for a given firm-year as the coefficient from a regression of the firm's share price on its operating income using at least 16 and up to 20 quarters of data prior to the firm-year.

In addition to the motives above, we define a dummy set to one if the firm reorganizes its segment reporting structure (*SegReOrg*). As noted earlier, when a firm acquires goodwill, it must allocate that goodwill among reporting units likely to benefit from that acquisition. After this initial allocation, goodwill is tested for impairment within the reporting unit. However, if a firm reorganizes its reporting unit structure, it can reallocate goodwill from merged and disbanded units (SFAS 142, §36). Firms are unlikely to reorganize their reporting-unit structure frequently because of the costs associated with such reorganization.[9] However, when the firm does engage in a reorganization, it is has the opportunity to "clean its books:" the firm can take a goodwill

[9] These costs can be tangible like legal, administrative, and human-resource costs (hiring and firing personnel); and intangible like the cost of decreased employee morale.

write-off citing organizational restructuring even when that goodwill is not impaired. This write-off creates a loss reserve for future years (big bath).[10]

Reorganizing segments, however, is unlikely to be an unambiguous proxy for big bath incentives. This is because when a firm reorganizes its segments, it is also possible for the firm to hide impaired goodwill in well-performing units rather than "clean its books." Thus, an ex-ante prediction on the sign of the association of *SegReOrg* with impairment decisions is not possible. Further, *SegReOrg* can be endogenous to more fundamental economic factors and agency incentives that determine write-off decisions. Accordingly, results from this variable must be interpreted with caution.

2.4. Sample selection

Our objective is to test whether firms with the ability and motives to manage SFAS 142 goodwill impairment losses actually do so. To do this, we need to identify a sample of firm-years where goodwill is likely impaired. We use the presence of book goodwill and the time-series of firms' book-to-market ratios (BTM) to select our sample (where, as noted earlier, BTM is calculated before the effect of any goodwill impairment). We begin with firms that have equity-book-values < equity-market-values and at least $1 million of book goodwill at the end of year t-2. Then, we retain only those firms that end year t-1 with BTM > 1. When a firm goes from having equity-book-values < equity-market-values (in year t-2) to having BTM > 1 (in year t-1), there is likely an overstatement in its book value, suggesting a write-off is due. However, such a change can be associated with no write-off if the decline in market value is attributable to

[10] The write-off results in a reduction in the goodwill balance and prevents timely loss recognition when the goodwill is actually impaired.

circumstances where GAAP does not require recognizing a contemporaneous expense (e.g., certain contingencies, deferred taxes, pensions, etc.).[11]

To minimize the circumstances where the change from equity-book-values < equity-market-values (in year t-2) to BTM > 1 (in year t-1) is not associated with GAAP requirements for a contemporaneous write-off, we limit our sample to firms where BTM stays above one for an additional fiscal year (year t). Additionally, we require that these firms begin year t with a non-zero goodwill balance. We argue that firms with two successive years of BTM > 1 are likely to have impairment in net assets. Further, since the firms have goodwill on their books, we expect at least some of that write-off to be in goodwill. Note if a firm takes an adequate write-off from an account other than goodwill, it is, by selection, not in our sample because its BTM should no longer be greater than one.

We examine the determinants of goodwill impairment in the second fiscal year with BTM > 1 (i.e., in year t). There are 124 "year t" observations in the COMPUSTAT database that meet our sample criteria. The observations are from years 2003 through 2006. SFAS 142 was promulgated in June 2001 and mandatory adoption was required for fiscal years beginning after December 15, 2001. We exclude the initial adoption year (2002) from our year t analysis of impairments because in 2002 firms were permitted to ascribe goodwill impairments below-the-line to a "change in accounting principle;" in all subsequent years, impairments are charged above-the-line, to "income from continuing operations." Beatty and Weber (2006) find evidence that absent contracting incentives, firms accelerate impairments into the adoption year to qualify for below-the-line

[11] Even in such circumstances, assuming the decline in market value is permanent, auditors are likely to want managers to take timely write-offs.

accounting treatment. Thus, the factors that facilitate adoption-year impairments likely differ from the factors that facilitate impairments in subsequent years.[12] Years beyond 2006 are not included in our sample since these data were not available as of this writing.

Appendix A traces the evolution of firms from year t-1 (first year with BTM > 1) to year t (second year with BTM > 1). The purpose is to explore what proportion of "year t-1" firms make it into our final "year t" sample of 124 observations.

2.5. Research design

To examine the determinants of goodwill non-impairment in our year-t sample in a multivariate setting, we use the following regression.

$$Imp = \beta_0 * \text{Intercept} + \beta_k * (\text{Economic Fundamentals}) + \beta_l * (InfoAsym) + \beta_m * (\text{Agency-Based Motives}) + \beta_n * (\text{Unverifiable Discretion}) + \varepsilon \quad (1)$$

In the above equation, *Imp* captures a firm's goodwill impairment at the end of year t, scaled by beginning-of-period assets. If impairments are not reported on COMPUSTAT (i.e., if impairments are coded as "missing" or "combined" with other data), we assume impairments are zero.[13] The economic fundamental variables from equation (1) are as follows.

(a) *Size*: The natural log of beginning-of-period assets.

(b) *PropGw*: The ratio of beginning-of-period goodwill to prior year assets.

[12] Firms that accelerated impairments into the adoption year to create write-off loss reserves are unlikely to be in our sample since we filter out firms without positive goodwill balances.
[13] We tested this assumption for a random sample of ten firms by searching 10-K filings for impairments data. We found no instance where our assumption was inconsistent with data in the 10-K.

(c) *BHRet*: The "year t" buy-and-hold return.

(d) *NumQtrBTM>1*: The number of quarters in "year t" with BTM > 1.

Size and *PropGw* are likely proxies for the magnitude of goodwill write-offs, while *BHRet* and *NumQtrBTM*>1 are likely proxies for the economic necessity of a write-off.

InfoAsym in equation (1) is as defined in §2.3. The agency-based variables are also as described in §2.3., i.e., *CovDebt*, *Bonus*, *Tenure*, *Delist*, *AsstPrc*, and *SegReOrg*. The unverifiable discretion variables in equation (1) are the set of: one proxy for the number and size of reporting units (i.e., *ln(Seg)*, *ln(Seg)*ln(Sales)*, *NumSICcodes*, or *HHI*); and one proxy for the unverifiability of net assets (i.e., *Ind.Lev*, *UNA0*, *UNA1*, *UNA2*, or *UNA3*), as discussed in §2.2.

Unless otherwise mentioned, all variables in our analyses are measured at the end of "year t." See Appendix B for a consolidated description of all variables. Parameter estimates in the multivariate regression are computed using ordinary least squares and standard errors are adjusted for heteroskedasticity as suggested by White (1980).

3. The results

3.1. Descriptive results

Before reporting on univariate and multivariate tests of the determinants of goodwill non-impairment, we present some descriptive evidence on the extent of and possible reasons for non-impairment in our sample.

As noted earlier, there are 124 firms in COMPUSTAT meeting our sample criteria. Of these, 31% (38 firms) record goodwill impairments in year t; 69% (86 firms)

do not (Panel A, Table 1). Given our strict sample-selection criteria (two years of BTM > 1), the relatively low frequency of impairment suggests that SFAS 142 is not effective in generating timely write-offs (moreover, even the year-t impairments cannot be considered timely in the strictest sense since this is the second consecutive year with BTM > 1). It is possible, however, that the low frequency of write-offs is due to managers' private information on positive future cash flows. To test this explanation, we examine the proportion of firms in the sample with favorable information asymmetry (*InfoAsym*=1). Only 51 of the 124 firms (41% of the sample) have favorable information asymmetry making it unlikely that managers' private information fully explains the high frequency of non-impairment.

We next examine whether sample firms with favorable information asymmetries have a significantly higher non-impairment frequency than all other sample firms. If this is the case, the evidence can still support the argument that managers' private information drives non-impairments. The frequency of goodwill non-impairment in the sub-sample with *InfoAsym*=1 is 71%, while in the sub-sample with *InfoAsym*=0 the frequency is 68%. The chi-square statistic for the 2x2 comparison of impairment frequency across *InfoAsym* is not statistically significant (p-value of 0.8034). Overall, the data do not confirm that the high frequency of non-impairment in the sample is due to management's possession of favorable private information.

It is possible that firms in our sample do not report goodwill write-offs in year t because they took such write-offs in year t-1. If this is the case, then presumably, the year t-1 write-off was not adequate to bring back the firms' BTM ratios to below one (and a write-off in year t is due). Nevertheless, we repeat the analysis in Panel A of Table 1 to

test for a goodwill write-off in either years t or t-1. These data are presented in Panel B of Table 1. The frequency of non-impairment across the two years for firms with favorable information asymmetry is 53%. This is lower than, but statistically indistinguishable from, the two-year frequency of non-impairment (60%) for all other firms (chi-square p-value, 0.4167). Thus, again the data do not confirm the hypothesis that non-impairment in the sample is motivated by managers' private information on future cash flows.

In Panel C of Table 1, we report on the year-t frequency of goodwill impairment among sample firms with only one business segment. Earlier, we argued that firms with large numbers of and large-sized reporting units are more likely to be able to avoid impairments by strategically allocating goodwill to units with internally generated rents. If this is the case, it is useful to determine if in single-segment firms, unverifiability in net assets provides adequate discretion to avoid write-offs. Panel C reports the year-t frequency of non-impairment among single-segment sample firms is 69%, the same as the frequency of non-impairment among all sample firms. Further, among single-segment firms that also show evidence of favorable information asymmetry, non-impairment is 74%; this is statistically indistinguishable from non-impairment among all other single-segment firms (67%, chi-square p-value, 0.5975). Thus, non-impairment does not appear to be limited to multi-segment firms, nor does the evidence confirm that non-impairment in single-segment firms is motivated by managers' private information on future cash flows.

It can be argued that positive net insider buying is a stronger measure of favorable information asymmetry (between managers and shareholders) than *InfoAsym* (recall, *InfoAsym* is firms with *either* positive net share repurchase activity *or* positive net insider

buying). We test whether goodwill-impairment frequency is associated with favorable information asymmetry when the latter is defined only by positive net insider buying. The results are reported in Panel D of Table 1. Twenty-six of the 124 firms in the sample qualify as having favorable information asymmetry per the revised definition. Of these 26 firms, 73% (19 firms) do not impair in year t. In contrast, among the 98 other firms (i.e., 124 minus 26), 68% (67 firms) do not impair in year t. The chi-square statistic for the 2x2 comparison of impairment frequency across the revised definition of information asymmetry is not statistically significant (p-value of 0.6433). In Panel E of Table 1, we report impairment frequencies when favorable information asymmetry is defined using only positive net share repurchase activity. Here too we find no association between goodwill impairment and managers' positive private information. Thus, in these robustness tests as well, the data do not confirm the hypothesis that non-impairment in the sample is motivated by managers' private information on future cash flows.

In Table 2, we explore the time-series of BTM ratios of firms in our sample, where BTM is calculated before the effect of any goodwill impairment. We classify firms by their impairment status and specifically investigate firms with no favorable information asymmetry. The purpose is to provide some descriptive evidence on the extent of the pre-impairment book-value-to-market-value difference of impairing and non-impairing firms. Panel A of Table 2 reports results for the entire sample (all 124 firms). Firms taking impairments in year t have a mean BTM_t ratio of 1.9284. This is statistically greater than the mean BTM_t of non-impairing firms, 1.4133 (p-value is 0.0666). The mean BTM ratios of impairing and non-impairing firms are statistically indistinguishable in years t-1 and t-2. Panel B of Table 2 reports results for the sub-

sample of 73 firms without favorable information asymmetry. Among such firms, those taking impairments in year t have a mean BTM_t ratio of 2.1417, statistically indistinguishable from the mean BTM_t of non-impairing firms, 1.4422 (p-value is 0.1237). The mean BTM ratios of impairing and non-impairing firms are also statistically indistinguishable in years t-1 and t-2.

Overall, from Table 2, there is some evidence in the full sample of firms of a BTM difference in year t between impairing and non-impairing firms. This is consistent with goodwill impairment being likely only when economic circumstances are particularly severe. There is no evidence of such a BTM difference among firms without favorable information asymmetries.

3.2. Univariate results

In Table 3, we report on summary statistics for variables in our analyses. As already discussed, the median impairment (*Imp*) in our sample is zero. The mean impairment is 4.7% of beginning-of-period assets and the median (mean) firm in our sample has 14.1% (25.6%) of its assets in goodwill. Sample firms experience a median (mean) year-t buy-and-hold return of -7.2% (5.1%). The median firm closed each of its four quarters in year t with BTM > 1, while on average, firms in the sample experienced 3.49 quarters of BTM > 1 in year t.

Turning to the agency-based motives, the median firm's *CovDebt* is zero, since the net-income/ net-worth covenant indicator for the median firm is zero. Nearly 52% of CEOs of sample firms received a bonus in year t and the median (mean) CEO was in office for 4 years (5.5 years) by the end of year t. Over 51% of the sample's firms have

delisting-based incentives to avoid impairments and 16.3% of sample firms reorganized their segment structure in year t.

The median values of *ln(Seg)* and *NumSICcodes* are 0.693, suggesting that the median firm in our sample has both two business segments and two SIC codes. The mean numbers of business segments and SIC codes in the sample are 2.51 and 1.96, respectively. The median *HHI* in the sample 0.768, suggesting that most firms in the sample are not highly concentrated in one segment.

The median industry-leverage rank for firms in the sample is 1192 (the highest possible rank in COMPUSTAT is 2133). The median and mean values of the four UNA proxies become progressively smaller as the subscript increases from "0" to "3." This is predictable since with each successive definition of UNA, we add another asset item to the list of verifiable assets. Compared to the other independent variables, the UNA proxies show relatively high variance. In an unreported test, we also find relatively high kurtosis in these variables, suggesting the high variance in these variables is due to a few extreme observations. To mitigate the effect of such observations (and to avoid trimming-induced data loss in what is a relatively small dataset), we used the ranked values of UNA in subsequent empirical tests.

Table 4 reports the independent variables' correlations with *Imp*—the dependent variable—and with each other. In Panel A, we report correlations for the various proxies for the number and size of reporting units. As predicted, the three segment-based proxies for the number and size of reporting units (i.e., *ln(Seg)*, *ln(Seg)*ln(Sales)*, and *NumSICcodes*) are negatively correlated with *Imp*. Also consistent with predictions, *HHI* is positively correlated with *Imp*: recall that higher values of *HHI* correspond to a lower

concentration in segment-size and thus higher values of *HHI* are likely decreasing in the number and size of reporting units.

In Panel B of Table 4, we report that *Imp* is positively correlated with *IndLev* and negatively correlated with *UNA0*. *IndLev* is a proxy for non-firm-specific assets, which are likely verifiable: thus, the positive correlation of *IndLev* and *Imp* can be interpreted as impairments increasing in the verifiability of net assets as we expected. Similarly, the negative correlation of *UNA0* and *Imp* reported in Panel B can be interpreted as impairments decreasing in the unverifiability of net assets. None of the other UNA based proxies are significantly correlated with *Imp* in the univariate tests.

The correlations of all other independent variables with *Imp*, *ln(Seg)*, *IndLev*, and *UNA0* and with each other are reported in Panel C of Table 4. The proportion of goodwill to assets is positively correlated with *Imp*, while the one year buy-and-hold return (*BHRet*) and the number of quarters with BTM > 1 (*NumQtrBTM>1*) are negatively correlated with *Imp*. This latter correlation is counterintuitive: if the number of quarters with BTM > 1 is a proxy for the necessity of a write-off, we would expect it to be positively associated with impairments. Our proxy for firm size (beginning-of-period assets) is negatively correlated with *IndLev*, suggesting that larger firms in our sample have more firm-specific assets.

Turning to the proxies for the motives to avoid write-offs, the data in Table 4 report no significant relation between goodwill impairment avoidance and favorable information asymmetry between managers and shareholders (as also seen in Table 1). Univariate results from the agency-based proxies are inconclusive as well: although

CovDebt, *Bonus*, and *Tenure* have the predicted sign, their correlations with *Imp* are not statistically significant.

3.3. Multivariate results

Table 5 reports on multivariate tests of the determinants of non-impairment in the sample. The specification for the multivariate regressions is provided in §2.5. Since we do not have data to compute *AsstPrc* for all the observations in our sample (see Table 3), we report the results both with and without this variable. Even without *AsstPrc*, our multivariate tests include only 123 of the 124 firms in the sample since segment-level data are not available for one firm (and these data are necessary to construct all proxies for the number and size of reporting units). There are thirteen panels to Table 5, labeled A through M. The panels correspond to various permutations of proxies for the two discretion characteristics, i.e., number and size of reporting units and unverifiability of net assets.[14]

In estimating the regression across the full sample (i.e., without *AsstPrc*), all four proxies for the number and size of reporting units are statistically significant in the predicted direction at least at the 90% confidence level, regardless of the choice of proxy for the unverifiability of net assets. Among the proxies for the unverifiability of net assets, *IndLev*, *UNA0*, and *UNA1* are statistically significant in the predicted direction at least at the 90% confidence level with one exception. *UNA2* and *UNA3* are generally not

[14] Not all permutations are reported, but these are available upon request. In general, we report all permutations for variables on the basis of which we claim results and one permutation for variables that are not consistently statistically significant (and thus do not form the basis for our results). We report all permutations of {*ln(Seg)*, *ln(Seg)*ln(Sales)*, *NumSICcodes*, *HHI*} with {*Ind.Lev*, *UNA0*} since these form the core of our results. We report only two permutations when using the limited sample with *AsstPrc* data availability, since *AsstPrc* is not statistically significant. We report only one permutation using *UNA1* for parsimony. We report only one permutation using *UNA2* and *UNA3*, respectively, since these variables are not statistically significant.

statistically significant, suggesting that including all receivables, payables, and inventories as "verifiable assets" introduces error in measuring this construct.

To interpret the economic significance of the unverifiable discretion proxies on impairment decisions, we offer the case of Panel A as an example (where *ln(Seg)* proxies for the number and size of reporting units and *IndLev* proxies for the unverifiability of net assets). A one standard deviation increase in *ln(Seg)* decreases the proportion of goodwill impaired (as a fraction of beginning-of-period assets) by about 2%. Since the mean sample firm has about 25% of its assets in goodwill, we can say that a one standard deviation increase in *ln(Seg)* decreases the magnitude of impairment by about 8% of recorded goodwill. Similarly, a one standard deviation increase in *IndLev* increases the proportion of goodwill impaired by about 1.3% of beginning-of-period assets, or about 5.2% of recorded goodwill. The interpretation is that impairments decrease with the number and size of reporting units and increase with the verifiability of net assets within the unit. The results are consistent with impairments varying systematically with unverifiable discretion in a sample of firms with market indications of impairment. At least for the 73 firms in the sample without favorable information asymmetry (*InfoAsym*=0), the results are consistent with managerial opportunism.

The coefficient on *InfoAsym* is not significant across all the panels of Table 5, suggesting that favorable information asymmetries (between managers and shareholders) are not related, on average, to impairment avoidance in the sample. Among the agency-based motives for non-impairment, *CovDebt*, a measure of the cost of debt covenant violations, is negative and statistically significant across numerous specifications in Table 5. Additionally, *Tenure*, a measure of CEOs' reputation concerns is negative and

statistically significant in all specifications of Table 5. The interpretation—that debt-covenant and CEO-reputation concerns mitigate the likelihood of goodwill write-offs—is consistent with findings in Beatty and Weber (2006). The relation between *CovDebt* and non-impairment is likely due to managers' desire to avoid covenant renegotiation. Avoiding renegotiation facilitates wealth transfers from debtholders to shareholders, but can also be motivated by management reputation concerns (since failure to do so can be perceived as managerial incompetence). Interpreting the magnitude of the coefficients from Panel A of Table 5, a one standard deviation increase in *CovDebt* is associated with a 5.6% decrease in the magnitude of impairment (as a fraction of recorded goodwill), and a one standard deviation increase in *Tenure* is associated with a 7.3% decrease in the magnitude of impairment (again, as a fraction of recorded goodwill).[15]

Turning to economic-fundamental variables in the sample, the one-year buy-and-hold return (*BHRet*) and the number of quarters with BTM > 1 (*NumQtrBTM>1*) are negative predictors of impairments, though these relations are not statistically significant in all specifications of Table 5. As noted in the discussion of univariate results, the finding on the number of quarters with BTM > 1 is counter-intuitive.

When we estimate the regression specification across the limited sample for which *AsstPrc* data are also available, the sign and significance of our proxies for unverifiable discretion are largely consistent with expectations. The results with respect to information asymmetry and the agency-based motives are also similar to those using the full sample. *BHRet* and *NumQtrBTM>1*, however, lose their statistical significance.

[15] To investigate whether the negative association between *Imp* and *Tenure* is driven by firms with new CEOs (assuming new CEOs are more likely to take goodwill write-offs as part of a big bath), we re-run the regressions replacing *Tenure* with an indicator variable set to one when firm-CEOs have been in office less than one year. The indicator variable is not statistically significant, suggesting that the reported results on *Tenure* are unlikely to be driven by new-management induced big baths.

This can be due to the over 25% loss in data from requiring a non-missing value for *AsstPrc*, which itself is not statistically significant.

3.4. Analysis of firms in the year t+1

In Table 6, we report on the status of sample firms in the year t+1, i.e., the year after our principal year of analysis.[16] From Panel A of Table 6, seventy-one percent of the sample remain active in year t+1; 14.5% of firms are acquired and another 14.5% are delisted. Comparing the frequency of acquisitions, delistings, and active firms across evidence of favorable information asymmetry (*InfoAsym*), we find the following: there is little difference in the percentage of firms acquired (15% for *InfoAsym*=0 and 14% for *InfoAsym*=1); there is a higher frequency of delistings among non-information-asymmetry firms (22% for *InfoAsym*=0 and 4% for *InfoAsym*=1); and there is a lower frequency of active firms among non-information-asymmetry firms (63% for *InfoAsym*=0 and 82% for *InfoAsym*=1). The chi-square statistic for the comparison of these frequencies has a p-value of 0.0156. Overall, there is evidence in year t+1 of a greater likelihood of delisting and a smaller likelihood of staying active among sample firms whose managers are unlikely to have favorable private information.

In Panel B of Table 6, we investigate the year t+1 status of the 73 non-information-asymmetry firms by their impairment decision in year t. We find that 20% (10 firms) of non-impairment firms in this sub-sample are acquired by year t+1 compared to only 4% (1 firm) of impairment-taking firms. Further, 16% (8 firms) of non-impairment firms are delisted by year t+1 compared to 35% (8 firms) of impairment-

[16] Since several of our sample firms are from fiscal 2006, and since fiscal 2007 accounting data are not available as of this writing, we are not able to provide information on impairments (if any) in year t+1.

taking firms. The chi-square statistic for the comparisons in Panel B has a p-value of 0.0773.Thus, it appears that year-t impairments in this sub-sample are not associated with favorable outcomes in year t+1 (impairments neither precipitate the likelihood of acquisitions nor mitigate the likelihood of delistings). These results are expected if impairments in the sub-sample are taken only in extreme economic hardship, a proposition consistent with the evidence in the Tables 4 and 5 (where impairments are increasing in the magnitude of negative buy-and-hold returns and decreasing in proxies for discretion under SFAS 142).

It does not bode well for SFAS 142 that only the most desperate of firms in a sample experiencing two consecutive years of BTM > 1 take goodwill impairments. However, data on COMPUSTAT show that there are some impairment takers among firms with BTM < 1. Agency-based motives (e.g., big baths around CEO changes) can explain some of these write-offs, but it is also possible that managers take timely goodwill write-offs to distinguish themselves (i.e., reveal their "type"). Watts (2003) argues that timely loss recognition can be used to signal accounting and managerial quality. While there is some evidence consistent with this hypothesis in our analysis in Appendix A, our sample is not conducive to rigorously testing the hypothesis. We leave such tests to future studies.

4. Conclusion

We investigate managers' implementation of SFAS 142, a recent and prominent standard that uses unverifiable fair-value estimates to account for acquired goodwill (FASB, 2001). Standard setters propose that the unverifiable estimates will allow

managers to convey private information on future cash flows, while agency theory predicts managers (absent reputation costs) will use the unverifiability to manage financial reports opportunistically. We test these competing arguments in the paper.

In a sample of firms with market indications of goodwill impairment (firms with book goodwill and two successive years of book-to-market ratios above one), we find the frequency of goodwill non-impairment is 69%. To test whether managers avoid goodwill write-offs because they have (or believe they have) private information on positive future cash flows, we examine the proportion of sample firms where managers engage in positive net share-repurchase activity or positive net insider buying. Both activities suggest management has favorable private information. We find that in only 41% of the sample is there any evidence of positive information asymmetries between managers and shareholders. We next examine whether sample firms with favorable information asymmetries have a higher non-impairment frequency than all other sample firms. If this is the case, the evidence can still support the argument that managers' private information drives non-impairments. We find the non-impairment frequency among firms with favorable information asymmetry (71%) is statistically indistinguishable from non-impairment frequency among all other firms (68%). Overall, the data do not confirm that the high frequency of non-impairment in the sample is due to management's possession of favorable private information.

To investigate whether non-impairment is associated with agency-based motives, we test for the cross-sectional variation in goodwill write-offs with proxies for CEO compensation concerns, CEO reputation concerns, asset pricing concerns, exchange-delisting concerns, and concerns relating to debt covenant violation. Beatty and Weber

(2006) predict that goodwill write-offs in the initial adoption year of SFAS 142 vary in these agency motives. We find evidence of goodwill impairments decreasing in CEO reputation and debt-covenant violation concerns.

Even with motives to avoid timely goodwill write-offs, managers need unverifiable flexibility in the standard in order to justify non-impairments. Ramanna (2008) studies the mechanics of SFAS 142 and identifies two firm characteristics likely to facilitate unverifiable impairment decisions: (1) the number and size of a firm's business units; and (2) the proportion of a firm's net assets that are unverifiable. In univariate and multivariate tests, we find goodwill impairments under SFAS 142 decrease in both these characteristics.

It has been argued that the primary concern over unverifiable fair values is the potential for abuse in cases where upward valuations are permitted. Since SFAS 142 only established rules for goodwill impairment (acquired goodwill cannot be subsequently written up), evidence in this paper is of secondary importance to the fair value debate. This argument overlooks the fact that the SFAS 142 impairment test is an indirect test based on potential upward valuations of reporting units and their net assets. While the upward valuations (if any) are not directly written into financial reports, their effects are felt through the (non)impairment of goodwill.

The results in this paper are consistent with managers exploiting unverifiable fair-value-based discretion in SFAS 142 to avoid timely goodwill write-offs in circumstances where they have agency-based motives to do so (Watts, 2003; Ramanna, 2008). The results do not confirm standard setters' arguments that unverifiable fair-value-based discretion in SFAS 142 is used to convey private information on future cash flows. The

results in the paper highlight the potential costs of unverifiable fair values in SFAS 142, but they cannot rule out that SFAS 142 is net beneficial. Testing the net benefits of SFAS 142, however, requires a theory of how unverifiable discretion improves financial reporting and why those improvements are more beneficial than the documented costs: we are not aware of any such theory in the literature.[17]

[17] The association-test method has been used to make claims on the net benefits of standards in general and of SFAS 142 in particular. Holthausen and Watts (2001) point out the general limitations of the association-test method; Ramanna (2008) describes alternate interpretations to SFAS 142 association studies, casting doubt on their "net benefit" claims.

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Appendix A
Evolution of firms from one year of BTM > 1 to two years of BTM > 1

Status in t	BTM < 1	BV < 0	BTM > 1	Not in Compustat	Total
All firms	268	14	136	68	486
% of Total	*55%*	*3%*	*28%*	*14%*	*100%*
no impairment in t-1	196	5	104	57	362
impairment in t-1	72	9	32	11	124
% Impairing in t-1	*27%*	*64%*	*24%*	*16%*	*26%*

The chi-square statistic for the comparison of impairments in t-1 by status in t has a p-value of 0.0021.

Year t-1 is the first year firms experience BTM > 1. Year t is the following year. If the firms survive and continue to experience BTM > 1 and have non-zero goodwill at beginning of year t, they are in the main sample of 124 firms. BTM is the ratio of equity-book-value plus goodwill impairment (if any) to equity-market-value. See the description of the table above on the following page.

Appendix A ... Cont.

Appendix A traces the evolution of firms from year t-1 (first year with BTM > 1) to year t (second year with BTM > 1; recall BTM is calculated before the effect of any goodwill impairment). The purpose of Appendix A is to explore what proportion of "year t-1" firms make it into our final "year t" sample of 124 observations. There are 486 "year t-1" observations on COMPUSTAT. From our sample description above, these are firm-year observations from the period 2002 to 2005 that have prior-year book goodwill > $1m, prior-year equity-book-values < equity-market-values, and current-year BTM > 1. Of the 486 "year t-1" observations, 268 (55%) revert to BTM < 1 in year t and so are excluded from the final sample. In addition, 14 observations (3%) end year t with negative book values and 68 observations (14%) disappear from the COMPUSTAT database in year t, reducing the final "year t" sample by another 82 observations. This leaves us with 136 observations (28%) that finish year t with continued BTM > 1. This is 12 more observations than the 124 firm-years in our final "year t" sample because the 12 firms do not have goodwill on their books at the beginning of year t.

Appendix A also reports the frequency of goodwill impairments in year t-1 for the 486 observations; the "year t-1" impairment frequencies are analyzed by the observations' status in year t. Impairment frequency in year t-1 is highest among firms that end year t with negative book values (64%). Firms ending year t with BTM < 1 have a higher "year t-1" impairment frequency (27%) than firms ending year t with BTM > 1 (24%). This suggests non-impairment is associated with a continued poor showing in BTM (recall BTM is calculated before the effect of any goodwill impairment). Firms disappearing from COMPUSTAT in year t have the lowest impairment frequency in year t-1 (16%), consistent with non-impairment resulting in greater negative consequences. The comparison of impairment frequencies reported in Appendix A is statistically significant (chi-square p-value, 0.0021).

As noted above, 268 (55%) of the 486 "year t-1" observations, revert to BTM < 1 in year t and so are excluded from the final sample. Only 27% of the 268 firms took impairments in year t-1. We investigate why the remaining 73% (196 firms) reverted to BTM < 1 in year t without a year t-1 write-off. *Ex-ante*, there are three possible explanations:

(i) the observations are predominantly from year 2002, where impairment charges (if any) were recorded under the "changes in accounting principle" line-item;
(ii) the firms' BTM ratios in t-1 were just above one (if stock prices follow a random walk, BTM ratios in t are just as likely to be below one as above one); and
(iii) the managers had favorable private information that they successfully communicated to the market by the end of year t.

Of the 196 firms, we find 64% (126 firms) are from year 2002; by contrast, the average frequency of year-2002 observations among all other firm-categories in Appendix A is 43%. The comparison is statistically significant (p-value < 0.001), suggesting reason (i) can explain why a substantial fraction of the 196 firms revert to BTM < 1 in year t. To

test explanation (ii) above, we calculate the number of firms in the table that avoided impairments and that are within the BTM range of the 196 firms. We find there are 349 such firms, suggesting that the 196 firms ending year t with BTM < 1 represent approximately 50% of firms in their BTM range. This result is consistent with explanation (ii) above. Finally, with respect to explanation (iii) above, we calculate the proportion of the 196 firms that show evidence of having favorable information asymmetry vis-à-vis shareholders (defined as in *InfoAsym*, see Appendix B). Only 39% (77firms) of the 196 firms show such evidence, suggesting that managers' favorable private information is unlikely to explain why the bulk of the 196 firms reverted to BTM < 1 in year t without a year t-1 write-off.

Appendix B
Sample Description and Variable Definitions

Sample is the 124 firms on COMPUSTAT between years 2003 and 2006 that have goodwill > $1m in year t-2, equity-book-value < equity-market-value in year t-2, BTM > 1 in year t-1, BTM > 1 in year t, and goodwill > 0 at the beginning of year t. BTM is the ratio of equity-book-value plus goodwill impairment (if any) to equity-market-value.

Variable	Definition
Imp	Goodwill impairment (t) / Assets (t-1)
Size	Log[Assets (t-1)]
PropGw	Goodwill (t-1) / Assets (t-2)
BHRet	Buy-and-hold return over year t
NumQtrBTM>1	Number of quarters in year t with BTM > 1
InfoAsym	Dummy variable set to one if the firm exhibits positive net share repurchase activity or positive net insider buying in year t
CovDebt	Product of Debt (t) / Assets (t-1) and an indicator if the firm has a net worth or net income based debt covenant
Bonus	Dummy variable set to one if the firm's CEO received a cash bonus in year t
Tenure	Tenure of year t CEO in years
Delist	Dummy variable set to one if the firm trades on the NASDAQ or AMEX
AsstPrc	The coefficient from regressing a firm's price on its operating income using at least 16 and up to 20 quarters of data prior to year t
SegReOrg	Dummy variable set to one if the firm changed the number of segments reported under SFAS 131
ln(Seg)	Natural log of the number of business segments
*ln(Seg)*ln(Sales)*	Product of the natural logs of the number of business segments and firm sales
NumSICcodes	Natural log of the number of SIC codes covered by the firm's operations (as reported under SFAS 131)
HHI	The firm's Herfindahl Hirschman Index, calculated as the sum of the square of the ratios of segment sales to total firm sales
IndLev	Ind.Lev is the ranked mean leverage of the firm's industry (using 4-digit NAICS codes)
UNA0	–1*[Cash + Short Term Investments – Debt – Preferred Equity] ÷ [Assets – Liabilities]
UNA1	–1* [Cash + All Investments and Advances – Debt – Preferred Equity] ÷ [Assets – Liabilities]
UNA2	–1* [Cash + All Investments and Advances + Receivables – Payables – Debt – Preferred Equity] ÷ [Assets – Liabilities]
UNA3	–1* [Cash + All Investments and Advances + Receivables + Inventories – Payables – Debt – Preferred Equity] ÷ [Assets – Liabilities]

Table 1
Frequency of firms impairing goodwill

Panel A: Frequency of goodwill impairments in t

	no information asymmetry	information asymmetry	*Total*
no impairment in t	50	36	*86*
impairment in t	23	15	*38*
Total	*73*	*51*	*124*
% Not Impairing	*68%*	*71%*	*69%*

The chi-square statistic for the table has a p-value of 0.8034.

Panel B: Frequency of goodwill impairments in t or t-1

	no information asymmetry	information asymmetry	*Total*
no impairment in t	44	27	*71*
impairment in t	29	24	*53*
Total	*73*	*51*	*124*
% Not Impairing	*60%*	*53%*	*57%*

The chi-square statistic for the table has a p-value of 0.4167.

Table 1 ... Cont.

Panel C: Frequency of goodwill impairments in t among firms with only one business segment

	no information asymmetry	information asymmetry	*Total*
no impairment in t	22	14	*36*
impairment in t	11	5	*16*
Total	*33*	*19*	*52*
% Not Impairing	*67%*	*74%*	*69%*

The chi-square statistic for the table has a p-value of 0.5975.

Panel D: Frequency of goodwill impairments in t: Information asymmetry is defined only by positive net insider buying in year t

	no information asymmetry	information asymmetry	*Total*
no impairment in t	67	19	*86*
impairment in t	31	7	*38*
Total	*98*	*26*	*124*
% Not Impairing	*68%*	*73%*	*69%*

The chi-square statistic for the table has a p-value of 0.6433.

Table 1 ... Cont.

Panel E: Frequency of goodwill impairments in t: Information asymmetry is defined only by positive net share repurchase activity in year t

	no information asymmetry	information asymmetry	*Total*
no impairment in t	65	21	*86*
impairment in t	29	9	*38*
Total	*94*	*30*	*124*
% Not Impairing	*69%*	*70%*	*69%*

The chi-square statistic for the table has a p-value of 0.9298.

See Appendix B for a description of the sample and variable definitions.

Table 2
Mean BTM ratios of firms impairing goodwill

Panel A: Mean BTM ratios by goodwill impairments in t

		BTM_t-2	BTM_t-1	BTM_t
no impairment in t	86	0.8043	1.6756	1.4133
impairment in t	38	0.7158 [A]	1.5420 [B]	1.9284 [C]

The p-values for difference in means (no impairment v. impairment firms) are as follows: A=0.3756; B=0.5239; C=0.0666.

Panel B: Mean BTM ratios by goodwill impairments in t for firms with no information asymmetry.

		BTM_t-2	BTM_t-1	BTM_t
no impairment in t	50	0.6993	1.8284	1.4422
impairment in t	23	0.7596 [A]	1.6032 [B]	2.1417 [C]

The p-values for difference in means (no impairment v. impairment firms) are as follows: A=0.2846; B=0.4821; C=0.1237.

See Appendix B for a description of the sample and variable definitions.

Table 3
Summary statistics for variables in multivariate analyses

Variable	N	Median	Mean	Std Dev
Imp	124	0.000	0.047	0.122
Size	124	5.350	5.611	2.085
PropGw	124	0.141	0.256	0.464
BHRet	124	-0.072	0.051	0.627
NumQtrBTM>1	124	4.000	3.492	0.801
InfoAsym	124	0.000	0.411	0.494
CovDebt	124	0.000	0.013	0.073
Bonus	124	1.000	0.516	0.502
Tenure	124	4.000	5.526	5.635
Delist	124	1.000	0.516	0.502
AsstPrc	91	5.765	11.693	16.231
SegReOrg	123	0.000	0.163	0.371
ln(Seg)	123	0.693	0.707	0.663
*ln(Seg)*ln(Sales)*	123	3.634	4.087	4.520
NumSICcodes	123	0.693	0.523	0.542
HHI	123	0.768	0.746	0.256
IndLev	124	1192	1163	636
UNA0	124	0.274	0.572	1.287
UNA1	124	0.206	0.103	2.253
UNA2	124	0.103	-0.113	2.301
UNA3	122	-0.169	-0.371	2.140

See Appendix B for a description of the sample and variable definitions.

Table 4
Univariate correlations

Panel A: Proxies for the number and size of reporting units

		Imp	A	B	C
A	*ln(Seg)*	-0.2014			
		0.0255			
B	*ln(Seg)*ln(Sales)*	-0.2073	0.8909		
		0.0214	*<.0001*		
C	*NumSICcodes*	-0.1947	0.9123	0.8025	
		0.0309	*<.0001*	*<.0001*	
D	*HHI*	0.2139	-0.8933	-0.8257	-0.7950
		0.0175	*<.0001*	*<.0001*	*<.0001*

Panel B: Proxies for the unverifiability of net assets

		Imp	A	B	C	D
A	*IndLev*	0.1574				
		0.0808				
B	*UNA0*	-0.1666	-0.0276			
		0.0644	*0.7610*			
C	*UNA1*	-0.1367	0.0029	0.8577		
		0.1300	*0.9741*	*<.0001*		
D	*UNA2*	-0.0701	-0.0202	0.8111	0.9545	
		0.4390	*0.8240*	*<.0001*	*<.0001*	
E	*UNA3*	0.0852	0.0834	0.6474	0.7946	0.8474
		0.3466	*0.3570*	*<.0001*	*<.0001*	*<.0001*

See Appendix B for a description of the sample and variable definitions.

Table 4 ... Cont.

Panel C: Key independent variables

		Imp	A	B	C	D	E	F	G	H	I	J	K	L	M
A	*Size*	-0.1404													
		0.1199													
B	*PropGw*	0.1575	-0.0732												
		0.0807	*0.4192*												
C	*BHRet*	-0.1948	-0.1735	-0.0271											
		0.0301	*0.0539*	*0.7655*											
D	*NumQtrBTM>1*	-0.1928	0.1011	-0.1153	-0.0547										
		0.0319	*0.2638*	*0.2024*	*0.5462*										
E	*InfoAsym*	-0.0876	0.1349	0.0634	-0.1225	0.1009									
		0.3331	*0.1352*	*0.4843*	*0.1751*	*0.2651*									
F	*CovDebt*	-0.0698	-0.0517	0.0053	0.0988	-0.1501	-0.0088								
		0.4409	*0.5687*	*0.9531*	*0.2748*	*0.0961*	*0.9231*								
G	*Bonus*	-0.1125	0.2122	0.0930	0.2008	0.0307	0.0550	0.1157							
		0.2135	*0.0180*	*0.3040*	*0.0254*	*0.7354*	*0.5440*	*0.2008*							
H	*Tenure*	-0.1016	-0.0872	-0.0945	-0.0330	0.0363	0.0443	-0.1373	-0.1462						
		0.2614	*0.3357*	*0.2967*	*0.7159*	*0.6891*	*0.6253*	*0.1283*	*0.1052*						
I	*Delist*	0.0381	-0.2881	0.1205	-0.1263	-0.0907	0.0222	-0.0317	-0.1948	0.1047					
		0.6748	*0.0012*	*0.1825*	*0.1621*	*0.3166*	*0.8065*	*0.7266*	*0.0302*	*0.2472*					
J	*AsstPrc*	-0.0114	-0.0178	-0.0185	-0.1265	0.0957	0.1418	-0.0301	0.0200	0.1303	-0.0653				
		0.9149	*0.8673*	*0.8616*	*0.2323*	*0.3668*	*0.1800*	*0.7768*	*0.8505*	*0.2185*	*0.5385*				
K	*SegReOrg*	-0.0104	-0.0789	0.0048	-0.0165	0.1124	0.1211	-0.0804	0.0262	0.1391	-0.0108	-0.0435			
		0.9090	*0.3857*	*0.9585*	*0.8561*	*0.2159*	*0.1822*	*0.3767*	*0.7738*	*0.1248*	*0.9061*	*0.6840*			
L	*ln(Seg)*	-0.2014	0.2222	-0.0634	-0.0206	0.1214	0.0899	-0.1104	0.1115	-0.0561	-0.0400	-0.1137	0.2789		
		0.0255	*0.0135*	*0.4862*	*0.8213*	*0.1810*	*0.3230*	*0.2242*	*0.2195*	*0.5381*	*0.6607*	*0.2858*	*0.0018*		
M	*IndLev*	0.1574	-0.3488	0.1335	0.0687	-0.0510	0.0125	0.0819	0.2139	0.0518	-0.0371	0.0169	-0.0061	-0.1792	
		0.0808	*<.0001*	*0.1393*	*0.4482*	*0.5737*	*0.8904*	*0.3657*	*0.0171*	*0.5680*	*0.6826*	*0.8736*	*0.9467*	*0.0474*	
N	*UNA0*	-0.1666	0.2339	-0.0874	-0.0739	0.0781	0.0231	0.1643	-0.0063	-0.0440	-0.4202	-0.0202	-0.0611	-0.0552	-0.0276
		0.0644	*0.0089*	*0.3345*	*0.4145*	*0.3889*	*0.7988*	*0.0682*	*0.9445*	*0.6276*	*<.0001*	*0.8496*	*0.5017*	*0.5443*	*0.7610*

Table 5
Multivariate Analysis: OLS with heteroskedastic errors, Dependent Variable is Imp

	(A)		(B)		(C)		(D)	
Parameter	**Estimate**	**t Value**	**Estimate**	**t Value**	**Estimate**	**t Value**	**Estimate**	**t Value**
Intercept	0.19221	2.18	0.02982	0.63	0.27288	2.83	0.11629	1.88
Size	-0.00399	-0.72	0.00062	0.15	-0.00574	-1.07	-0.00227	-0.52
PropGw	0.02789	1.04	0.14747	3.68	0.02949	1.11	0.15575	3.96
BHRet	-0.04292	-1.58	0.01944	0.96	-0.04805	-1.71	0.01382	0.63
NumQtrBTM>1	-0.02668	-1.67	-0.00634	-0.59	-0.02505	-1.65	-0.00701	-0.62
InfoAsym	-0.02085	-1.13	-0.00715	-0.51	-0.01807	-0.98	-0.00682	-0.49
CovDebt	-0.19158	-2.32	-0.25874	-2.82	-0.13059	-1.46	-0.25114	-3.03
Bonus	-0.02106	-0.93	-0.03061	-1.98	-0.01603	-0.71	-0.02424	-1.72
Tenure	-0.00324	-2.28	-0.00312	-2.31	-0.00294	-2.05	-0.00280	-2.49
Delist	-0.00862	-0.30	0.01333	0.78	-0.03146	-0.89	-0.00607	-0.39
AsstPrc	.	.	0.00018	0.37	.	.	0.00008	0.17
SegReOrg	0.02318	1.10	0.02129	1.03	0.01972	0.96	0.01645	0.81
ln(Seg)	-0.03045	-2.05	-0.01775	-1.67	-0.03538	-2.33	-0.02129	-1.79
IndLev	0.00002	1.73	0.00003	1.99	.	.	.	.
UNA0	.	.	.	.	-0.00063	-1.77	-0.00046	-2.28
Adj R-Sq	*0.1086*		*0.2800*		*0.1232*		*0.2723*	
N	*123*		*90*		*123*		*90*	

See Appendix B for a description of the sample and variable definitions.

Table 5 ... Cont.

	(E)		(F)		(G)		(H)		(I)		(J)	
Parameter	**Estimate**	**t Value**	**Estimate**	**t Value**	**Estimate**	**t Value**	**Estimate**	**t Value**	**Estimate**	**t Value**	**Estimate**	**t Value**
Intercept	0.17649	2.04	0.25224	2.65	0.19281	2.17	0.27184	2.80	0.12021	1.45	0.18308	2.06
Size	-0.00173	-0.29	-0.00327	-0.55	-0.00479	-0.85	-0.00663	-1.22	-0.00414	-0.73	-0.00564	-1.03
PropGw	0.02938	1.13	0.03130	1.23	0.02921	1.08	0.03098	1.16	0.02795	1.06	0.02927	1.14
BHRet	-0.04237	-1.54	-0.04722	-1.65	-0.04311	-1.59	-0.04815	-1.71	-0.04199	-1.55	-0.04674	-1.67
NumQtrBTM>1	-0.02659	-1.64	-0.02509	-1.62	-0.02650	-1.64	-0.02486	-1.61	-0.02650	-1.66	-0.02475	-1.63
InfoAsym	-0.02184	-1.17	-0.01930	-1.04	-0.02183	-1.16	-0.01927	-1.03	-0.02232	-1.19	-0.01989	-1.06
CovDebt	-0.18081	-2.40	-0.12191	-1.46	-0.18366	-2.25	-0.12306	-1.38	-0.17829	-2.14	-0.11639	-1.26
Bonus	-0.02369	-1.05	-0.01879	-0.83	-0.01992	-0.87	-0.01474	-0.65	-0.01960	-0.85	-0.01456	-0.63
Tenure	-0.00304	-2.18	-0.00272	-1.97	-0.00312	-2.21	-0.00281	-1.99	-0.00312	-2.23	-0.00283	-2.03
Delist	-0.01151	-0.40	-0.03349	-0.94	-0.01016	-0.35	-0.03268	-0.92	-0.00801	-0.28	-0.03024	-0.85
SegReOrg	0.01891	0.86	0.01480	0.68	0.01688	0.79	0.01261	0.60	0.01685	0.77	0.01303	0.61
*ln(Seg)*ln(Sales)*	-0.00404	-1.96	-0.00463	-2.17	.	.	.	.	.	.	.	.
NumSICcodes	.	.	.	.	-0.03309	-1.94	-0.03871	-2.23	.	.	.	.
HHI	.	.	.	.	.	.	.	.	0.06898	1.95	0.08378	2.34
IndLev	0.00002	1.71	.	.	0.00002	1.69	.	.	0.00002	1.65	.	.
UNA0	.	.	-0.00059	-1.66	.	.	-0.00061	-1.74	.	.	-0.00062	-1.75
Adj R-Sq	*0.1000*		*0.1112*		*0.1047*		*0.1186*		*0.1031*		*0.1186*	
N	*123*		*123*		*123*		*123*		*123*		*123*	

See Appendix B for a description of the sample and variable definitions.

Table 5 ... Cont.

	(K)		(L)		(M)	
Parameter	**Estimate**	**t Value**	**Estimate**	**t Value**	**Estimate**	**t Value**
Intercept	0.28451	2.84	0.27743	2.73	0.23557	2.49
Size	-0.00752	-1.28	-0.00734	-1.26	-0.00721	-1.21
PropGw	0.03263	1.18	0.03277	1.18	0.03060	1.09
BHRet	-0.05162	-1.89	-0.05174	-1.85	-0.04484	-1.65
NumQtrBTM>1	-0.02504	-1.63	-0.02605	-1.66	-0.02697	-1.68
InfoAsym	-0.02112	-1.13	-0.02050	-1.09	-0.01929	-1.03
CovDebt	-0.12117	-1.35	-0.14399	-1.65	-0.18738	-2.03
Bonus	-0.01677	-0.74	-0.01679	-0.73	-0.01176	-0.54
Tenure	-0.00291	-2.04	-0.00315	-2.16	-0.00304	-2.07
Delist	-0.03060	-0.89	-0.02735	-0.79	-0.01253	-0.39
SegReOrg	0.01825	0.88	0.01763	0.84	0.02168	1.04
ln(Seg)	-0.03405	-2.26	-0.03369	-2.25	-0.03281	-2.20
UNA1	-0.00066	-1.94	.	.	.	.
UNA2	.	.	-0.00052	-1.60	.	.
UNA3	.	.	.	.	0.00001	0.03
Adj R-Sq	*0.1290*		*0.1149*		*0.0956*	
N	*123*		*123*		*122*	

See Appendix B for a description of the sample and variable definitions.

Table 6
Analysis of firms in the year t+1 (subject to data availability)

Panel A: Number of firms by status as acquired, delisted, or active

	no information asymmetry	information asymmetry	*Total*
Acquired	11 (15%)	7 (14%)	*18 (14.5%)*
Delisted	16 (22%)	2 (4%)	*18(14.5%)*
Active	46 (63%)	42 (82%)	*88 (71%)*
Total	*73*	*51*	*124*

The chi-square statistic for the table has a p-value of 0.0156.

Panel B: Firms without information asymmetry by status as acquired, delisted, or active

	no impairment	impairment	*Total*
Acquired	10 (20%)	1 (4%)	*11 (15%)*
Delisted	8 (16%)	8 (35%)	*16 (22%)*
Active	32 (64%)	14 (61%)	*46 (63%)*
Total	*50*	*23*	*73*

The chi-square statistic for the table has a p-value of 0.0773.

"Acquired" means that the firm was merged into another corporation. "Delisted" means that the firm filed for bankruptcy, was liquidated, was forced to trade over-the-counter, or was otherwise involuntarily delisted. "Active" means that the firm is still actively traded and regularly files financial reports with the SEC. See Appendix B for a description of the sample and all other variable definitions.