1-1-2011

The new guideline for goodwill impairment

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THE NEW GUIDELINE FOR GOODWILL IMPAIRMENT: JUST ANOTHER TOOL FOR EARNINGS MANAGEMENT?

By

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A Dissertation
Submitted to the Faculty of
Mississippi State University
in Partial fulfillment of the Requirements
for the Degree of Doctor of Philosophy
in Accounting
in the School of Accountancy

Mississippi State, Mississippi

December 2007

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Title of Study: THE NEW GUIDELINE FOR GOODWILL IMPAIRMENT: JUST ANOTHER TOOL FOR EARNINGS MANAGEMENT?

Pages in Study: 111

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Goodwill, for financial accounting purposes, is an intangible asset on the balance sheet that represents the excess of the amount paid for an acquired entity over the net fair value of the assets acquired. The Financial Accounting Standards Board has recently issued a new mandate. This new guideline eliminates annual amortization of goodwill and requires annual valuation for potential goodwill impairment and consequent writedown. Determining the amount of impairment requires management estimation, thus, allowing managerial discretion in developing the impairment amounts. Managerial discretion may then be used to manage earnings.

Earnings management occurs when managers exercise their professional judgment in financial reporting to manipulate earnings. Prior literature documents that managers have strong motivations to manage earnings. Managers sometimes respond to these motivations by managing earnings to exceed key earnings thresholds. The new

goodwill guideline might be used as an earnings management tool. Thus, this dissertation examines whether earnings management results from the judgmental latitude allowed in estimating goodwill when earnings will otherwise just miss key earnings benchmarks.

Specifically, this study tests goodwill impairment writedowns in a cross-sectional distributional analysis for the year 2002, the first year following the effective date of the new goodwill standards. The sample is taken from the financial information of publicly-traded companies tracked in the Compustat and CRSP databases. To identify firms that are likely to have managed earnings to exceed key benchmarks, earnings per share, both before and after goodwill impairment writedowns, is compared with two thresholds established in prior research. The first is a positive earnings per share and the second is the prior year's earnings per share. Results from applying both tobit and logistic regression models suggest that managers are exploiting their discretion in recognizing goodwill impairments to manage earnings. Thus, this project contributes to the earnings management literature in that it highlights the exploitation of increased judgmental latitude for earnings management purposes.

DEDICATION

I dedicate this research to my mother, Jewel Mathis Swanson, and to my brothers, Robert E. Swanson and Nathan D. Swanson. Their constant support and encouragement kept me going throughout this process.

ACKNOWLEDGEMENTS

The author expresses her sincere gratitude to the many people without whose assistance this dissertation could not have materialized. First of all, sincere thanks are due to Dr. Laurie L. Burney, my committee director, for graciously spending tremendous amounts of time and effort to guide and assist me throughout the dissertation process. I am also grateful to Dr. Randall C. Campbell for his invaluable assistance with the statistical elements of this dissertation. I also express gratitude to the other members of my dissertation committee, Dr. Frances E. McNair, Dr. Benjamin F. Blair, Dr. John T. Rigsby, and Dr. Barbara A. Spencer, for the invaluable aid and direction provided by them. Finally, I am very grateful to Dr. Jeff Boone for the efforts he put into the methods and financial accounting seminars and for the direction and guidance he provided in the early stages of this dissertation.

On a personal level, I am grateful to my family for their constant support. My mother, Jewel M. Swanson, and my brothers, W.A. McCormick, Jimmie D. McCormick, Paul A. Swanson, David L. Swanson, Robert E. Swanson, John P. Swanson, and Nathan D. Swanson, and their families have given me much support and encouragement. In addition, I thank my friends Donna and Roger King who have been so good to me, assisting me both materially and emotionally throughout this dissertation process.

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CHAPTER I

INTRODUCTION

Goodwill, for financial accounting purposes, is an intangible asset on the balance sheet that represents the excess of the amount paid for an acquired entity over the net fair value of the assets acquired (FAS 142). The Financial Accounting Standards Board (FASB) has recently modified the rule regarding accounting for goodwill. FASB Statement No. 142 (FAS 142) eliminates annual amortization of goodwill and requires annual valuation to determine whether goodwill is impaired. If goodwill is impaired, then a writedown is recognized on the income statement. Determining the amount of impairment requires management estimation, thus, allowing managerial discretion in developing the impairment amounts. Managerial discretion can then be used to manage earnings, as documented in prior research (Degeorge, Patel, and Zeckhauser, 1999; Dechow and Skinner, 2000; Altamuro, Beatty, and Weber, 2005).

Managers must use professional judgment in financial reporting. Earnings management occurs when this judgment is used as a facade to manipulate earnings (Healy and Wahlen, 1999). Prior literature provides evidence that managers have strong motivations, including capital market incentives, contracting incentives, and political incentives, to manage earnings (Bartov, Givoly, and Hayn, 2002; Dechow and Skinner, 2000; DeFond and Jiambalvo, 1994). Managers may respond to these motivations by

managing earnings to exceed key earnings thresholds (Graham, Harvey, and Rajgopal, 2005; Degeorge et al., 1999). The role of earnings management has, therefore, become an important issue in accounting research (Healy and Wahlen, 1999). This dissertation examines evidence regarding manager discretion, which may lead to earnings management through the valuation of goodwill when earnings will otherwise just miss key earnings benchmarks. Implications from this line of research can be used in assessing earnings management pervasiveness as well as overall financial reporting integrity (Healy and Wahlen, 1999).

The new rule for accounting for goodwill provides an opportunity for earnings management not available under the previous rule. The previous rule, set by the Accounting Principles Board (APB) in Opinion 17 (APB 17), was based upon the presumption that goodwill was a wasting asset (i.e., finite lived). As such, APB 17 mandated that goodwill should be amortized (expensed) over a maximum period of 40 years when calculating net income. The new rule regarding goodwill, set forth in FAS 142, does not presume that goodwill is a wasting asset. Rather, the FASB considers goodwill to have an indefinite life, which should not be amortized but rather should be tested on an annual basis for impairment (FAS 142, Summary). The estimates required in the testing of goodwill for impairment require considerable managerial judgment, thereby increasing the potential for earnings management beyond that which was previously available (Watts, 2003a). This project addresses the question: Do managers exploit their discretion in recognizing goodwill impairments to manage earnings?

Agency theory drives this study, prompting a critical look at how closely the agent (e.g., management) complies with and strives to accomplish the goals of the principals (e.g., the owners). Agency theory makes the presumption that both principals and agents are motivated by self-interests while recognizing that cooperative effort must be made to accomplish the goals of both parties (Fama, 1980). Agency theory is tested in this study by considering whether managers exploit the discretion allowed them under the new accounting guideline for taking goodwill impairment writedowns.

This study is important because the FASB may not have accomplished what was intended when setting these standards if the new goodwill impairment rule is being used as a tool for earnings management. The FASB's primary intent in making the change was to produce financial statements that would more accurately reflect the underlying economics of the goodwill asset (FAS 142). If, however, the goodwill impairment rule is being used as a tool for earnings management, both the goodwill value and the level of earnings reported in the financial statements may be distorted.

The findings of this study are also important because prior literature indicates that standard setters need to know which standards and which accruals are being used to manage earnings (Healy and Wahlen, 1999). Schipper and Vincent (2003) address the question of the need for additional accounting standards to prevent earnings management. Comparability of accounting numbers is potentially more impaired when greater amounts of managerial estimates are involved in the preparation of financial statements, particularly when there is an attempt to "subvert the intent of the standards" (Schipper

and Vincent, 2003, p. 105). As such, Schipper and Vincent acknowledge that more detailed guidelines might be considered. Results from this dissertation further inform this question, suggesting that managers exploit their discretion in recognizing goodwill impairments to manage earnings and that further regulatory action may be necessary. Thus, this project contributes to the earnings management literature in that it highlights the immediate exploitation of increased judgmental latitude for earnings management purposes.

This study tests goodwill impairment writedowns taken for the year 2002 from publicly- traded companies, whose financial information is contained in the Compustat[1] and CRSP[2] databases. Earnings per share, both before and after goodwill impairment writedowns, is compared with two primary thresholds established in prior research. The first threshold is whether the firm achieved positive earnings per share and the second threshold is whether the firm made or exceeded prior year's earnings per share. Both tobit and logistic regressions are utilized to test the sample data. First, a set of seven equations analyze the data using tobit regressions. Second, to test the robustness of the tobit results, a set of seven equations evaluated with logistic regressions are also performed on the data. Most of the hypotheses are supported by the results of the tobit regressions performed on the sample data. The logistics regressions support the logit results, adding robustness to the results. Results from applying both tobit and logistic regression models, then, provide some evidence that managers are exploiting their

[1] The Compustat database contains information from the financial statements of publicly-traded companies.

discretion in recognizing goodwill impairments to manage earnings.

The balance of this dissertation is segmented as follows. Chapter II is a review of the relevant literature. Chapter III develops the hypotheses and discusses the research methodology. Chapter IV presents the results of the analyses. Chapter V presents the conclusions and discusses the implications of the study.

[2] The CRSP database tracks returns on the stocks of publicly-traded companies.

CHAPTER II

LITERATURE REVIEW

Introduction

To properly fulfill the duties required for financial reporting, managers must use professional judgment. This inherent judgmental latitude, however, can be used to camouflage management (or manipulation) of earnings. Managers are subjected to strong motivations to manage earnings, especially to exceed key earnings thresholds (Graham et al., 2005; Degeorge et al., 1999).

Goodwill is an intangible asset on the balance sheet that represents the "excess of the cost of an acquired entity over the net of the amounts assigned to assets acquired and liabilities assumed" (FAS 142, par. F1). The new accounting rule with respect to goodwill provides an opportunity for earnings management beyond that which was available under the previous rule. The previous rule, set by the Accounting Principles Board (APB) in Opinion 17 (APB 17), was based upon the presumption that goodwill was a wasting asset (i.e., finite lived) and, as such, should be amortized over a maximum period of 40 years. The FASB, under the presumption that goodwill is not a wasting asset, changed the rule. Considering goodwill to have an indefinite life, the FASB mandated that goodwill should not be amortized but rather should be tested on an annual basis, at a minimum, for impairment (FAS 142).

The FASB's primary intent in making these changes was that financial statements would better reflect the underlying economics of the goodwill asset (FAS 142). If the new goodwill impairment rule is being used as a tool for earnings management, however, the goodwill value reported in the financial statements may be distorted, either through the level (dollar amount) or direction (increased or decreased earnings) of earnings management taken.

Standard setters need to know which standards and which accruals are being used to manage earnings. Such information will highlight areas in need of corrective action by the standard setters. Therefore, information as to whether FAS 142 via goodwill impairment write-offs is being used to manage earnings would be useful information to the FASB and other standard setters.

Agency Theory

Coase (1937) proposed that firms exist and vary in size because of transaction costs. Transaction costs are saved when property owners pool their rights and cooperate in planned economic activity, thereby making it more advantageous to contract with a firm rather than ordering from the open market. Firms arrive at an appropriate size that is determined at the margin when the transaction cost savings are compared with the costs of the firm's internal planning and contract monitoring.

When property owners pool their rights and cooperate in economic activity, an agency relationship emerges. Jensen and Meckling (1976) define an agency relationship

as a contractual relationship where one party, the principal, engages another party, the agent, to perform services on behalf of the principal. The contract includes delegation of authority for the agent to make some decisions on behalf of the principal. Thus, Baiman (1982) defines the firm as "an overlapping set of contracts among principals and agents, each of whom is assumed to be motivated solely by self-interest" (p. 155).

Two troublesome characteristics of the agency relationship are information asymmetry and lack of goal congruence (Gomez-Mejia and Wiseman, 2007). Information asymmetry exists because the agent has access to information of which the principal is unaware. Goal congruence is the designing of an agency contract such that the goals of the agent are properly aligned with the goals of the principal, while keeping the costs of doing so as low as possible. Goal congruence is desirable to encourage the agent to accomplish the goals of the principal, even in the principal's absence.

Although agency theory portrays principals and agents as being motivated primarily by self-interest, both parties recognize that some level of cooperative effort is needed to accomplish their individual goals and to compete with other firms (Fama, 1980). Since the individual is successful only if the firm is successful, a cooperative effort should result in a Pareto improvement. That is, an increase to the welfare of one party should not harm the other party (Baiman, 1982).

Beaver (1998) states that financial reporting typically plays two distinct, although related, informational roles in the principal-agent relationship: evaluation and contracting. The role of evaluation is to assist investors and other decision makers in

choosing the best financial alternative available, such as the best investment portfolio. The role of contracting is to encourage goal congruence by tying the agent's compensation to performance, often defined in financial reporting terms. One example is a management incentive contract that is partially based on the firm's net income. As such, these roles highlight why the choice of accounting methods is considered to be so important to management, investors, and financial reporting regulators.

This dissertation tests agency theory in a setting where the manager has discretion over the amount of goodwill impairment writedown taken. The agency contract, which is structured to encourage goal congruence, drives the actions taken by the manager. Information asymmetry gives the advantage to the manager, since the manager possesses information to which the principal does not have access. The manager, driven by self-interest, will attempt to maximize his self-interest by achieving firm goals that are tied to his contract, such as hitting the profit/sales levels necessary to collect the maximum executive compensation, as well as capital market goals and political costs savings. As such, the manager may use his discretion in determining the amount of goodwill impairment writedowns to manage earnings to desired levels.

This dissertation is concerned with both roles of financial reporting since the magnitude of accruals can alter the reported value of a company and the value of its earnings. Thus, first, the magnitude of accruals could affect the decision maker's *evaluation* of one company as opposed to another. Second, the magnitude of accruals

could also impact *contracting* by either artificially increasing or decreasing the value of a company or its reported earnings, and therefore, the compensation earned by managers.

Earnings Management

Managers must use judgment in financial reporting. Earnings management is always a possibility due to this judgmental latitude. Two basic definitions of earnings management are given in the accounting literature. Earnings management is considered to be stellar and commendable when managerial judgment is used as a tool to more accurately report the underlying economic performance of a company to its stakeholders (Francis, Hanna, and Vincent, 1996). However, earnings management is not considered commendable when managerial judgment is used to "either mislead stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers" (Healy and Wahlen, 1999, p. 368).

Schipper (1989) refers to the first of these two types of behavior as coming from an "informational perspective." Pourciau (1993) refers to the second of these two types of behavior as "opportunistic" earnings management. Obviously, opportunistic earnings management can result in financial reports that range from a slight misrepresentation to a gross misrepresentation of the underlying economic performance or condition of a company. The role of earnings management has thus become an important issue in accounting research. Evidence from earnings management accounting research should

help both regulators and standard setters to better assess earnings management pervasiveness and overall financial reporting integrity (Healy and Wahlen, 1999).

Prior research has shown that both managers and shareholders have powerful inducements to manage earnings, particularly to meet or beat key earnings benchmarks (Graham et al., 2005; Degeorge et al., 1999; Dye, 1988). These inducements include capital market incentives, contracting incentives, and political incentives (Graham et al., 2005; Bartov et al., 2002; Dechow and Skinner, 2000; DeFond and Jiambalvo, 1994).

Several techniques by which earnings management is accomplished have been acknowledged in prior literature. These techniques include:

- Income Smoothing. Income smoothing is the deliberate manipulation of the timing of reported income and expenses to achieve a stable level of income (Fudenberg and Tirole, 1995).[3] Typically, income smoothing is combined with an effort to avoid earnings decreases and small losses. That is, income smoothing is used to help reflect an on-going pattern of small earnings increases (Burghstahler and Dichev, 1997).[4]
- "Cookie Jar" Reserves. "Cookie jar" reserves are created by delaying recognition of income (or expenses) until later periods when income is less (or more) than the desired level to meet key earnings benchmarks (Giroux, 2004).[5]

[3] An implicit assumption is that management engages in income smoothing to improve the perceived value of its performance (Lambert, 1984).
[4] Greater than 50% of the enforcement cases filed by the SEC in 1999 and 2000 involved accelerated revenue recognition issues (Sevin and Schroeder, 2005).
[5] Cookie jar reserves are typically used in the effort to smooth income.

- Accelerating Revenue Recognition. Accelerating revenue recognition is the recording of revenue prior to its being earned (Sevin and Schroeder, 2005).
- "Big Bath" Charges. "Big bath" charges are the aggressive overstatement of charges in a period when earnings have already not met key earnings benchmarks. Thus, big bath charges typically result in lower expense in future periods, improving future earnings reports and reducing their variability (Jordan and Clark, 2004; Walsh, Craig, and Clark, 1991).[6]
- Discretion in Accounting Estimates. Discretion in estimates is the latitude allowed managers to determine the level or amount of estimated expense (such as bad debt, research and development costs, and asset impairment loss) to recognize within the confines of generally accepted accounting principles (GAAP).
- Discretion in Accounting Method Choices. Discretion in accounting choices is the latitude allowed managers to choose among alternative methods of accounting (such as depreciation methods) within the confines of GAAP (Heflin, Kwon, and Wild, 2002).[7]

[6] Elliott and Shaw (1988) defined a big bath as a writedown that exceeds 1% of the book value of the firm's assets. The "opportunity to take the bath is always there and management has the discretion to choose just when, and how hard, to turn on the tap" (Walsh et al., 1991, p. 174). The penalty for taking a big bath does not appear to be much greater than the penalty for missing an earnings benchmark by a small amount (Jordan and Clark, 2004).

[7] Research has shown that contractual agreements largely determine managers' accounting choices (Heflin et al., 2002).

Accounting Standards

Goodwill is an intangible asset on the balance sheet that represents the excess amount paid for an acquired entity above the net fair values of the acquired assets and assumed liabilities (FAS 142). The APB set the rule for accounting for goodwill in APB 17 that became effective in 1970. This rule was based upon the presumption that goodwill is a wasting asset (i.e., finite lived) and, as such, should be amortized when calculating net income (APB 17, par. 29).

After 32 years,[8] the rule regarding goodwill was changed by the FASB. The FASB established the new guideline for writedowns of goodwill when it issued the following statements in tandem: FASB Statement 141 (FAS 141) - Business Combinations and FASB Statement 142 (FAS 142) - Goodwill and Other Intangible Assets. Both statements are effective for all new business combinations,[9] which have a start date subsequent to June 30, 2001 (FAS 141 and FAS 142). FAS 142 is effective for all other goodwill assets for fiscal years beginning after December 15, 2001 (FAS 142). "Other goodwill" as mentioned here is goodwill that is on the balance sheet from acquisitions prior to June 30, 2001.

FAS 141 eliminates the Pooling-of-Interests[10] accounting for business combinations, thereby requiring that all business combinations be recorded under the

[8] Par. 33 of APB 17 established its effective date as after October 31, 1970.
[9] FAS 141 and FAS 142 are, however, not effective for combinations between mutual companies or for not-for-profit combinations.
[10] The pooling-of-interests method to record business combinations uses historical values of the assets from the firms being combined.

Purchase Method[11] (FAS 141, par. 13). FAS 141 effectively dictates that goodwill will become a potential asset in every business combination since goodwill represents the excess of the amount paid for an acquired entity above the net fair values of the acquired assets and assumed liabilities. Goodwill was not recorded under the pooling-of-interests method because the method simply combined the historical book values of the assets and liabilities of both firms.

Contrary to the presumption of APB 17, FAS 142 does not assume that goodwill is a wasting asset. Rather, the FASB considers goodwill to have an indefinite life (FAS 142, Summary). Therefore, FAS 142 eliminates annual amortization of goodwill and mandates annual valuation for potential impairment of goodwill with consequent writedown.

Impairment testing is conducted on a reporting unit level. A reporting unit is "an operating segment or one level below an operating segment" (FAS 142, par. F1). An operating segment is defined by FAS 131, par. 10 as follows:

> An *operating segment* is a component of an enterprise:
> a. that engages in business activities from which it may earn revenues and incur expenses,
> b. whose operating results are regularly reviewed by the enterprise's chief operating decision maker to make decisions about resources to be allocated to the segment and assess its performance, and
> c. for which discrete financial information is available.

[11] The purchase method makes the assumption that one firm is the acquirer and the purchase is recorded by the acquirer using the fair values of the assets of the firm being acquired.

Impairment testing is a two-step process. First, potential impairment is identified by comparing "the fair value of a reporting unit with its carrying value, including goodwill" (FAS 142, par. 19). Second, the amount of impairment, if any, is measured as the amount that the carrying value exceeds the fair value of the assets of the reporting unit. However, the impairment loss is limited to the "carrying amount of goodwill" (FAS 142, par. 20). Goodwill impairment loss recognized by a subsidiary will only be recognized at the consolidated level if the goodwill of the consolidated unit is also impaired (FAS 142, par. 37).

The following is an example of impairment testing:[12]

> Holly, Inc. purchased its Britt division two years ago for $3 million. Holly is performing the annual impairment test on its Britt division.
>
> The net assets of the Britt division have the following carrying values:
>
Cash	$ 350,000
Receivables	500,000
Inventories	900,000
Property, Plant, and Equipment (net)	1,200,000
Goodwill	1,000,000
Less: Notes Payable	(400,000)
Net Assets	$3,550,000
>
> If Holly determines that the fair value of the Britt division is $4 million, it will not recognize an impairment loss because the fair value of Britt is greater than the carrying value of its net assets.
>
> If, however, the fair value of the Britt division is determined to be $3 million, then the impairment loss will

[12] This example of impairment testing is designed along similar lines to that provided in the text by Kieso, Weygandt, and Warfield (2007) as directed by the guidelines provided in FAS 142.

be calculated by first calculating the "implied" value of goodwill and comparing it with the carrying value of goodwill as follows:

Fair value of Britt division	$3,000,000
Carrying value of net assets, excluding goodwill	2,550,000
Implied value of goodwill	$ 450,000

Carrying value of goodwill	$1,000,000
Implied value of goodwill	450,000
Impairment Loss	$ 550,000

This impairment test should be performed on all divisions that have the goodwill asset. Finally, this test should be performed for the overall consolidated unit, Holly, to determine if an impairment loss exists at the consolidated level. The impairment loss for the Britt division will only be recognized at the consolidated level if an impairment loss also exists at the consolidated level.

Goodwill impairment testing shall be conducted at a minimum on an annual basis, with an initial transitional test to be conducted as of the beginning of the fiscal year that FAS 142 becomes applicable to a reporting entity. Thus, in the year of implementation, an entity may report two separate writedowns: one related to the initial transitional test and the other resulting from the fiscal year-end valuation. Subsequent reversal of goodwill impairment writedowns is prohibited (FAS 142).

The FASB mandated the new rule for the accounting of goodwill because the FASB concluded that the changes would result in financial statements that are a better reflection, or a more faithful representation, of the underlying economic condition of the firm (FAS 142). FASB Concepts Statement No. 2, *Qualitative Characteristics of*

Accounting Information, puts forth the concept of "representational faithfulness" as a desirable characteristic of financial statements. However, the new rule may provide an opportunity for earnings management unavailable under the previous rule. This opportunity arises from the new flexibility in the amounts and timing of goodwill writedowns.

The American Institute of Certified Public Accountants (AICPA) has responded to the new rule for accounting for goodwill by developing a valuation standard to assist its members in this valuation process. It has issued an Exposure Draft, *Valuation of a Business, Business Ownership Interest, Security, or Intangible Asset*, that specifically addresses the issues involved. The Exposure Draft is now in its second revision, dated October 16, 2006 with a request for comments that was open for discussion through December 15, 2006. Once finalized, the valuation standard will become binding on all AICPA members.

Although the valuation standard is not yet finalized, the impact of FAS 141 and 142 can be immediately seen in accounting for in-process research and development (IPR&D) write-offs. Over the past decade, many corporations have been criticized for managing earnings by taking excessive IPR&D write-offs. IPR&D costs were often lumped together with a portion of the goodwill asset, resulting in an IPR&D write-off that actually was a combined write-off of IPR&D and goodwill. FAS 142 effectively requires more transparent accounting by requiring that goodwill be separately accounted for on both the balance sheet and income statement (Patrick, 2005).

Prior to FAS 141 and 142, many managers favored high IPR&D write-offs as it would lower future goodwill amortization charges, thereby increasing future earnings per share.[13] In addition, the lower asset base would result in higher profitability ratios. Prior to the 1990s, the percentages of write-offs for IPR&D were insignificant. However, write-offs of these costs have become large percentages (sometimes greater than 75%) of the purchase price. As a result, scrutiny of these write-offs by the Securities and Exchange Commission (SEC) has also increased (Patrick, 2005).

As mentioned above, prior to FAS 141 and 142, most companies lumped other intangibles with goodwill. Whether intended or not, combining other intangibles with the goodwill asset results in an overstatement of goodwill (Reason, 2003). Firms then amortized the combined intangible assets over the weighted average life of all the intangible assets. This approach often led to an amortization period shorter than the 40-year amortization period for goodwill. The practice, even though not technically correct, was inexpensive and was accepted by both auditors and the SEC. However, following the passage of FAS 141 and 142, the SEC is increasingly challenging the valuation practices of public companies, placing heavy emphasis on goodwill accounting. As a result, public companies have begun paying large amounts of money for valuation services that offer a structured valuation process as well as a paper trail (Reason, 2003).

[13] Sufficiently high level of write-offs of IPR&D to lower future expenses is an example of earnings management via big-bath charges.

Popular Press

The popular press has readily acknowledged the existence of opportunistic earnings management. For example, while speculating on the impact of the September 11, 2001 attacks on the U.S., Henry (2001), writing for *Business Week*, concluded that many companies would use the attacks as an excuse for not making the expected profits for the year. Under the guise of losses from the attacks, the expectation was that earnings management would be overwhelmingly used to artificially lower earnings in 2001. Taking excess losses, or a "big bath," in 2001 was expected to help create rosy results for 2002. Henry (2001) expressed concern that earnings management would so seriously distort reported earnings that the investor who relied on reported earnings to make decisions during the 2001-2002 period was indeed in peril. Charles L. Hill, research director at First Call[14], is quoted as saying that earnings management has been so frequently engaged that "open season" has been declared on investors.

This obvious and overt use of earnings management has come with the blessings of many Wall Street analysts. Sean Ryan, a bank analyst at the Fulcrum Global Partners brokerage firm stated "There is a tolerance bordering on a thirst for earnings management. As irrational as it may be, the market is likely to reward banks that ball up all of their problems and take big hits in the second half of this year" (Henry, 2001, p. 46).

[14] First Call, a Thomson Financial company, is a brokerage research firm. Thomson Financial provides financial information services worldwide.

Transparency in financial reporting exists when the financial statements faithfully represent and clearly communicate the underlying financial condition of the firm. The need for more transparency in financial reporting was readily acknowledged, especially since recent scandalous and fraudulent behavior, such as the Enron and WorldCom debacles, has cost the investing public heavily (Fink, 2006). Implementation of FAS 141 and 142 improves financial reporting by requiring increased transparency. Managers must now report identifiable intangible assets separately and must include a line item on the income statement to communicate impairment loss.

Several industries have weighed-in on the new goodwill accounting rule. Most have indicated initial skepticism followed by an appreciation of the results available due to the use of the purchase method and of more transparent accounting practices. The opinions expressed by a few of the industry publications are briefly discussed in the next paragraphs.

Investment bankers said that the change of method seems to have increased rationality in the bank merger and acquisition process (Cocheo, 2002). Although initially concerned over the loss of the pooling method, the banking community has come to realize that the change to the 'purchase method only' is really to its advantage. The purchase method created new opportunities in acquisitions. One such opportunity is the ability to acquire only a portion of a target rather than having to acquire the entire operation. Charles Miller, managing director of Alex Sheshunoff & Co. of Austin, Texas

is quoted as saying "Pooling was so restrictive. Purchase accounting allows you to do what makes economic sense" (Cocheo, 2002, p. 8).

The media industry has been greatly impacted by the new goodwill rule, especially those that made huge acquisitions in the years just prior to the effective date of the new rule (Higgins, 2002). AOL reduced its asset base by 25%-30% by writing off goodwill related to its Time Warner takeover in January 2001. Speaking of the initial evaluation and write-off required per the new standard, media analyst Tom Wolzien is quoted as saying "This is your one-time chance to open up the closet and bring out the skeletons" (Higgins, 2002, p. 7).

The marketplace recognized that the new goodwill rule would have a big impact on those firms that were primarily built through acquisitions. Korman (2002), writing for *Engineering News*, acknowledged that these firms would take a big hit to their balance sheets in 2002, indicating that this hit could prove difficult for contractors as it could limit the abilities of these firms to acquire surety bonds. However, Korman also remained optimistic that most of the damage would come with the initial writedown, thereby increasing earnings per share in future accounting periods.

The electronics/high-tech industry has used the new goodwill accounting rule as an impetus to adopt policies of greater disclosure of information to its customers, vendors, and investors (Ojo, 2002). David Hawkins, an accounting consultant to Merrill Lynch & Co., Inc., New York, states that "FAS 142 … [has] the potential to provide investors with many valuation and financial analysis insights into the companies they

follow. Do not miss this opportunity. Check out which reporting units are giving rise to the goodwill impairment charge" (Ojo, 2002, p. 1).

Since FAS 142 eliminates amortization, the electronics industry also viewed FAS 142 as eliminating the need for pro forma reporting (Ojo, 2002). Thus, implementation of FAS 142 is expected to improve financial reporting. However, analysts expect companies that use pro forma accounting as a tool to exclude some of their operating costs to continue to do so. Chuck Hill, director of research at First Call Corp., states "I don't know if FAS 142 is sounding the death knell of pro forma reporting, but it's another nail in its coffin. Adjusted earnings will not go away, but we need to clean it out" (Ojo, 2002, p. 2).

Goodwill is often the "most valuable commodity in deals for firms with assets of a few MBAs and a good idea" (Davis, 2002, p. 55). As such, mergers and acquisitions lawyers servicing the high tech industry viewed the new accounting rule with a wary eye. Pooling accounting has allowed these firms to ignore the value of goodwill and to avoid taking mandatory goodwill amortization charges, which could reduce the firms' net income. However, purchase accounting as required by FAS 142 has given these attorneys additional flexibility to structure business deals without being concerned about meeting the stringent requirements to qualify as a pooling combination. This new flexibility, though, has been viewed as having a 'dark side:' the requirement for annual impairment testing. The annual impairment testing means that every year the business

deal will be 'second-guessed,' increasing the need to be very careful when initially evaluating the deal (Davis, 2002).

Both buyers and sellers in the high tech industry should then consider the legal implications (Davis, 2002). Diane Frankle, co-chair of the mergers and acquisitions group at Gray Cary Ware & Freidenrich law firm in Palo Alto, California, was concerned that a company that takes a significant goodwill impairment loss could get sued by its shareholders for having paid "too much for a target company" (Davis, 2002, p. 55). Richard Climan, head of mergers and acquisitions at Cooley Godward law firm, Palo Alto, recommended a pro-active approach for these attorneys: one, develop an appreciation of the new rule and, two, bring in the accountants as soon as possible on a business deal for their guidance concerning the new rule (Davis, 2002).

Hepburn (2002), writing for *Marketing Management*, pointed out that while some view the new goodwill accounting rule as a necessary accounting evil, the new rule makes investors consider carefully why impairments are necessary and communicate that information. As a result, investors better comprehend the value of the organization and the potential for investment. As FAS 142 is adopted by companies, investors will benefit from more transparent accounting. For example, FAS 142 should prevent the common practice of acquisition companies acquiring vulnerable firms and then leveraging the undervalued brands.

In summary, conventional wisdom in the marketplace is that earnings management has been used for some time and that its use has been increasing over the

years. For instance, in a review of changes in practices in corporate finance over the past twenty years, "Paradigm Shifts," (2005) in *CFO Magazine* stated that "For most public companies, earnings management became standard operating procedure, and the better they got at it, the more intense the pressure from Wall Street analysts to hit quarterly expectations to the penny" (p. 46). However, failure of several major public companies due to scandalous behavior has greatly eroded the public trust. This loss of trust has brought the need for increased transparency in financial reporting to the forefront. Regulators have been responding to the need by issuing accounting rules, such as FAS 141 and 142, which effectively require increased disclosure. Firms have also been responding to pressure from investors and regulators to provide more transparency in financial reporting. One such demonstration of this response can be seen in the results of a recent survey taken by *CFO Magazine*, indicating that "82 percent of public-company finance executives disclose more information in their financial statements today than they did three years ago" (Fink, 2006, pp. 54, 56).

Earnings Management Research

The judgmental latitude afforded managers in financial reporting can be used to facilitate earnings management. As stated earlier, managers are highly motivated to manage earnings, particularly around key earnings benchmarks. Therefore, earnings management issues are extremely important to accounting researchers and to financial reporting regulators.

Motivations for Earnings Management

Strong motivations drive not only managers to manage earnings, but also shareholders to permit managers to manage earnings. These motivations include capital market incentives, contracting incentives, and political incentives.

Shareholder Incentives

Dye (1988) contends that shareholders might want managers to engage in earnings management for two reasons: an internal demand and an external demand. The internal demand for earnings management stems from shareholders encouraging management to select the actions desired by the shareholders (i.e., goal congruence). Shareholders consider earnings management to be a cost to accomplish this alignment of goals. The external demand for earnings management stems from the desire of shareholders to, one, alter how a potential investor might view the value of the firm and to, two, procure better contractual terms with other firms.

Capital Market Incentives

Capital market incentives for earnings management include a desire to improve the appearance of financial statements before making public securities' offerings and a desire to avoid drops in the stock market (Bartov et al., 2002; Healy and Wahlen, 1999).

Prior literature provides much evidence that the stock market rewards firms that have long streams of increasing earnings. Barth, Elliott, and Finn (1999) find that firms reporting a stream of earnings increases are rewarded in the market with higher price-to-earnings (PE) ratios; and they further determine that the PE ratios increase as the length of the uninterrupted stream of earnings increases lengthens. The study also finds that the PE ratios are greatly reduced when the stream is interrupted. DeAngelo, DeAngelo, and Skinner (1996) report that firms experiencing an interruption in the stream of earnings increases are penalized in the year of interruption by an average 14% negative stock return. Burgstahler and Dichev (1997) also cite anecdotal evidence that the stock market rewards firms that have long streams of increasing earnings.

Prior literature also provides evidence that firms manipulate earnings to avoid reporting losses. Hayn (1995) and Burgstahler and Dichev (1997) demonstrate that a higher than expected number of firms report earnings just above zero and distinctly fewer than expected report earnings just below zero, when assuming a normal distribution. Both studies conclude that many firms that should report small losses are manipulating earnings upward to "cross the line" to report positive earnings.

Firms that meet or beat analysts' expectations are also rewarded in the stock market. Bartov et al. (2002) find that firms that meet or beat analysts' expectations experience higher returns than do similar firms that fail to meet or beat analysts' expectations. They further conclude that this premium is rewarded whether or not

earnings are managed to accomplish the goal of meeting or beating analysts' expectations.

Burgstahler and Dichev (1997) consider two possible reasons for earnings management to avoid reporting earnings decreases and losses. First, firms opportunistically manage earnings to decrease the costs of transacting with stakeholders, assuming that many stakeholder decisions are made based simply upon the incidence of incurring a loss or incurring an earnings decrease. Second, prospect theory[15] suggests that it is at the point of going from a loss to a gain that one experiences the greatest increases in utility, thereby creating the greatest incentives for earnings management.

Most earnings management literature is based upon empirical tests applied to archival data. However, Graham et al. (2005) conducted a survey of more than 400 chief financial officers (CFOs). This survey basically supports the archival results found in prior literature. For instance, 78% of the CFOs admit to having given up long-term economic value to smooth income in the short-term. They indicate that the market reacts strongly to declines in earnings or to slight misses of earnings benchmarks. The CFOs perceive that the market assumes that most companies have the ability to tweak earnings enough to meet or beat the benchmarks, and further consider the failure to do so as an indicator of serious problems within the company. Therefore, the CFOs feel that it is

[15] Prospect theory was introduced by Kahneman and Tversky (1979). Although this theory primarily concentrated on monetary outcomes, the authors state: "The main properties of the proposed value function for money should apply to other attributes as well. In particular, we expect outcomes to be coded as gains or losses relative to a neutral reference point, and losses to loom larger than gains" (p. 288).

their responsibility to ensure that a smooth earnings stream is maintained (Graham et al., 2005).

Contracting Incentives

Contracting incentives for earnings management include the desire to increase managerial compensation and job security and the desire to avoid violating debt contracts (Healy and Wahlen, 1999).

Managerial Compensation Contracts

Executives at major firms can command huge compensation packages, which are strong incentives to manage earnings to meet contractual obligations and key earnings benchmarks (Giroux, 2004).[16] Several studies provide evidence that managers will likely manage earnings when their bonuses are affected by the level of reported earnings (Guidry, Leone, and Rock, 1999; Healy, 1985; Holthausen, Larcker, and Sloan , 1995).

Stock options, offered as a means of compensation to managers, have long been regarded as an excellent method of aligning the goals of managers with those of shareholders (Bartov and Mohanram, 2004). As such, "stock options have become the single most important component of executive compensation" (Gaver, 2003, p. 583). However, research has shown that managers will opportunistically manage earnings to ensure the best result for themselves from exercising these options (Bartov and

[16] For instance, at retirement, the compensation package of Jack Welch, CEO of General Electric, consisted

Mohanram, 2004). One approach to managing earnings for this purpose is to manipulate the reported earnings downward (Subramanyam, 1996). Managing the earnings downward just prior to the date that the options are awarded temporarily depresses the stock price, which results in a lower exercise price for the stock options (Baker, Collins, and Reitenga, 2003). Bergstresser and Philippon (2006) "provide evidence that the use of discretionary accruals to manipulate reported earnings is more pronounced at firms where the CEO's potential total compensation is more closely tied to the value of stock and option holdings" (p. 511).

In addition, Heflin et al. (2002) suggest that managers use income smoothing techniques and discretion in accounting choices to increase managerial compensation. Dechow and Sloan (1991) demonstrate that CEOs often increase reported earnings by reducing R&D spending in their last years with the firm. Incentives to improve earnings are considered to be stronger in the last years with a firm to not only improve the likelihood of meeting the requirements for managerial bonuses, but to also decrease the likelihood of termination with the firm.

CFOs surveyed by Graham et al. (2005) admit that external career reputation is very important and is a strong incentive to manage earnings. However, contrary to the literature, these executives contend that compensation contracts themselves are not a strong incentive to manage earnings. The fact that the CFOs were interviewed directly, though, is considered by Graham et al. to be a potential disadvantage when discussing

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of an annual compensation package in excess of $16 million and a stock options retirement package worth

agency issues. That is, "the executives may be unwilling to admit to undesirable behavior, especially if agency issues are important" (Graham et al., 2005, p. 6). However, this is obviously not a problem with all agency issues since the "executives admit to sacrificing economic value to achieve reporting objectives" (Graham et al., 2005, p. 6).

Debt Covenants

Creditors often protect their interests by placing restrictions in debt covenants that limit management's ability to benefit the shareholders at the creditors' expense. Such limitations might include restrictions related to dividend payouts, interest coverage, and debt-equity ratios. Dividend payout restrictions are the easiest to comply with since firms can simply cut back on dividend payouts when necessary. As such, prior studies indicate that little evidence exists of earnings management to comply with the dividend payout restriction (Healy and Palepu, 1990; DeAngelo, DeAngelo, and Skinner, 1994). However, firms find it more difficult to avoid other types of debt covenant violations. Heflin et al. (2002) contend that managers manage earnings to meet such contractual obligations by using discretion in accounting choices. DeFond and Jiambalvo (1994) and Sweeney (1994) conduct studies on samples of firms that violated debt covenants. They find evidence of earnings management to increase earnings in periods just prior to the debt covenant violations.

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a quarter of a billion dollars (Giroux, 2004).

Political Incentives

Political incentives for earnings management include the desire to reduce costs to comply with regulations or to increase the benefits derived from complying with regulations (Healy and Wahlen, 1999). Watts and Zimmerman (1978) develop what is commonly called the "political cost hypothesis." This hypothesis basically asserts that firms facing possible intervention by government agencies have a great incentive to manage earnings downward to avoid the costs of such intervention. Watts and Zimmerman conclude that price controls are very costly, impacting both a firm's earnings and its cash flows, creating strong incentives to manage earnings. Navissi (1999) finds that manufacturing firms in New Zealand managed earnings to reduce the impact from two sets of price regulations that were issued in 1971 and 1972. Jones (1991) determines that firms manage earnings downward to reduce the impact of import relief investigations. Cahan, Chavis, and Elmendorf (1997) also provide evidence that U.S. chemical firms took income-decreasing accruals to reduce earnings in 1979 to avoid costs related to the Comprehensive Environmental Response, Compensation, and Recovery Act of 1980.

To summarize, both shareholders and managers are strongly motivated to manage earnings. Managers are especially susceptible to capital market incentives, contracting incentives, and political incentives (Graham et al., 2005; Healy and Wahlen, 1999). Capital market concerns that the firm maintains a stable, but increasing, level of income

over time is an especially strong incentive to manage earnings (Graham et al., 2005; Burgstahler and Dichev, 1997). Increased managerial compensation, job security, and the desire to avoid violating debt contracts are also strong contracting incentives for earnings management (Healy and Wahlen, 1999). Political incentives for earnings management include the desire to reduce costs to comply with regulations or to increase the benefits derived from complying with regulations (Healy and Wahlen, 1999).

Benchmark Earnings Management Research

A great deal of research effort has been expended to detect the methods by which earnings management is conducted to satisfy the aforementioned motivations. Degeorge et al. (1999) conclude that earnings are managed to exceed thresholds. They provide evidence for three primary thresholds with an hierarchy: 1) to make a positive earnings per share (most important), 2) to beat previous period's earnings, and 3) to beat analysts' forecasts (least important). The hierarchy in this case means that the first benchmark of concern is to make positive earnings per share. If the first benchmark is met, the second benchmark of concern is to beat prior period's earnings. Finally, if the second benchmark is met, the third benchmark of concern is to beat analysts' forecasts. Degeorge et al. contend that management must focus on these earnings thresholds because parties concerned with the firm's performance (i.e., bankers, investors, analysts, etc.) focus on them.

The CFOs surveyed by Graham et al. (2005) contend that meeting or beating earnings benchmarks is extremely important. The CFOs perceive earnings, as opposed to cash flows and other financial indicators, to be the most important firm metric because it is the key metric that concerns the market. The earnings benchmarks that the CFOs value most highly are "quarterly earnings for the same quarter last year" and the analysts' forecast (p. 5).

Dechow and Skinner (2000) conclude that "understanding management's incentives is key to understanding the desire to engage in earnings management" (pg. 248). As such, they expect firms that just beat benchmarks to be more likely to have engaged in earnings management. Implications then are that firms that have been just barely successful in meeting the benchmark are to be regarded with suspicion, while firms that either miss the benchmark or beat it by a wide margin are regarded as less likely to have managed earnings.

Most of the research to detect earnings management is concerned with accruals manipulation. Roychowdhury (2006) finds evidence that firms also manipulate operating activities to avoid reporting earnings losses and to meet analyst forecasts. The operating activities so observed are "price discounts to temporarily increase sales, overproduction to report lower cost of goods sold, and reduction of discretionary expenditures to improve reported margins" (Roychowdhury, 2006, p. 335). Marquardt and Weidman (2004) also find that firms accelerate revenue recognition prior to equity offerings and delay revenue recognition prior to management buyouts.

Burgstahler and Dichev (1997) demonstrate that earnings management to avoid earnings decreases and losses can be revealed in a cross-sectional distributional analysis by showing irregularities in very narrow bandwidths around a benchmark, such as zero earnings or prior-period earnings. These irregularities take the shape of an abnormal dip just before the benchmark and an abnormal spike at or immediately following the benchmark. Both Burgstahler and Dichev (1997) and Altamuro et al. (2005) take this test one step further. They calculate the number of firms that should be expected to fall within the bandwidth just below or within the bandwidth just above the benchmark in the absence of earnings management. If the number of firms within the bandwidth is significantly different from the expected number of firms, then earnings management is suspected to have occurred.

Durtschi and Easton (2005), however, take exception to some of the conclusions drawn by the earnings management literature regarding cross-sectional distributional analysis, especially the conclusions of Burgstahler and Dichev (1997). In particular, Durtschi and Easton assert that the shapes of frequency distributions of key earnings metrics can be impacted by one or a combination of the following factors: 1) deflation,[17] 2) criteria used to select the sample data, or 3) differences in characteristics between the observations just below the benchmark and observations just above the benchmark.

To demonstrate their assertion, Durtschi and Easton (2005) concentrate on price as the deflator. Asserting that profit and loss firms are priced differently in the market,

[17] Depending upon the type of deflator, the deflator can be significantly different for observations just

their tests consider the effect on the zero earnings benchmark when price is used as the deflator. Durtschi and Easton demonstrate that once the price deflator is removed, no discontinuity exists in frequency distributions of key earnings benchmarks at zero. They then conclude that the shapes of frequency distributions cannot be considered as "*ipso facto* evidence of earnings management" (Durtschi and Easton, 2005, p. 558).

To summarize, researchers have expended great effort to detect the methods by which earnings management is conducted. Earnings are perceived to be the firm metric that most concerns the market (Graham et al., 2005). Research has established that earnings are managed to meet or beat earnings benchmarks (Graham et al., 2005; Degeorge et al., 1999). With some exceptions (for instance, when using price as the deflator as demonstrated by Durtschi and Easton (2005)), earnings management around benchmarks can be revealed in a cross-sectional distributional analysis (Burgstahler and Dichev, 1997).

Goodwill Earnings Management Research

Prior literature shows that asset impairment writedowns have been historically used for earnings management (Zucca and Campbell, 1992). On occasion, the asset writedown has included a writedown of goodwill (Elliott and Shaw, 1988; Francis et al., 1996). The new accounting rule provides an increased opportunity for earnings

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below and for observations just above the benchmark.

management from the new flexibility in the amounts and timing of goodwill writedowns. Thus, recent literature reflects concerns in these areas.

Lander and Reinstein (2003) contend that FAS 142 is a step in the "right direction," but problems with implementation of the new accounting rule will persist due to the complications and discretion in impairment testing. Watts (2003a) contends that FAS 141 and 142 require managers to "make unverifiable estimates of the value of firms as a whole or of the value of parts of firms when testing whether goodwill is impaired. Assessment of the value of a firm and its implied goodwill is extremely subjective" (p. 218). Watts (2003b) is concerned that a significant increase in fraud will emerge as a result of the goodwill impairment tests used in firm valuation as required by FAS 142.

The American Accounting Association Financial Accounting Standards Committee published a commentary that appraises valuation models in light of testing for goodwill impairment (Herz et al., 2001). This committee concluded that a problem exists with impairment testing regardless of the valuation method used: the separation of acquired goodwill from that of a parent or from that internally generated after the acquisition. The problem is that goodwill impairment is only recognized at the subsidiary level if goodwill is also impaired at the consolidated level. This problem also arises since during the testing process the goodwill generated or eroded by a firm after an acquisition is combined with the goodwill purchased and recorded on the books at the time of the acquisition.

Hayn and Hughes (2006) perform a study of the leading indicators of goodwill impairment and determine that financial statement disclosures do not provide enough information for investors to predict the need for goodwill write-offs. Further, they find that goodwill write-offs lag behind goodwill impairment by an average of three years, and that the lag can be as long as ten years. Even though these tests were conducted on pre-FAS 142 samples, Hayn and Hughes conducted sensitivity tests and conclude that the results are generalizable to post-FAS 142 financial reporting.

A study by Jordan and Clark (2004) provides evidence that firms actually do perform earnings management via the "big bath" technique. Specifically, they determine that earnings management has occurred under the new goodwill guideline of FAS 142 by applying the big bath technique. Sevin and Schroeder (2005) follow up on this study and find that more small firms appeared to take advantage of the new guideline to take big bath charges than did large firms. This finding is counter to Elliott and Shaw's (1988) conclusion that big baths are more likely to be taken by large firms.

To summarize, FAS 142 is acknowledged as an excellent attempt to bring about goodwill accounting practices that will result in financial statements that more faithfully represent the underlying economic conditions of the firm. However, problems with implementation of this new accounting rule exist and are expected to persist due to the complications and discretion in impairment testing (Lander and Reinstein, 2003).

Earnings Management Detection Models

Three basic types of models have been used in earnings management literature: those for aggregate accruals, those for specific accruals, and those for distributional analysis of earnings (McNichols, 2000). Interpretation of the results in the earnings management literature has often been controversial. McNichols contends that this controversy is largely due to the attempt to determine discretionary behavior by use of the aggregate models, and suggests that either the specific accruals models or the distributional analysis models are better options for determining discretionary behavior.

Aggregate Accruals Models

Primarily, earnings management detection has employed four aggregate accruals models since the mid-1980s: the Healy Model (Healy, 1985), the DeAngelo model (DeAngelo, 1986), the Jones Model (Jones, 1991), and the Modified Jones Model (Dechow, Sloan, and Sweeney, 1995). These models generally attempt to break total accruals into discretionary and nondiscretionary accruals components. Tests are then applied to the resulting discretionary component to determine the likelihood of earnings management.

The Healy Model (Healy, 1985) is a test of means of the total accruals. Healy makes two assumptions that are central to the model. Healy assumes, first, that earnings management occurs in all periods and, second, that nondiscretionary accruals are constant over time. Healy's approach is to divide the sample into three groups, one

containing earnings predicted to have been managed upwards and two containing earnings predicted to have been managed downwards. Effectively, the group assumed to have been managed upward becomes the estimation period and the groups assumed to have been managed downward become the event period. Nondiscretionary accruals are then represented by the mean of the total accruals from the estimation period group (Dechow et al., 1995).

The DeAngelo Model (DeAngelo, 1986) is an adaptation of the Healy Model. In the DeAngelo Model, only nondiscretionary accruals from the prior year are used for the estimation period (Dechow et al., 1995).

Unlike the Healy Model and the DeAngelo Model, the Jones Model (Jones, 1991) does not consider nondiscretionary accruals to be constant. The Jones Model estimates nondiscretionary accruals from a two-step process that considers changes in a firm's economic condition. First, nondiscretionary accruals are assumed to be the residual when total accruals are regressed on changes in sales and changes in property, plant and equipment. Second, nondiscretionary accruals are then regressed on changes in both sales and changes in property, plant and equipment using firm-specific parameter estimates from the first regression as the parameter coefficients. Results indicate that approximately 25% of the variation in total accruals is explained by the Jones Model (Jones, 1991).

The Modified Jones Model (Dechow et al., 1995) removes the implicit assumption in the Jones Model that revenues are nondiscretionary by adjusting revenues

for the change in receivables. This change should remove a bias toward zero earnings management where revenues were used to manage earnings (Dechow et al., 1995).

Specific Accruals Model

The model typically used to test for specific accruals is an industry model, such as the ones developed by Dechow and Sloan (1991), Petroni (1992), and Beaver and McNichols (1998). The industry model assumes that firms across the same industry will experience the same sources of variation in nondiscretionary accruals. The industry model developed by Dechow and Sloan, for example, regresses nondiscretionary accruals on the median total accruals for the industry. The primary advantage of the specific accruals model is that it is easier to develop a greater understanding of the discretionary versus nondiscretionary behavior. This advantage exists because the researcher can rely on GAAP to understand what should be reflected in the account.

Distributional Analysis Model

Burghstahler and Dichev (1997) introduced a new method of detection, the cross-sectional distributional method. This method has largely been used to detect earnings management around key earnings benchmarks such as zero earnings, prior year's earnings and analysts' earnings forecasts. The primary advantage of the distributional analysis method is that the researcher can make strong predictions about the frequency of earnings realizations that is likely to be due to discretionary earnings.

The distributional analysis approach to detecting earnings management looks at cross-sectional earnings distribution frequencies to determine whether firms are evenly distributed at points just above and just below key earnings benchmarks. Earnings management is suspected if there is an unusually low frequency of firms just below the benchmark and an unusually high frequency of firms just above the benchmark.

To determine whether the frequency is unusually high or unusually low, a two-step process is used to calculate the expected frequency of firms absent the presence of earnings management. First, divide the frequency into bandwidths of equal distance, called bins. Second, calculate the average number of firms falling within the bin just above and within the bin just below the bin of interest. Compare the average number that is expected absent the presence of earnings management with the actual number of firms within the bin of interest. If the number of firms within the bin of interest is significantly different from the expected number of firms, then earnings management is suspected to have occurred.

To summarize, researchers have attempted to continually develop better methods of modeling discretionary behavior. The earlier models have, for the most part, been replaced as later models have been developed that appear to have a greater level of accuracy. The Modified Jones Model (Dechow et al., 1995) has been the primary aggregate accruals model utilized since its introduction. However, McNichols (2000) states that further progress in earnings management literature will require a departure from the extensive use of aggregate accruals models. McNichols suggests that further

progress in the earnings management literature will probably come from specific accruals or distributional analysis tests or from a combination of both.

CHAPTER III

HYPOTHESES DEVELOPMENT AND METHODOLOGY

This chapter develops the hypotheses and discusses the methodology used to test the data. The overall research hypothesis, informally stated, is that the discretion allowed under the new goodwill impairment rule has been utilized as a tool for earnings management. This paper contends that managers have seized the opportunity for increased discretion to manage earnings. Thereby, earnings management can be detected in the first year following the effective date for the new guideline.

Hypotheses Development

Professional judgment is required for financial reporting. However, prior literature has demonstrated that this professional judgment is sometimes used to disguise opportunistic earnings management (Healy and Wahlen, 1999). Managers, being subjected to strong motivations, are sometimes driven to manage earnings to exceed key earnings thresholds (Graham et al., 2005; Bartov et al., 2002; DeFond and Jiambalvo, 1994). Key earnings thresholds, such as positive earnings and prior period earnings, are viewed as important benchmarks of financial performance (Graham et al., 2005). A third benchmark, not tested here, is reported earnings as opposed to financial analysts'

predictions.[18] The role of earnings management has, therefore, become a very significant issue in accounting research (Healy and Wahlen, 1999).

The new rule for goodwill accounting provides an opportunity for earnings management in addition to that which was available under the previous rule. The APB established the previous rule, APB 17 (effective in 1970), upon the presumption that goodwill is a wasting asset (i.e., finite lived). APB 17, therefore, mandated that goodwill should be expensed over a maximum period of 40 years when calculating net income. The FASB established the new rule regarding goodwill, FAS 142 (effective after 2001), under the presumption that goodwill is not a wasting asset. That is, the FASB considers goodwill to have an indefinite life, which should not be expensed annually but rather should be tested on an annual basis for impairment (FAS 142, Summary). Considerable managerial judgment is required with this goodwill impairment test due to the estimates required, which increases the potential for earnings management beyond what was previously available (Watts, 2003a). This paper, then, addresses the question: Do managers exploit their discretion in recognizing goodwill impairments to manage earnings? Specifically, this research tests whether firms that exceed zero earnings or prior-year earnings by a very small amount have taken smaller goodwill writedowns than firms that have exceeded the benchmarks by larger amounts.

Historically, the research design to detect earnings management from impairment writedowns has utilized the following basic procedure:

[18] Difficulty exists in accurately determining which financial metric the financial analysts' are forecasting.

- First, calculate the amount of the writedown.
- Second, calculate the average amount of writedowns for that industry during that time frame.
- Third, compare the firm's writedown with the industry to see if an abnormality exists.

These steps are also followed in this paper. However, since the new guideline now dictates that writedowns of goodwill are separately identified in the financial statements, it is not necessary to calculate the amount of the writedown for years after December 2001. This amount can simply be taken from the income statement.

Burghstahler and Dichev (1997) introduced the cross-sectional distributional method of detecting earnings management. This method has largely been used to detect earnings management around key earnings benchmarks, by looking at cross-sectional earnings distribution frequencies to determine whether firms are evenly distributed at points just above and just below key earnings benchmarks. Earnings management is suspected if an unusually low frequency of firms is found just below the benchmark and an unusually high frequency of firms is just above the benchmark.

This research utilizes the cross-sectional distributional approach to detect earnings management. Specifically, this project is attempting to determine if the firms that just beat two key earnings benchmarks, zero value earnings and prior-year earnings, by a very small amount also took very small goodwill impairment writedowns. The assumption is that, if so, these firms are suspected of using the managerial discretion

provided by the new guideline to take very small writedowns compared with other positive earnings firms. This research considers two groups of four hypotheses to provide evidence regarding whether the discretion allowed in the new goodwill guideline has been used for opportunistic earnings management. The first set of four hypotheses is analyzed with tobit regressions. The second set of four hypotheses is evaluated with logistic regressions.

Both the tobit and logistic regressions take a maximum likelihood estimation approach. The tobit regression model was developed by James Tobin (Tobin, 1958). This model is an alternative to ordinary least squares regression when dependent variables have very limited ranges, such as when "data on household expenditure on automobiles has a lot of observations at 0, corresponding to households who choose not to buy a car" (Kennedy, 1998). Many studies, then, that use the tobit model do so because the dependent variable holds the value of zero for a large proportion of the observations (Greene, 2003). As the majority of the observations in this study have the value of zero for the amount of goodwill impairment taken (the dependent variable in the first set of regressions), the tobit estimation model is used.

When the dependent variable is a dichotomous, qualitative variable, logistic estimation is the most commonly used estimation approach (Kennedy, 1998). The dependent variable in the second set of regressions in this study is dichotomous, categorizing the firms based upon whether the amount of writedown taken was small or large. Therefore, the second set of regressions is estimated with logistic models.

Each of the hypotheses directly tests the earnings management behavior of firms whose prewritedown earnings are positive and small in value, just beating one of the two key earnings benchmarks. Hereafter, the firms defined in each hypothesis are referred to as **firms of interest** and all references to earnings are to **earnings per share**.

Goodwill Hypotheses

Goodwill is the dependent variable in the first set of hypotheses. The variable **Goodwill** represents the amount of impairment loss (scaled by number of outstanding shares) taken by a firm. These designations were based upon the after-tax amount of goodwill impairment recorded on the firm's income statement as recorded by Compustat. Firms were required to perform an initial evaluation test during the first three months in the first year for which the guideline became effective, 2002. These adjustments are not included in this data set. This sample is composed of entries from the second evaluation test conducted during 2002, which is the first annual evaluation.

Boone et al. (2003) used several indicator variables to demonstrate asset impairment losses taken specifically to manage earnings around one or more of the three thresholds mentioned earlier. These indicator variables have been adopted as treatment variables in this study.

The two treatment variables patterned after the Boone et al. (2003) paper are zero/one indicator variables that measure the extent of incentive to manipulate created by the proximity of pre-writedown earnings relative to the earnings benchmarks.

ManipZero indicates whether the firm's earnings (before special items and writedown) are within the first decile[19] of firms whose earnings exceed the zero value earnings benchmark. **ManipPY** indicates whether the firm's earnings (before special items and writedown) are within the first decile[20] of firms whose earnings exceed the prior-year earnings benchmark.

Formally stated, the first group of tobit research hypotheses is as follows:

> **H1(a):** Using **zero value** earnings as the benchmark, firms that have positive prewritedown earnings and are in the **first decile** will have smaller writedowns than firms in all other positive earnings firms.
>
> **H1(b)**: Using **prior-year** earnings as the benchmark, firms that have positive prewritedown earnings and are in the **first decile** will have smaller writedowns than firms in all other positive earnings firms.

These hypotheses are supported if the firms of interest have a negative slope for the treatment variables, **ManipZero** and **ManipPY,** respectively. Support for the hypotheses demonstrates that goodwill impairment writedowns are being understated.

The tobit models to test the above hypotheses are as follows:

Equation

$$Goodwill_i = \beta_0 + \beta_1 ManipZero_i + \beta_x Controls_i + \varepsilon_i \quad (1)$$

$$Goodwill_i = \beta_0 + \beta_1 ManipPY_i + \beta_x Controls_i + \varepsilon_i \quad (2)$$

Where:

[19] Firms with earnings that exceeded zero earnings were evenly divided into ten groups, with the first decile containing the firms that exceeded zero earnings by the least dollar amounts and the tenth decile containing the firms that exceeded zero earnings by the greatest dollar amounts.

[20] Firms with earnings that exceeded prior-year earnings were evenly divided into ten groups, with the first decile containing the firms that exceeded prior-year earnings by the least dollar amounts and the tenth decile containing the firms that exceeded prior-year earnings by the greatest dollar amounts.

Goodwill = Dependent variable in each tobit model. Amount of goodwill impairment taken (scaled by number of outstanding shares).

ManipZero= Zero/one indicator variable indicating that the firm's earnings (before writedown) are within the first decile of firms whose earnings exceed the **zero value** earnings benchmark. Negative values are expected when impairment is indicated.

ManipPY = Zero/one indicator variable indicating that the firm's earnings (before writedown) are within the first decile of firms whose earnings exceed the **prior-year** earnings benchmark. Negative values are expected when impairment is indicated.

Controls = Group of control variables used in prior research to determine the need for impairment writedown. These control variables are used in all the regressions and are discussed in detail later in this chapter.

The next two treatment variables are similar to those patterned after the Boone et al. (2003) paper. These variables are zero/one indicator variables that also measure the extent of incentive to manipulate created by the proximity of pre-writedown earnings relative to the earnings benchmarks. **Z2$** is a zero/one indicator variable representing the firms whose earnings (before writedown) exceed the zero value earnings benchmark by up to two dollars.[21] **PY2$** is a zero/one indicator variable representing the firms whose earnings (before writedown) exceed the prior-year earnings benchmark by up to two dollars above prior-year earnings.

[21] The two dollars interval for testing is an arbitrary amount that represents a small earnings per share. Various amounts have been arbitrarily set and used for testing in prior literature. For instance, Burgstahler and Dichev (1997) reported net income changes scaled by beginning-of-period market value of common equity, using bin intervals of .0025. Altamuro et al. (2005) used bin widths of .75 percent of net income scaled by end-of-period total assets. Durtschi and Easton (2005) conducted tests for earnings management using a zero value benchmark and looking for discontinuities at the negative and the positive one cent earnings per share.

Formally stated, the second group of tobit research hypotheses is as follows:

H2(a): Using **zero value** earnings as the benchmark, firms that have positive prewritedown earnings up to **two dollars** will have smaller writedowns than firms in all other positive earnings firms.

H2(b): Using **prior-year** earnings as the benchmark, firms that have positive prewritedown earnings up to **two dollars** will have smaller writedowns than firms in all other positive earnings firms.

A negative slope for the treatment variable, **Z2$** and **PY2$** respectively, suggests that each hypothesis is supported. This finding shows that goodwill impairment writedowns are being understated.

The tobit models to test the above hypotheses are as follows:

$$Goodwill_i = \beta_0 + \beta_1 Z2\$_i + \beta_x Controls_i + \varepsilon_i \quad (3)$$

$$Goodwill_i = \beta_0 + \beta_1 PY2\$_i + \beta_x Controls_i + \varepsilon_i \quad (4)$$

Where:

Z2$ = Variable indicating the firms whose earnings (before writedown) exceed the zero value earnings benchmark and that range up to two dollars. Negative values are expected when impairment is indicated.

PY2$ = Variable indicating the firms whose earnings (before writedown) exceed the prior-year earnings benchmark and that range up to two dollars above prior-year earnings. Negative values are expected when impairment is indicated.

Variables representing the three positive bins closest to the zero value earnings benchmark make up the next group of treatment variables. These variables are zero/one indicator variables. **ZeroBin1** is a variable indicating that the firm's earnings (before

writedown) are within the first decile[22] of firms whose earnings exceed the zero value earnings benchmark. **ZeroBin2** designates that the firm's earnings (before writedown) are within the second decile of firms whose earnings exceed the zero value earnings benchmark. **ZeroBin3** represents firms with earnings (before writedown) that are within the third decile of firms whose earnings exceed the zero value earnings benchmark.

Likewise, variables designating the three positive bins closest to the prior-year earnings benchmark compose the next set of treatment variables. These variables are also zero/one indicator variables. These three variables are designed in a manner similar to the ZeroBin variables above. Rather than indicating deciles exceeding the zero value benchmark, **PYBin1**, **PYBin2**, and **PYBin3** are variables indicating that the firm's earnings (before writedown) are within the first, second, and third deciles[23], respectively, of firms whose earnings exceed the prior-year earnings benchmark.

Formally stated, the third group of tobit research hypotheses is as follows:

> **H3(a):** Using **zero value** earnings as the benchmark, firms that have positive prewritedown earnings and are in the **first decile** will have smaller writedowns than firms in all other positive earnings firms.

This hypothesis is supported if the firms of interest have a negative slope for **ZeroBin1**, indicating that goodwill impairment writedowns are being understated.

> **H3(b):** Using **zero value** earnings as the benchmark, firms that have positive prewritedown earnings and are in the **second decile** will have smaller writedowns

[22] Firms with earnings that exceeded zero earnings were evenly divided into ten groups, with the first decile containing the firms that exceeded zero earnings by the least dollar amounts and the tenth decile containing the firms that exceeded zero earnings by the greatest dollar amounts.

[23] Firms with earnings that exceeded prior-year earnings were evenly divided into ten groups, with the first decile containing the firms that exceeded prior-year earnings by the least dollar amounts and the tenth decile containing the firms that exceeded prior-year earnings by the greatest dollar amounts.

than firms in all other positive earnings firms, yet larger than those in the first decile.

A negative slope for **ZeroBin2** supports this hypothesis, demonstrating that goodwill impairment writedowns are being understated. However, the relationship between **Goodwill** and **ZeroBin1** will be more negative than the relationship between **Goodwill** and **ZeroBin2**. Therefore, goodwill impairment writedowns are being more understated within the first decile beyond the zero earnings benchmark than in the second decile beyond the zero earnings benchmark.

H3(c): Using **zero value** earnings as the benchmark, firms that have positive prewritedown earnings and are in the **third decile** will have smaller writedowns than firms in all other positive earnings firms, yet larger than those in the second decile.

A negative slope for **ZeroBin3** supports this hypothesis, suggesting that goodwill impairment writedowns are being understated. However, the relationship between **Goodwill** and **ZeroBin2** will be more negative than the relationship between **Goodwill** and **ZeroBin3**. This finding reveals that goodwill impairment writedowns are being more understated within the second decile beyond the zero earnings benchmark than in the third decile beyond the zero earnings benchmark.

H3(d): Using **prior-year** earnings as the benchmark, firms that have positive prewritedown earnings and are in the **first decile** will have smaller writedowns than firms in all other positive earnings firms.

This hypothesis is supported if the firms of interest have a negative slope for **PYBin1**. This result points out that goodwill impairment writedowns are being understated.

H3(e): Using **prior-year** earnings as the benchmark, firms that have positive prewritedown earnings and are in the **second decile** will have smaller writedowns than firms in all other positive earnings firms, yet larger than those in the first decile.

A negative slope for **PYBin2** supports this hypothesis, indicating that goodwill impairment writedowns are being understated. However, the relationship between **Goodwill** and **PYBin1** will be more negative than the relationship between **Goodwill** and **PYBin2**. This finding signifies that goodwill impairment writedowns are being more understated within the first decile beyond the zero earnings benchmark than in the second decile beyond the zero earnings benchmark.

H3(f): Using **prior-year** earnings as the benchmark, firms that have positive prewritedown earnings and are in the **third decile** will have smaller writedowns than firms in all other positive earnings firms, yet larger than those in the second decile.

A negative slope for **PYBin3** supports this hypothesis, demonstrating that goodwill impairment writedowns are being understated. However, the relationship between **Goodwill** and **PYBin2** will be more negative than the relationship between **Goodwill** and **PYBin3**. This finding illustrates that goodwill impairment writedowns are being more understated within the second decile beyond the zero earnings benchmark than in the third decile beyond the zero earnings benchmark.

The tobit models to test the above hypotheses are as follows:

$$Goodwill_i = \beta_0 + \beta_1 ZeroBin1_i + \beta_2 ZeroBin2_i + \beta_3 ZeroBin3_i + \beta_x Controls_i + \varepsilon_i \quad (5)$$

$$Goodwill_i = \beta_0 + \beta_1 PYBin1_i + \beta_2 PYBin2_i + \beta_3 PYBin3_i + \beta_x Controls_i + \varepsilon_i \quad (6)$$

Where:

ZeroBin1 = Zero/one indicator variable indicating that the firm's earnings (before writedown) are within the first decile of firms whose earnings exceed the zero value earnings benchmark. Negative values are expected when impairment is indicated.

ZeroBin2 = Zero/one indicator variable indicating that the firm's earnings (before writedown) are within the second decile of firms whose earnings exceed the zero value earnings benchmark. Negative values are expected when impairment is indicated.

ZeroBin3 = Zero/one indicator variable indicating that the firm's earnings (before writedown) are within the third decile of firms whose earnings exceed the zero value earnings benchmark. Negative values are expected when impairment is indicated.

PYBin1 = Zero/one indicator variable indicating that the firm's earnings (before writedown) are within the first decile of firms whose earnings exceed the prior-year earnings benchmark. Negative values are expected when impairment is indicated.

PYBin2 = Zero/one indicator variable indicating that the firm's earnings (before writedown) are within the second decile of firms whose earnings exceed the prior-year earnings benchmark. Negative values are expected when impairment is indicated.

PYBin3 = Zero/one indicator variable indicating that the firm's earnings (before writedown) are within the third decile of firms whose earnings exceed the prior-year earnings benchmark. Negative values are expected when impairment is indicated.

The final group of treatment variables simply measures the relationship of goodwill impairment to earnings per share. **EPS** is a variable indicating the earnings per share (before writedown) for all positive earnings firms. **EPSSqrd** is a variable

indicating the earnings per share (before writedown) squared for all positive earnings firms.

Formally stated, the fourth group of tobit research hypotheses is as follows:

H4(a): Firms that have greater positive prewritedown earnings will have larger writedowns than firms with small positive earnings.

A positive slope for **EPS** supports this hypothesis, suggesting that goodwill impairment writedowns are being understated by firms with smaller, but positive, earnings.

H4(b): As earnings for firms become very large, writedowns will become smaller and smaller.

A negative slope for **EPSSqrd** reflects diminishing marginal returns and supports this hypothesis, illustrating that large goodwill impairment writedowns are not typically needed for very successful firms.

The tobit model to test the above hypotheses is as follows:

$$Goodwill_i = \beta_0 + \beta_1 EPS_i + \beta_2 EPSSqrd_i + \beta_x Controls_i + \varepsilon_i \qquad (7)$$

Where:

EPS = Variable indicating the earnings per share (before writedown) for all positive earnings firms. Positive values are expected.

EPSSqrd = Variable indicating the earnings per share (before writedown) squared for all positive earnings firms. Negative values are expected.

ImpairFlag Hypotheses

The second set of four hypotheses is evaluated with logistic regressions. This set of regressions is conducted as tests to see if the robustness of the tobit results hold with a logistics model. These hypotheses are basically a repetition of the above tobit regressions, except that **ImpairFlag** is the dependent variable. **ImpairFlag** is a zero/one indicator variable where 0 represents a company that has taken a small impairment loss and 1 represents a company that has taken a large impairment loss. Goodwill writedowns up to .05 (after scaling by number of outstanding shares) are arbitrarily considered to be small and comprise the small writedown category. Goodwill writedowns greater than .05 (after scaling by number of outstanding shares) are arbitrarily considered to be large and comprise the large writedown category. The small category contains 1417 observations with zero writedowns and 23 observations with writedowns greater than zero. The large category has 33 observations, with the largest scaled writedown being 1.51. These designations are based upon the after-tax amount of goodwill impairment recorded on the firm's income statement as recorded by Compustat.

Formally stated, the first group of logistic research hypotheses is as follows:

H5(a): Using **zero value** earnings as the benchmark, firms that have positive prewritedown earnings and are in the **first decile** will have smaller writedowns than firms in all other positive earnings firms.

H5(b): Using **prior-year** earnings as the benchmark, firms that have positive prewritedown earnings and are in the **first decile** will have smaller writedowns than firms in all other positive earnings firms.

The logistic models to test the above hypotheses are as follows:

$$ImpairFlag_i = \beta_0 + \beta_1 ManipZero_i + \beta_x Controls_i + \varepsilon_i \quad (8)$$

$$ImpairFlag_i = \beta_0 + \beta_1 ManipPY_i + \beta_x Controls_i + \varepsilon_i \quad (9)$$

Where:

ImpairFlag = Dependent variable in each logistic model. Indicator variable where 0 indicates a firm with a small writedown and 1 indicates a firm with a large writedown.

ManipZero= Zero/one indicator variable indicating that the firm's earnings (before writedown) are within the first decile of firms whose earnings exceed the zero value earnings benchmark. Negative values are expected when impairment is indicated.

ManipPY = Zero/one indicator variable indicating that the firm's earnings (before writedown) are within the first decile of firms whose earnings exceed the prior-year earnings benchmark. Negative values are expected when impairment is indicated.

Formally stated, the second group of logistic research hypotheses is as follows:

H6(a): Using **zero value** earnings as the benchmark, firms that have positive prewritedown earnings up to **two dollars** will have smaller writedowns than firms in all other positive earnings firms.

H6(b): Using **prior-year** earnings as the benchmark, firms that have positive prewritedown earnings up to **two dollars** will have smaller writedowns than firms in all other positive earnings firms.

The logistic models to test the above hypotheses are as follows:

$$ImpairFlag_i = \beta_0 + \beta_1 Z2\$_i + \beta_x Controls_i + \varepsilon_i \quad (10)$$

$$ImpairFlag_i = \beta_0 + \beta_1 PY2\$_i + \beta_x Controls_i + \varepsilon_i \quad (11)$$

Where:

Z2$ = Variable indicating the firms whose earnings (before writedown) exceed the zero value earnings benchmark and that range up to two dollars. Negative values are expected when impairment is indicated.

PY2$s = Variable indicating the firms whose earnings (before writedown) Exceed the prior-year earnings benchmark and that range up to two dollars above prior-year earnings. Negative values are expected when impairment is indicated.

Formally stated, the third group of logistic research hypotheses is as follows:

H7(a): Using **zero value** earnings as the benchmark, firms that have positive prewritedown earnings and are in the **first decile** will have smaller writedowns than firms in all other positive earnings firms.

H7(b): Using **zero value** earnings as the benchmark, firms that have positive prewritedown earnings and are in the **second decile** will have smaller writedowns than firms in all other positive earnings firms, yet larger than those in the first decile.

H7(c): Using **zero value** earnings as the benchmark, firms that have positive prewritedown earnings and are in the **third decile** will have smaller writedowns than firms in all other positive earnings firms, yet larger than those in the second decile.

H7(d): Using **prior-year** earnings as the benchmark, firms that have positive prewritedown earnings and are in the **first decile** will have smaller writedowns than firms in all other positive earnings firms.

H7(e): Using **prior-year** earnings as the benchmark, firms that have positive prewritedown earnings and are in the **second decile** will have smaller writedowns than firms in all other positive earnings firms, yet larger than those in the first decile.

H7(f): Using **prior-year** earnings as the benchmark, firms that have positive prewritedown earnings and are in the **third decile** will have smaller writedowns than firms in all other positive earnings firms, yet larger than those in the second decile.

The logistic model to test the above hypotheses is as follows:

$$ImpairFlag_i = \beta_0 + \beta_1 ZeroBin1_i + \beta_2 ZeroBin2_i + \beta_3 ZeroBin3_i + \beta_x Controls_i + \varepsilon_i \quad (12)$$

$$ImpairFlag_i = \beta_0 + \beta_1 PYBin1_i + \beta_2 PYBin2_i + \beta_3 PYBin3_i + \beta_x Controls_i + \varepsilon_i \quad (13)$$

Where:

ZeroBin1 = Zero/one indicator variable indicating that the firm's earnings (before writedown) are within the first decile of firms whose earnings exceed the zero value earnings benchmark. Negative values are expected when impairment is indicated.

ZeroBin2 = Zero/one indicator variable indicating that the firm's earnings (before writedown) are within the second decile of firms whose earnings exceed the zero value earnings benchmark. Negative values are expected when impairment is indicated.

ZeroBin3 = Zero/one indicator variable indicating that the firm's earnings (before writedown) are within the third decile of firms whose earnings exceed the zero value earnings benchmark. Negative values are expected when impairment is indicated.

PYBin1 = Zero/one indicator variable indicating that the firm's earnings (before writedown) are within the first decile of firms whose earnings exceed the prior-year earnings benchmark. Negative values are expected when impairment is indicated.

PYBin2 = Zero/one indicator variable indicating that the firm's earnings (before writedown) are within the second decile of firms whose earnings exceed the prior-year earnings benchmark. Negative values are expected when impairment is indicated.

PYBin3 = Zero/one indicator variable indicating that the firm's earnings (before writedown) are within the third decile of firms whose earnings exceed the prior-year earnings benchmark. Negative values are expected when impairment is indicated.

As discussed for hypotheses 1 through 3, hypotheses 5 through 7 are supported if the firms of interest have a negative slope for the treatment variables. This result demonstrates that goodwill impairment writedowns are being understated. In addition, the relationship between the dependent variable, **ImpairFlag**, and the first decile bin will be more negative than the relationship between **ImpairFlag** and the second decile bin. This finding illustrates that goodwill impairment writedowns are being more understated within the first decile beyond the key earnings benchmark than in the second decile beyond the key earnings benchmark. Likewise, the relationship between the dependent variable, **ImpairFlag**, and the second decile bin will be more negative than the relationship between **ImpairFlag** and the third decile bin. This result suggests that goodwill impairment writedowns are being more understated within the second decile beyond the key earnings benchmark than in the third decile beyond the key earnings benchmark.

Formally stated, the fourth group of logistic research hypotheses is as follows:

H8(a): Firms that have greater positive prewritedown earnings will have larger writedowns than firms with small positive earnings.

A positive slope for **EPS** supports this hypothesis, suggesting that firms with greater earnings are more likely to be those firms with larger goodwill impairment

writedowns. This result indicates that goodwill impairment writedowns are being understated by firms with smaller, but positive, earnings.

> **H8(b):** As earnings for firms become very large, writedowns will become smaller and smaller.

A negative coefficient for **EPSSqrd** supports this hypothesis, reflecting diminishing marginal returns and demonstrating that large goodwill impairment writedowns are not typically needed for very successful firms.

The logistic model to test the above hypotheses is as follows:

$$ImpairFlag_i = \beta_0 + \beta_1 EPS_i + \beta_2 EPSSqrd_i + \beta_x Controls_i + \varepsilon_i \quad (14)$$

Where:

EPS = Variable indicating the earnings per share (before writedown) for all positive earnings firms. Positive values are expected.

EPSSqrd = Variable indicating the earnings per share (before writedown) squared for all positive earnings firms. Negative values are expected.

Control Variables

The Francis et al. (1996) study included several exogenous variables to indicate the presence of an expected impairment loss. These exogenous variables have been adapted as the control variables in this study: past stock price performance, book-to-market ratios, return-on-assets, historical propensity to take write-offs, change in management, and size of firm. The control variables are described and the expected signs of the coefficients are given in Table 1.

The firm's historical stock price performance is measured both as the market-adjusted (that is, firm less the market return) stock price performance over the year preceding the year of the write-off (**Ret1**) and over the period beginning five years and ending one year prior to the year of the write-off (**Ret5**). Since the likelihood of impairment increases as the firm's past stock price performance declines, negative values for these returns are expected when impairment is indicated.

Table 1

Control Variables and Predicted Signs

Variable Name	Predicted Sign	Variable Description
Ret1	-	Stock price performance over the year (250 trading days) preceding the year of the write-off.
Ret5	-	Stock price performance over the period beginning five years and ending one year prior to the year of the write-off.
BTM	+	Industry-adjusted (that is, firm less the industry median) book-to-market ratio measured as of the fiscal year-end preceding the write-off.
ΔBTM	+	The mean change in the firm's book-to-market ratio measured over the five years preceding the write-off year.
ΔIndBTM	+	The average change in the median book-to-market ratio of all firms in the same four-digit SIC code as the firm measured over the five years preceding the write-off year.
ΔROA	-	The mean change in the firm's return-on-assets over the five years preceding the write-off year.
ΔIndROA	-	The average change in the return-on-assets of all firms in the same four-digit SIC code as the firm measured over the previous five years prior to the write-off year.
WOffHist	+	The number of years the firm reported negative special items in the previous five years.
IndWOffHist	+	The average number of years of all firms in the same four-digit SIC code as the firm reported negative special items in the previous five years.
ΔMgmt	+	Zero/one indicator variable indicating a change in the firm's top officers (chairman of the board, president, or chief executive officer) during the current or preceding accounting year.
Size	+/-	A control variable defined as the log of sales of the year prior to the write-off year.

The book-to-market ratios are industry-adjusted (that is, firm less the industry median) and are measured as of the fiscal year-end preceding year of the write-off

(**BTM**). The first of the historical book-to-market ratios is calculated as the mean change in a firm's book-to-market ratio during the five year period preceding the write-off (**ΔBTM**). The second of the historical book-to-market ratios is calculated as the mean change in a firm's industry book-to-market ratio (**ΔIndBTM**) over the five year period preceding the write-off. Positive values for the book-to-market ratios are expected when impairment is indicated since book-to-market ratios that are increasing or are higher than the industry average are indicative of impaired assets.

The past performance of a firm and its industry are measured using the mean change in the firm's return-on-assets (**ΔROA**) and the mean change in the return-on-assets of all firms in the same four-digit SIC code as the firm (**ΔIndROA**). The changes are measured over the five years prior to the write-off and would be expected to decline when assets become impaired. Therefore, negative values for these variables are predicted when impairment is indicated.

There is an increased likelihood of a write-off when a firm has a history of write-offs per Elliott and Hanna (1996). Therefore, the history of reporting negative special items over the last five years is measured by the number of write-off years for that firm (**WOffHist**) and by the average number of write-off years of all firms in the same four-digit SIC code (**IndWOffHist)**. Positive (i.e., greater than zero) values are expected for these when impairment is indicated.

The proxy for a change in management (**ΔMgmt***)* is a zero/one indicator variable reflecting a change in the firm's top officers (chairman of the board, president, or chief

executive officer) during the current or preceding accounting year. The propensity to take large write-offs by the new upper management in the year of the turnover has been documented by research (Porciau, 1993). Incentives for these write-offs include:

- large losses taken to improve the future perceptions of earnings by the new management team,
- the close scrutiny by a new management team may reveal previously unrecognized asset impairments, and
- the change in strategic focus by the new management team may render some assets useless or less valued (Francis et al., 1996).

The size (**Size**) of the firm is defined as the log of sales of the year prior to the write-off.

Data Sources

This paper tests the goodwill impairment writedowns taken for the year 2002, the first year following the effective date (post December 2001) of the new goodwill standard. The data are from the Compustat database with the exception of the stock return data, which are taken from the CRSP database. Testing is conducted by comparing net income before and after goodwill impairment writedowns with the first two thresholds mentioned earlier: first, positive earnings per share and, second, previous period's earnings.

Summary

In summary, the overall research hypothesis tests agency theory by looking at the discretionary behavior of managers under the new accounting rule for goodwill impairment writedowns. Stated informally, the overall hypothesis is that the goodwill impairment provisions have been utilized as a tool for earnings management. This paper tests for earnings management in the first year following the effective date for the new guideline. A variation of the cross-sectional distributional tests is conducted around the zero earnings and the prior-year earnings benchmarks to test for the presence of earnings management. The test utilizes tobit and logistic regression models. The dependent variables in these models represent goodwill impairment taken. The variables of interest in these models, loosely described, represent the firms that just barely meet or beat the earnings benchmarks. Control variables are those that have been determined in prior research (Francis et al., 1996) to indicate the need for asset impairment writedowns. Results from these regressions are discussed in the next chapter.

CHAPTER IV

RESULTS

Introduction

This chapter presents the results from the data analyses performed to test the hypotheses developed in Chapter 3. First, the data set is discussed, including descriptive statistics for the companies included in the sample. Next, the data are subjected to both tobit and logistic regressions. The results of the tobit regressions (equations 1 through 7), which are used to test the first set of four hypotheses, are presented. Then, the findings of the logistics regressions (equations 8 through 14), which test the second set of four hypotheses, are reported. Finally, the chapter concludes with an overview of the control variables' effects in the various models.

Tables 2 and 3 repeat the variable definitions as presented in chapter 3. As noted in the previous descriptions, all references to earnings in Table 2 are pre-writedown values.

Table 2

Dependent and Treatment Variables Descriptions

Variable Name	Variable Description
Goodwill	Dependent variable in each tobit model. Amount of goodwill impairment taken (scaled by number of outstanding shares).
ImpairFlag	Dependent variable in each logistic model. Indicator variable where 0 indicates a firm with a small writedown and 1 indicates a firm with a large writedown.
ManipZero	Zero/one indicator variable indicating that the firm's earnings are within the first decile of firms whose earnings exceed the **zero value** earnings benchmark.
ManipPY	Zero/one indicator variable indicating that the firm's earnings are within the first decile of firms whose earnings exceed the **prior-year** earnings benchmark.
Z2$	Variable indicating the firms whose earnings exceed the zero value earnings benchmark and that range up to two dollars.
PY2$	Variable indicating the firms whose earnings exceed the prior-year earnings benchmark and that range up to two dollars above prior-year earnings.
ZeroBin1 **ZeroBin2** **ZeroBin3**	Zero/one indicator variable indicating that the firm's earnings are within the first, second or third decile, respectively, of firms whose earnings exceed the zero value earnings benchmark.
PYBin1 **PYBin2** **PYBin3**	Zero/one indicator variable indicating that the firm's earnings are within the first, second or third decile, respectively, of firms whose earnings exceed the prior-year earnings benchmark.
EPS	Variable indicating the earnings per share for all positive earnings firms.
EPSSqrd	Variable indicating the earnings per share squared for all positive earnings firms.

Table 3

Control Variables and Predicted Signs

Variable Name	Predicted Sign	Variable Description
Ret1	-	Stock price performance over the year (250 trading days) preceding the year of the write-off.
Ret5	-	Stock price performance over the period beginning five years and ending one year prior to the year of the write-off.
BTM	+	Industry-adjusted (that is, firm less the industry median) book-to-market ratio measured as of the fiscal year-end preceding the write-off.
ΔBTM	+	The mean change in the firm's book-to-market ratio measured over the five years preceding the write-off year.
ΔIndBTM	+	The average change in the median book-to-market ratio of all firms in the same four-digit SIC code as the firm measured over the five years preceding the write-off year.
ΔROA	-	The mean change in the firm's return-on-assets over the five years preceding the write-off year.
ΔIndROA	-	The average change in the return-on-assets of all firms in the same four-digit SIC code as the firm measured over the previous five years prior to the write-off year.
WOffHist	+	The number of years the firm reported negative special items in the previous five years.
IndWOffHist	+	The average number of years of all firms in the same four-digit SIC code as the firm reported negative special items in the previous five years.
ΔMgmt	+	Zero/one indicator variable indicating a change in the firm's top officers (chairman of the board, president, or chief executive officer) during the current or preceding accounting year.
Size	+/-	A control variable defined as the log of sales of the year prior to the write-off year.

Data Set

Composition of the final sample is detailed in Table 4. The initial sample consists of all 10,350 firms in the active Compustat database. The sample is reduced by 7,869

firms from eliminating missing observations and firms in the financial (SIC Codes 6000-6999) and utilities (SIC Codes 4000-4999) industries. These two industries are highly regulated and therefore are dropped as managers in these industries are not considered to have the same judgmental latitude as managers in other industries. A total of 1,008 negative earnings firms are also eliminated from the sample. Negative earnings firms are removed because as described in the previous chapter the hypotheses in this study deal only with positive earnings firms. The final sample available to test the first benchmark, zero earnings, consists of 1,473 positive earnings firms, 56 goodwill writedown firms[24] and 1,417 non-writedown firms. A total of 408 firms that did not meet or exceed prior-year earnings were eliminated from the sample for the second benchmark, prior period earnings, leaving 1,065 firms for examining that benchmark. These 1,065 firms in the final sample available for the second benchmark were comprised of 45 goodwill writedown and 1,020 non-writedown firms.

[24] A reminder: Firms were required to perform an initial evaluation test during the first three months in the first year for which the guideline became effective, 2002. Adjustments based upon the initial evaluation are shown below the line for "continuing operations." These adjustments are not included in this data set. This sample is composed of entries from the second evaluation test conducted during 2002, which is the first annual evaluation. These annual adjustments are included in "net income from continuing operations." Since this is the second time available to managers to manage earnings via their discretion in goodwill writedowns, an argument might be presented that these numbers are less likely to find significant results.

Table 4

Sample Composition

	Zero Earnings Benchmark	Prior-Year Earnings Benchmark
Firms in original sample	10,350	10,350
Less: Firms in financial and utilities industries and with missing observations	7,869	7,869
Less: Negative earnings firms	1,008	1,008
Less: Firms that did not meet or exceed prior years' earnings	n/a	408
Final Sample	1,473	1,065
Final Sample Composition		
Goodwill writedown firms	56	45
Non-writedown firms	1,417	1,020

Descriptive statistics are given in Table 5. Table 5 Panel A presents the descriptive statistics for the sample testing the first benchmark analysis, zero earnings. Likewise, Table 5 Panel B presents the descriptive statistics for the sample used to examine the second benchmark analysis, prior-year earnings. Each of these panels is broken down by writedown firms and non-writedown firms. The number of sample observations, the mean values, medians, standard deviations, minimums, and maximums for the treatment and control variables are presented. Similarities can be seen in the

variable statistic values between both writedown and non-writedown firms in the two benchmarks as well as between both benchmarks.

Table 5

Descriptive Statistics

Panel A: Zero Earnings Benchmark Firms

	Goodwill Writedown Firms N=56					Non-Writedown Firms N=1417				
Variable	**Mean**	**Median**	**Std Dev**	**Min**	**Max**	**Mean**	**Median**	**Std Dev**	**Min**	**Max**
Goodwill	0.18	0.07	0.30	0.00	1.51	0.00	0.00	0.00	0.00	0.00
ImpairFlag	0.59	1.00	0.50	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Ret1	0.06	-0.03	0.50	-0.48	2.79	0.10	0.03	0.51	-0.97	6.03
Ret5	0.07	-0.17	0.88	-0.99	3.45	0.11	-0.22	1.48	-1.75	21.09
BTM	-0.02	-0.11	0.54	-1.15	2.26	0.14	0.00	1.08	-10.32	21.12
ΔBTM	-1.56	0.02	10.50	-71.88	12.51	-2.19	0.01	90.89	-3166.20	1164.02
ΔIndBTM	-0.27	-0.13	4.68	-20.49	12.69	-0.97	-0.09	22.85	-226.26	304.17
ΔROA	94.79	1.14	662.21	-7.07	4960.36	40.18	1.22	773.15	-281.01	27960.96
ΔIndROA	63.96	1.86	189.36	-60.41	777.16	25.01	1.47	979.93	-22684.47	27960.96
WOffHist	2.36	2.50	1.29	0.00	5.00	2.07	2.00	1.27	0.00	5.00
IndWOffHist	2.09	2.14	0.39	1.20	3.00	2.09	2.09	0.44	0.33	4.33
Size	7.26	7.54	2.04	2.25	11.28	6.00	5.98	1.94	1.16	12.07
ΔMgmt	0.54	1.00	0.50	0.00	1.00	0.50	1.00	0.50	0.00	1.00
ManipZero	0.02	0.00	0.13	0.00	1.00	0.09	0.00	0.29	0.00	1.00
Z2$	0.71	1.00	0.46	0.00	1.00	0.83	1.00	0.38	0.00	1.00
ZeroBin1	0.02	0.00	0.13	0.00	1.00	0.09	0.00	0.29	0.00	1.00
ZeroBin2	0.05	0.00	0.23	0.00	1.00	0.10	0.00	0.30	0.00	1.00
ZeroBin3	0.07	0.00	0.26	0.00	1.00	0.11	0.00	0.31	0.00	1.00
EPS	1.66	1.47	1.38	0.08	6.18	1.19	0.88	1.37	0.00	1.00
EPSSqrd	4.61	2.17	7.67	0.01	38.15	3.28	0.77	17.14	0.00	513.02

Table 5 (continued)

Panel B: Prior-Year Earnings Benchmark Firms

	Goodwill Writedown Firms N=45					Non-Writedown Firms N=1020				
Variable	**Mean**	**Median**	**Std Dev**	**Min**	**Max**	**Mean**	**Median**	**Std Dev**	**Min**	**Max**
Goodwill	0.20	0.08	0.31	0.00	1.51	0.00	0.00	0.00	0.00	0.00
ImpairFlag	0.62	1.00	0.49	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Ret1	0.11	0.03	0.54	0.47	2.79	0.17	0.09	0.56	-0.97	6.03
Ret5	0.14	-0.10	0.95	-0.99	3.45	0.18	-0.22	1.64	-1.75	21.09
BTM	0.01	-0.11	0.59	-1.15	2.26	0.14	0.00	1.14	-10.32	21.12
ΔBTM	-0.64	0.02	4.43	-26.67	7.19	-3.06	0.01	107.06	-3166.20	1164.02
ΔIndBTM	0.23	-0.09	4.08	-11.92	12.69	-1.12	-0.09	24.83	-226.26	304.17
ΔROA	117.49	1.10	738.56	-7.07	4960.36	49.01	0.97	901.50	-187.41	27960.96
ΔIndROA	76.86	2.83	209.19	-60.41	777.16	28.33	1.47	1148.82	-22684.47	27960.96
WOffHist	2.44	3.00	1.25	0.00	5.00	2.14	2.00	1.27	0.00	5.00
IndWOffHist	2.09	2.14	0.38	1.20	3.00	2.11	2.10	0.44	0.33	4.33
Size	7.46	7.56	1.80	3.47	11.28	5.99	5.99	1.93	1.38	12.07
ΔMgmt	0.53	1.00	0.50	0.00	1.00	0.52	1.00	0.50	0.00	1.00
ManipPY	0.02	0.00	0.15	0.00	1.00	0.10	0.00	0.30	0.00	1.00
PY2$	0.87	1.00	0.34	0.00	1.00	0.90	1.00	0.30	0.00	1.00
PYBin1	0.02	0.00	0.15	0.00	1.00	0.10	0.00	0.30	0.00	1.00
PYBin2	0.02	0.00	0.15	0.00	1.00	0.11	0.00	0.31	0.00	1.00
PYBin3	0.04	0.00	0.21	0.00	1.00	0.11	0.00	0.30	0.00	1.00
EPS	1.79	1.65	1.28	0.36	6.18	1.27	0.99	1.23	0.01	11.99
EPSSqrd	4.79	2.72	7.03	0.13	38.15	3.12	0.98	8.26	0.00	143.76

Results

This research utilizes two sets of regressions to provide evidence regarding whether the discretion allowed in the new goodwill guideline has been used for opportunistic earnings management. The first set is examined with tobit regressions. The second set consists of logistic regressions. Three versions of each model are run. The three versions will be referred to as Model 1, Model 2, and Model 3, respectively, for each equation. Model 1 is a full model that includes all control variables discussed in Chapter 3. Note that in Model 1, every variable that is controlled by industry is also

represented without the industry control. For instance, the industry control variable for Change in Return on Assets (**ΔIndROA)** is in addition to the control variable for Change in Return on Assets that is not industry controlled (**ΔROA)**. Then, in Model 2, the industry controls are excluded because of concern that including both the industry controlled and the non-industry controlled variables in the same model could potentially cause some noise in the results. Model 3 only includes one control variable, **Size**. Due to the significance of **Size** in the first two models, Model 3 is estimated to determine the impact on the treatment variables if only the **Size** variable is included.[25]

Tobit Results

Goodwill is the dependent variable in each of the tobit regressions. As previously discussed, **Goodwill** represents the amount of impairment loss (scaled by number of outstanding shares) taken by a firm.

Table 6 presents the results of the tobit model for Equation 1, which is for hypothesis H1(a). As discussed earlier, Equation 1 measures the extent of incentive to manipulate earnings created by the proximity of pre-writedown earnings relative to the zero earnings benchmark. **ManipZero** indicates whether the firm's earnings are within the first decile of firms whose earnings exceed the zero value earnings benchmark. The **ManipZero** treatment variable is marginally significant for all three models (p-values of 0.1156 for Model 1, 0.1095 for Model 2, and 0.1212 for Model 3). This variable also has

[25] Tests on the data revealed no problems with multicollinearity.

the negative sign expected. These results suggest that managers are exploiting their discretion in recognizing goodwill impairment losses to manage earnings to exceed the zero value earnings benchmark.

Equation 2's tobit results, which are for hypothesis H1(b), are given in Table 7. Equation 2 examines the incentive to manage earnings relative to the proximity of pre-writedown earnings to the prior- year earnings benchmark. **ManipPY** indicates whether the firm's earnings are within the first decile of firms whose earnings exceed the prior-year earnings benchmark. **ManipPY** is negative and significant for all three models (p-values of 0.0738 for Model 1, 0.0741 for Model 2, and 0.0726 for Model 3). These results provide evidence that managers are using the latitude available in recognizing goodwill impairment losses to manage earnings to exceed the prior-year earnings benchmark.

Tables 8 and 9 report the results of the tobit models for Equations 3 and 4, which are for H2(a) and H2(b), respectively. Equations 3 and 4 also test the incentive to manipulate earnings created by the proximity of pre-writedown earnings relative to the earnings benchmarks, using an arbitrary measure of two dollars as a measure of small earnings. **Z2$** and **PY2$** are zero/one indicator variables representing the firms whose earnings exceed the zero value earnings benchmark and the prior-year earnings benchmark, respectively, by up to two dollars. Contrary to expectations, neither the **Z2$** nor the **PY2$** treatment variable is significant. As such, results for these models are not interpreted.

The tobit model results for Equation 5, which are for H3(a), H3(b), and H3(c), are provided in Table 10. Equation 5 tests for earnings management using variables representing the three positive deciles closest to the zero value earnings benchmark. These variables are zero/one indicator variables. **ZeroBin1**, **ZeroBin2**, and **ZeroBin3** denote that the firm's earnings are within each of the first three deciles of firms whose earnings exceed the zero value earnings benchmark. While all the treatment variables carry the expected negative sign, only the **ZeroBin1** treatment variable is significant for all three models (p-values of 0.0956 for Model 1, 0.0907 for Model 2, and 0.1055 for Model 3). None of the models provided significant results for the **ZeroBin2** and **ZeroBin3** treatment variables. These findings, showing significance for **ZeroBin1** only, suggest that managers are managing earnings through goodwill impairment losses so that current earnings exceed the zero value earnings benchmark when initial earnings are very close to the zero benchmark. However, as reported positive earnings move farther away from the zero earnings benchmark (for **ZeroBin2** or **ZeroBin3**), the model results are insignificant, implying the absence of earnings management behaviors in these bins.

Table 11 reveals the results of the tobit model for Equation 6, which examines H3(d), H3(e), and H3(f). Equation 6, similar to Equation 5, tests for earnings management using zero/one indicator variables that represent the three positive deciles closest to the prior-year earnings benchmark. **PYBin1**, **PYBin2**, and **PYBin3** are variables representing firms within the first three deciles of firms whose earnings exceed the prior-year earnings benchmark. The **PYBin1** and **PYBin2** treatment variables are

significant and negative as expected for all three models **(**for **PYBin1** p-values of 0.0551 for Model 1, 0.0550 for Model 2, and 0.0558 for Model 3 and for **PYBin2** p-values of 0.0644 for Model 1, 0.0672 for Model 2, and 0.0669 for Model 3). However, as shown in the table, the **PYBin3** treatment variable is not significant in any of the models. These results suggest that managers of companies with reported earnings very close to the prior-year earnings benchmark are exploiting their discretion in recognizing goodwill impairment losses to manage earnings to exceed the prior-year earnings benchmark.

The results of Equation 7's tobit model, which tests hypotheses H4(a) and H4(b), are furnished in Table 12. Equation 7 measures the relationship of goodwill impairment to earnings per share. **EPS** is the earnings per share for all positive earnings firms. **EPSSqrd** is a variable indicating the earnings per share squared for all positive earnings firms. The **EPS** treatment variable is marginally significant for all models (p-values of 0.1031 for Model 1, 0.1029 for Model 2, and 0.1255 for Model 3). This variable has the expected positive sign, suggesting that goodwill impairment writedowns are being understated by firms with smaller, but positive, earnings. However, the **EPSSqrd** treatment variable is not significant in any of the models. Therefore, the results suggest that the **EPSSqrd** treatment variable does not provide any explanatory value for determining earnings management behavior.

Table 6

H1(a) – Equation 1

$$Goodwill_i = \beta_0 + \beta_1 ManipZero_i + \beta_x Controls_i + \varepsilon_i$$

Variable	Model 1 Coefficient (Std. error)	Model 2 Coefficient (Std. error)	Model 3 Coefficient (Std. error)
Intercept	-1.3310 *** (0.2393)	-1.3937 *** (0.2036)	-1.3868 *** (0.1962)
ManipZero	-0.2394 * (0.1999)	-0.2464 * (0.2004)	-0.2298 * (0.1965)
Ret1	-0.0091 (0.0759)	-0.0080 (0.0751)	
Ret5	-0.0114 (0.0301)	-0.0112 (0.0300)	
BTM	-0.0166 (0.0389)	-0.0169 (0.0385)	
ΔBTM	-0.0001 (0.0005)	0.0000 (0.0005)	
ΔIndBTM	0.0005 (0.0018)		
ΔROA	0.0000 (0.0001)	0.0000 0.0000	
ΔIndROA	0.0000 (0.0001)		
WOffHist	0.0186 (0.0279)	0.0147 (0.0263)	
IndWOffHist	-0.0367 (0.0793)		
Size	0.0685 *** (0.0190)	0.0677 *** (0.0189)	0.0720 *** (0.0183)
ΔMgmt	0.0118 (0.0647)	0.0124 (0.0646)	
p-value			
ManipZero	0.1156	0.1095	0.1212

*** p ≤ 5 percent; ** 5 percent < p ≤ 10 percent; * 10 percent < p ≤ to 15 percent
Note: one-tailed significance.

Table 7

H1(b) – Equation 2

$$Goodwill_i = \beta_0 + \beta_1 ManipPY_i + \beta_x Controls_i + \varepsilon_i$$

Variable	Model 1 Coefficient (Std. error)		Model 2 Coefficient (Std. error)		Model 3 Coefficient (Std. error)	
Intercept	-1.4774 (0.3005)	***	-1.5762 (0.2597)	***	-1.5779 (0.2481)	***
ManipPY	-0.3190 (0.2203)	**	-0.3172 (0.2193)	**	-0.3168 (0.2174)	**
Ret1	0.0013 (0.0840)		0.0019 (0.0829)			
Ret5	-0.0093 (0.0333)		-0.0085 (0.0330)			
BTM	-0.0051 (0.0424)		-0.0057 (0.0418)			
ΔBTM	0.0000 (0.0009)		0.0001 (0.0008)			
ΔIndBTM	0.0100 (0.0022)					
ΔROA	0.0000 (0.0001)		0.0000 0.0000			
ΔIndROA	0.0000 (0.0001)					
WOffHist	0.0110 (0.0337)		0.0055 (0.0318)			
IndWOffHist	-0.0550 (0.0950)					
Size	0.0974 (0.0247)	***	0.0967 (0.0246)	***	0.0979 (0.0237)	***
ΔMgmt	-0.0132 (0.0781)		-0.0097 (0.0778)			
p-value						
ManipPY	0.0738		0.0741		0.0726	

*** p ≤ 5 percent; ** 5 percent < p ≤ 10 percent; * 10 percent < p ≤ to 15 percent
Note: one-tailed significance.

Table 8

H2(a) – Equation 3

$$Goodwill_i = \beta_0 + \beta_1 Z2\$_i + \beta_x Controls_i + \varepsilon_i$$

Variable	Model 1 Coefficient (Std. error)	Model 2 Coefficient (Std. error)	Model 3 Coefficient (Std. error)
Intercept	-1.2737 ***	-1.3519 ***	-1.3455 ***
	(0.2534)	(0.2200)	(0.2154)
Z2$	-0.0734	-0.0735	-0.0658
	(0.0791)	(0.0788)	(0.0772)
Ret1	-0.0038	-0.0021	
	(0.0749)	(0.0739)	
Ret5	-0.0089	-0.0085	
	(0.0296)	(0.0295)	
BTM	-0.0165	-0.0167	
	(0.0390)	(0.0385)	
ΔBTM	-0.0001	0.0000	
	(0.0005)	(0.0005)	
ΔIndBTM	0.0005		
	(0.0018)		
ΔROA	0.0000	0.0000	
	(0.0001)	(0.0000)	
ΔIndROA	0.0000		
	(0.0001)		
WOffHist	0.0207	0.0157	
	(0.0280)	(0.0263)	
IndWOffHist	-0.0450		
	(0.0788)		
Size	0.0685 ***	0.0678 ***	0.0721 ***
	(0.0195)	(0.0194)	(0.0187)
ΔMgmt	0.0150	0.0156	
	(0.0646)	(0.0645)	
p-value			
Z2$	0.1768	0.1756	0.1969

*** p ≤ 5 percent; ** 5 percent < p ≤ 10 percent; * 10 percent < p ≤ to 15 percent
Note: one-tailed significance.

Table 9

H2(b) – Equation 4

$$Goodwill_i = \beta_0 + \beta_1 PY2\$_i + \beta_x Controls_i + \varepsilon_i$$

Variable	Model 1 Coefficient (Std. error)	Model 2 Coefficient (Std. error)	Model 3 Coefficient (Std. error)
Intercept	-1.4297 *** (0.3231)	-1.5401 *** (0.2849)	-1.5325 *** (0.2689)
PY2$	-0.0823 (0.1202)	-0.0799 (0.1198)	-0.0816 (0.1175)
Ret1	0.0089 (0.0831)	0.0098 (0.0819)	
Ret5	-0.0045 (0.0325)	-0.0037 (0.0322)	
BTM	-0.0061 (0.0434)	-0.0064 (0.0426)	
ΔBTM	0.0000 (0.0009)	0.0001 (0.0008)	
ΔIndBTM	0.0008 (0.0021)		
ΔROA	0.0000 (0.0001)	0.0000 (0.0000)	
ΔIndROA	0.0000 (0.0001)		
WOffHist	0.0141 (0.0338)	0.0079 (0.0319)	
IndWOffHist	-0.0608 (0.0949)		
Size	0.0988 *** (0.0247)	0.0980 *** (0.0245)	0.0988 *** (0.0236)
ΔMgmt	-0.0182 (0.0784)	-0.0152 (0.0781)	
p-value			
PY2$	0.2469	0.2525	0.2438

*** p ≤ 5 percent; ** 5 percent < p ≤ 10 percent; * 10 percent < p ≤ to 15 percent
Note: one-tailed significance.

Table 10

H3(a), H3(b), and H3(c) – Equation 5

$$Goodwill_i = \beta_0 + \beta_1 ZeroBin1_i + \beta_2 ZeroBin2_i + \beta_3 ZeroBin3_i + \beta_x Controls_i + \varepsilon_i$$

Variable	Model 1 Coefficient (Std. error)	Model 2 Coefficient (Std. error)	Model 3 Coefficient (Std. error)
Intercept	-1.2792 ***	-1.3452 ***	-1.3469 ***
	(0.2443)	(0.2086)	(0.2005)
ZeroBin1	-0.2650 **	-0.2717 **	-0.2479 *
	(0.2027)	(0.2033)	(0.1981)
ZeroBin2	-0.0856	-0.0845	-0.0725
	(0.1361)	(0.1356)	(0.1321)
ZeroBin3	-0.0647	-0.0627	-0.0591
	(0.1223)	(0.1221)	(0.1218)
Ret1	-0.0166	-0.0151	
	(0.0773)	(0.0764)	
Ret5	-0.0147	-0.0144	
	(0.0308)	(0.0307)	
BTM	-0.0144	-0.0148	
	(0.0395)	(0.0392)	
ΔBTM	-0.0001	0.0000	
	(0.0005)	(0.0005)	
ΔIndBTM	0.0005		
	(0.0018)		
ΔROA	0.0000	0.0000	
	(0.0001)	(0.0000)	
ΔIndROA	0.0000		
	(0.0001)		
WOffHist	0.0186	0.0146	
	(0.0279)	(0.0263)	
IndWOffHist	-0.0381		
	(0.0792)		
Size	0.0636 ***	0.0629 ***	0.0680 ***
	(0.0198)	(0.0197)	(0.0190)
ΔMgmt	0.0116	0.0123	
	(0.0646)	(0.0645)	
p-values			
ZeroBin1	0.0956	0.0907	0.1055
ZeroBin2	0.2647	0.2666	0.2916
ZeroBin3	0.2986	0.3038	0.3138

*** p ≤ 5 percent; ** 5 percent < p ≤ 10 percent; * 10 percent < p ≤ to 15 percent

Note: one-tailed significance.

Table 11

H3(d), H3(e), and H3(f) – Equation 6

$$Goodwill_i = \beta_0 + \beta_1 PYBin1_i + \beta_2 PYBin2_i + \beta_3 PYBin3_i + \beta_x Controls_i + \varepsilon_i$$

Variable	Model 1 Coefficient (Std. error)	Model 2 Coefficient (Std. error)	Model 3 Coefficient (Std. error)
Intercept	-1.3694 ***	-1.4946 ***	-1.5126 ***
	(0.2988)	(0.2561)	(0.2447)
PYBin1	-0.3535 **	-0.3519 **	-0.3472 **
	(0.2212)	(0.2202)	(0.2182)
PYBin2	-0.3271 **	-0.3165 **	-0.3167 **
	(0.2153)	(0.2113)	(0.2113)
PYBin3	-0.1531	-0.1511	-0.1509
	(0.1645)	(0.1632)	(0.1623)
Ret1	-0.0115	-0.0106	
	(0.0854)	(0.0841)	
Ret5	-0.0084	-0.0072	
	(0.0333)	(0.0330)	
BTM	-0.0065	-0.0069	
	(0.0425)	(0.0418)	
ΔBTM	0.0000	0.0001	
	(0.0008)	(0.0007)	
ΔIndBTM	0.0001		
	(0.0022)		
ΔROA	0.0008	0.0000	
	(0.0001)	(0.0000)	
ΔIndROA	0.0000		
	(0.0001)		
WOffHist	0.0070	-0.0001	
	(0.0341)	(0.0322)	
IndWOffHist	-0.0695		
	(0.0966)		
Size	0.0295 ***	0.0917 ***	0.0929 ***
	(0.0249)	(0.0247)	(0.0238)
ΔMgmt	-0.0147	-0.0110	
	(0.0790)	(0.0785)	
p-values			
PYBin1	0.0551	0.0550	0.0558
PYBin2	0.0644	0.0672	0.0669
PYBin3	0.1759	0.1773	0.1762

*** p ≤ 5 percent; ** 5 percent < p ≤ 10 percent; * 10 percent < p ≤ to 15 percent

Note: one-tailed significance.

Table 12

H4(a) and H4(b) – Equation 7

$$Goodwill_i = \beta_0 + \beta_1 EPS_i + \beta_2 EPSSqrd_i + \beta_x Controls_i + \varepsilon_i$$

Variable	Model 1 Coefficient (Std. error)	Model 2 Coefficient (Std. error)	Model 3 Coefficient (Std. error)
Intercept	-1.3498 ***	-1.4253 ***	-1.4143 ***
	(0.2383)	(0.2031)	(0.1960)
EPS	0.0813 *	0.0811	0.0705 *
	(0.0643)	(0.0641)	(0.0614)
EPSSqrd	-0.0078	-0.0078	-0.0068
	(0.0098)	(0.0097)	(0.0095)
Ret1	-0.0138	-0.0120	
	(0.0770)	(0.0759)	
Ret5	-0.0143	-0.0139	
	(0.0311)	(0.0309)	
BTM	-0.0144	-0.0147	
	(0.0393)	(0.0389)	
ΔBTM	-0.0001	0.0000	
	(0.0005)	(0.0005)	
ΔIndBTM	0.0005		
	(0.0018)		
ΔROA	0.0000	0.0000	
	(0.0001)	(0.0000)	
ΔIndROA	0.0000		
	(0.0001)		
WOffHist	0.0220	0.0173	
	(0.0280)	(0.0263)	
IndWOffHist	-0.0434		
	(0.0783)		
Size	0.0586	0.0579 ***	0.0641 ***
	(0.0210)	(0.0209)	(0.0199)
ΔMgmt	0.0129	0.0136	
	(0.0642)	(0.0641)	
p-values			
EPS	0.1031	0.1029	0.1255
EPSSqrd	0.2109	0.2118	0.2374

*** p ≤ 5 percent; ** 5 percent < p ≤ 10 percent; * 10 percent < p ≤ to 15 percent
Note: one-tailed significance.

Logistic Results

The second set of regressions is conducted as tests to see if the robustness of the tobit results hold with a model specified for logistics. These hypotheses are basically a repetition of the above tobit regressions, except that **ImpairFlag** is the dependent variable. As described in Chapter 3, **ImpairFlag** is a zero/one indicator variable where 0 represents a company that has taken a small impairment loss and 1 represents a company that has taken a large impairment loss. As with the tobit regressions, three versions of each logistic model are run. Model 1 is a full model that includes all the control variables. Model 2 excludes the industry controls. Model 3 only includes one control variable, **Size.**

Equations 8 and 9, the logistic models for Hypotheses H5(a) and H5(b), did not converge.[26] As mentioned above, **ManipZero** and **ManipPY** indicate whether the firm's earnings are within the first decile of firms whose earnings exceed the zero value earnings and the prior-year earnings benchmarks, respectively. Since these equations failed to converge, these results cannot be relied upon nor interpreted.[27]

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[26] Each statistical software program has "stopping rules." For instance, an algorithm may be allowed to only run as long as one of the statistical values does not go below a preset number. Alternatively, the algorithm may be allowed to only run a maximum number of times. If the program does not find a satisfactory solution before stopping, the message will be given that the equation failed to converge. If an equation fails to converge, then the results given may or may not be the correct solution. Therefore, these results cannot be relied upon.

[27] Since equations 8 and 9, testing Hypotheses H5(a) and H5(b), did not converge, additional testing was conducted to see at what level significance could be achieved. It was determined that enlarging Bin 1 to 20% (as opposed to the previously tested 10%) gave significant results with p-values of 0.0636, 0.0628, and 0.0585 for Models 1, 2, and 3 for Equation 8 (H5(a)), respectively. It also resulted in p-values of 0.0519, 0.0519, and 0.0450 for Models 1, 2, and 3 for Equation 9 (H5(b)), respectively. In addition, a test

The results of the logistic model for Equation 10, which tests hypothesis H6(a), are presented in Table 13. Equation 10 tests for earnings management using an arbitrary measure of small earnings, two dollars. **Z2$** is a zero/one indicator variable representing the firms whose earnings exceed the zero value earnings benchmark by up to two dollars. The **Z2$** treatment variable is significant for all three models (p-values of 0.0645 for Model 1, 0.0620 for Model 2, and 0.0648 for Model 3). This variable also has the negative sign as expected for all models. These results support the contention that managers are managing earnings through their discretion in recognizing goodwill impairment losses so that earnings exceed the zero value earnings.

Equation 11's logistic model results, which examine hypothesis H6(b), are disclosed in Table 14. Equation 11 also tests for earnings management using the two dollar arbitrary measure of small earnings. **PY2$** is a zero/one indicator variable representing the firms whose earnings exceed the prior-year earnings benchmark by up to two dollars. The **PY2$** treatment variable is marginally significant and negative, as expected, for all three models (p-values of 0.1329 for Model 1, 0.1400 for Model 2, and 0.1142 for Model 3). These results suggest that to exceed the prior-year earnings benchmark, managers are managing earnings by recognizing goodwill impairment losses that allow earnings to exceed the prior-year earnings benchmark.

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was conducted that eliminated the zero goodwill writedown observations from the small writedown category, leaving only observations for firms that took goodwill writedowns. This test resulted in p-values of 0.1129, 0.1205, and 0.0237 for Models 1, 2, and 3 for Equation 8 (H5(a)), respectively. It also resulted in p-values of 0.1953, 0.2902, and 0.3545 for Models 1, 2, and 3 for Equation 9 (H5(b)), respectively.

Upon further examination of the data, it has been noted that the two dollar arbitrary amounts actually represent approximately the lower 82% of the sample observations. This outcome was unintentional as the two dollar amount was thought to represent a small earnings, and, thereby, a small number of the total observations. Additional tests, therefore, were conducted for smaller arbitrary amounts. Table 15 summarizes the results of the various tests. It appears that the results for an arbitrary $1.50 earnings give slightly better results for both the tobit and the logistic results. However, the overall picture does not change appreciably with any of the results given. Tests conducted for the $.50 and $.05 earnings did not converge, and are not reported.

Equation 12, a logistic model testing Hypotheses H7(a), H7(b), and H7(c), did not converge. As mentioned above, **ZeroBin1**, **ZeroBin2**, and **ZeroBin3** are variables indicating that the firm's earnings are within the first three deciles of firms whose earnings exceed the zero value earnings benchmark. Since Equation 12 failed to converge, results from this equation are not reported nor interpreted.

Equation 13, a logistic model testing Hypotheses H7(d), H7(e), and H7(f), also did not converge. Equation 13 tests for earnings management using the **PYBin1**, **PYBin2**, and **PYBin3** variables, which represent firms within the first three deciles of firms with earnings that exceed the prior-year earnings benchmark. Since Equation 13 failed to converge, results from this equation are not presented and cannot be interpreted.

The results of the logistic model for Equation 14, which examines Hypotheses H8(a) and H8(b), are given in Table 16. Equation 14 measures the relationship of

goodwill impairment to earnings per share. **EPS** is a variable indicating the earnings per share for all positive earnings firms. **EPSSqrd** represents the earnings per share squared for all positive earnings firms. The **EPS** treatment variable is highly significant and positive, as expected, for all three models (p-values of 0.0219 for Model 1, 0.0222 for Model 2, and 0.0258 for Model 3). These results suggest that goodwill impairment writedowns are being understated by firms with smaller, but positive, earnings. The **EPSSqrd** treatment variable is marginally significant for all three models (p-values of 0.1049 for Model 1, 0.1094 for Model 2, and 0.1239 for Model 3). The coefficient for this variable is negative as expected. These results suggest that large goodwill impairment writedowns are not typically needed for very successful firms.

Table 13

H6(a) – Equation 10

$$ImpairFlag_i = \beta_0 + \beta_1 Z2\$_i + \beta_x Controls_i + \varepsilon_i$$

Variable	Model 1 Coefficient (Std. error)	Model 2 Coefficient (Std. error)	Model 3 Coefficient (Std. error)
Intercept	-4.9299 ***	-5.4775 ***	-5.0947 ***
	(1.1552)	(0.8918)	(0.8282)
Z2$	-0.6114 *	-0.6166 *	-0.5974 **
	(0.4026)	(0.4008)	(0.3942)
Ret1	0.3153	0.3175	
	(0.3335)	(0.3266)	
Ret5	-0.0128	-0.0053	
	(0.1557)	(0.1524)	
BTM	0.0136	0.0075	
	(0.1465)	(0.1442)	
ΔBTM	0.0003	0.0003	
	(0.0046)	(0.0043)	
ΔIndBTM	0.0018		
	(0.0098)		
ΔROA	0.0002	0.0001	
	(0.0002)	(0.0001)	
ΔIndROA	-0.0001		
	(0.0002)		
WOffHist	0.1286	0.0896	
	(0.1533)	(0.1437)	
IndWOffHist	-0.3123		
	(0.4197)		
Size	0.2668 ***	0.2658 ***	0.2659 ***
	(0.1025)	(0.1019)	(0.0952)
ΔMgmt	0.2806	0.2763	
	(0.3636)	(0.3632)	
p-value			
Z2$	0.0645	0.0620	0.0648

*** p ≤ 5 percent; ** 5 percent < p ≤ 10 percent; * 10 percent < p ≤ to 15 percent
Note: one-tailed significance.

Table 14

H6(b) – Equation 11

$$ImpairFlag_i = \beta_0 + \beta_1 PY2\$_i + \beta_x Controls_i + \varepsilon_i$$

Variable	Model 1 Coefficient (Std. error)	Model 2 Coefficient (Std. error)	Model 3 Coefficient (Std. error)
Intercept	-4.7893 ***	-5.3961 ***	-5.0939 ***
	(1.3094)	(1.0051)	(0.8751)
PY2$	-0.5901 *	-0.5730 *	-0.6155 *
	(0.5302)	(0.5303)	(0.5110)
Ret1	0.2101	0.2092	
	(0.3607)	(0.3528)	
Ret5	0.0137	0.0201	
	(0.1453)	(0.1422)	
BTM	0.0362	0.0302	
	(0.1491)	(0.1465)	
ΔBTM	0.0001	0.0002	
	(0.0040)	(0.0036)	
ΔIndBTM	0.0024		
	(0.0103)		
ΔROA	0.0002	0.0001	
	(0.0002)	(0.0001)	
ΔIndROA	-0.0001		
	(0.0001)		
WOffHist	0.1008	0.0624	
	(0.1660)	(0.1575)	
IndWOffHist	-0.3347		
	(0.4564)		
Size	0.3201 ***	0.3177 ***	0.3049 ***
	(0.1067)	(0.1063)	(0.0990)
ΔMgmt	-0.0352	-0.0345	
	(0.3938)	(0.3928)	
p-value			
PY2$	0.1329	0.1400	0.1142

*** p ≤ 5 percent; ** 5 percent < p ≤ 10 percent; * 10 percent < p ≤ to 15 percent
Note: one-tailed significance.

Table 15

Hypotheses Tests Results – Testing Different Small Earnings Criteria

p-values										
					Tobit			Logistic		
Hypothesis	**Equation**	**Earnings Criteria**	**Variable**	**% of Observations**	**Model 1**	**Model 2**	**Model 3**	**Model 1**	**Model 2**	**Model 3**
H2(a), H6(a)	**3,10**	**$2**	**Z2$**	**82**	0.1768	0.1756	0.1969	0.0645	0.0620	0.0648
H2(b), H6(b)	**4,11**	**$2**	**PY2$**	**82**	0.2469	0.2525	0.2438	0.1329	0.1400	0.1142
H2(a), H6(a)	**3,10**	**$1.50**	**Z2$**	**71**	0.0797	0.0774	0.0937	0.0353	0.0344	0.0354
H2(b), H6(b)	**4,11**	**$1.50**	**PY2$**	**71**	0.2459	0.2480	0.2362	0.1262	0.1273	0.1032
H2(a), H6(a)	**3,10**	**$1.00**	**Z2$**	**54**	0.3021	0.2969	0.3221	0.0889	0.0848	0.0846
H2(b), H6(b)	**4,11**	**$1.00**	**PY2$**	**54**	0.2698	0.2706	0.2592	0.1149	0.1162	0.0882

Table 16

H8(a) and H8(b) – Equation 14

$$ImpairFlag_i = \beta_0 + \beta_1 EPS_i + \beta_2 EPSSqrd_i + \beta_x Controls_i + \varepsilon_i$$

Variable	Model 1 Coefficient (Std. error)	Model 2 Coefficient (Std. error)	Model 3 Coefficient (Std. error)
Intercept	-5.6327 ***	-6.1819 ***	-5.7923 ***
	(1.0598)	(0.7678)	(0.6911)
EPS	0.6971 ***	0.6881 ***	0.6442 ***
	(0.3456)	(0.3423)	(0.3309)
EPSSqrd	-0.0602 *	-0.0584 *	-0.0541 *
	(0.0480)	(0.0475)	(0.0468)
Ret1	0.2697	0.2741	
	(0.3540)	(0.3468)	
Ret5	-0.0724	-0.0618	
	(0.1806)	(0.1765)	
BTM	0.0337	0.0265	
	(0.1493)	(0.1474)	
ΔBTM	0.0000	0.0001	
	(0.0041)	(0.0038)	
ΔIndBTM	0.0019		
	(0.0095)		
ΔROA	0.0002	0.0001	
	(0.0002)	(0.0001)	
ΔIndROA	-0.0001		
	(0.0002)		
WOffHist	0.1422	0.1044	
	(0.1532)	(0.1441)	
IndWOffHist	-0.3073		
	(0.4160)		
Size	0.1749 **	0.1754 **	0.1889 ***
	(0.1142)	(0.1136)	(0.1056)
ΔMgmt	0.2918	0.2883	
	(0.3641)	(0.3635)	
p-values			
EPS	0.0219	0.0222	0.0258
EPSSqrd	0.1049	0.1094	0.1239

*** p ≤ 5 percent; ** 5 percent < p ≤ 10 percent; * 10 percent < p ≤ to 15 percent
Note: one-tailed significance.

Control Variables

Control variables are added to regression models to control for effects that may otherwise drive the results of the regression. As shown in Tables 6 through 18 for both the tobit and logistic equations, Models 1 and 2 only result in one control variable that exhibits significance, **Size**. As a result, Model 3 includes only the **Size** control variable. **Size** remains highly significant and positive in the third model for all equations.

Summary

Results from the hypotheses tests of the data are presented in this chapter. The chapter covers a description of the data sample, as well as the results of tobit and regression analyses. In addition, the results are consistent with prior research in finding that size is a significant control variable. A discussion of the overall implications of the findings is included in the next chapter.

CHAPTER V

DISCUSSION

Chapter 4 presented test results of the analyses performed on the sample data. This chapter considers the overall implications of those analyses and draws final conclusions. The chapter concludes with a discussion of this project's weaknesses as well as future research ideas.

Purpose of Study

This study is driven by agency theory. An agency relationship exists when one party, the principal, engages another party, the agent, to perform services on behalf of the principal. These services include making decisions on behalf of the principal. Information asymmetry, however, complicates the relationship. In addition, both parties in an agency relationship are considered to be motivated by self-interest. As a result, one of the greatest challenges in an agency relationship is to design an agency contract that achieves congruence of goals between the principal and agent. These agency contracts are often tied to financial reporting outcomes.

Due to self-interest, managers therefore have strong motivations to manage earnings in financial reporting. One response to these motivations is to manage earnings to exceed key earnings thresholds. The recent modification to the rules for goodwill

accounting, as set by FASB, eliminates annual amortization charges for goodwill. Rather, FAS 142 requires annual valuation of business units to determine whether goodwill is impaired. If impairment does exist, a writedown of goodwill is then recognized on the income statement. The estimation of goodwill impairment requires managerial discretion. However, this discretion can also then be used to manage earnings.

To address the question of whether managers exploit their discretion in recognizing goodwill impairments to manage earnings, this dissertation examines evidence regarding financial reporting activity around two key earnings benchmarks, zero earnings and prior-year earnings. Specifically, this study tests goodwill impairment writedowns taken for the year 2002 from publicly traded companies, utilizing financial information obtained from the Compustat and CRSP databases.

Overall Implications and Conclusions

Comparative information for both the tobit and logistic models is presented in Table 17. This table illustrates that most of the hypotheses are supported by the results of the tests performed on the sample data. That is, the results of both tobit and logistic regression models suggest that managers are exploiting their discretion in recognizing goodwill impairments to manage earnings. The first seven equations, which evaluate Hypotheses H1 through H4, are tested using tobit models and are discussed first. H1(a) and H1(b), tested by Equations 1 and 2, are fully supported. These hypotheses test

whether earnings are managed to exceed the benchmark of zero or prior-year earnings. These findings hold in the first decile of positive earnings beyond the specified benchmark. H3(a), H3(b), and H3(c), in Equation 5, are also supported for the decile just beyond the zero earnings benchmark. Likewise, H3(d), H3(e), and H3(f), in Equation 6, are supported for the first two deciles beyond the prior-year earnings benchmark. H4(a) and H4(b), from Equation 7, are supported, suggesting that goodwill impairment writedowns are being understated by firms with smaller, but positive, earnings. H2(a) and H2(b), examined by Equations 3 and 4, however, are not supported for the arbitrary two dollar earnings levels above the zero and prior-year earnings benchmarks.

The second set of equations, which evaluate Hypotheses H5 through H8, was tested using logistic models. The purpose of including the logistics models was to test the robustness of the tobit results. While several of the logistics models did not converge, several models ran successfully. H6(a) and H6(b), tested by Equations 10 and 11, are fully supported by the logistics models. These equations test whether earnings are managed by an arbitrary two dollar earnings level above the zero and prior-year earnings benchmarks. These model results are stronger than the tobit results for Equations 3 and 4, for H2(a) and H2(b), which tested these same arbitrary amounts.

H8(a) and H8(b), tested in Equation 14, are also fully supported by the logistics models. This model tests the relationship between the size of the goodwill impairment loss taken with both earnings and squared earnings. This test supports the hypothesis that firms that have greater positive prewritedown earnings will have larger writedowns than

firms with small positive earnings. It also supports the hypothesis that as earnings for firms become very large, writedowns will become smaller and smaller, illustrating that large goodwill impairment writedowns are not typically needed for very successful firms. These results are stronger than the tobit results for Equation 7, for H4(a) and H4(b), which also tested this relationship.

All of the logistics models, then, that ran successfully add support to the tobit results. In summary, the tobit regressions results support the overall hypothesis that managers are exploiting their discretion in recognizing goodwill impairments to manage earnings. The logistic regressions results further add robustness to the tobit models. Finding support for earnings management behavior is especially insightful since the goodwill writedown tested in this dissertation was the second opportunity for impairment recognition under the new FASB guideline's first year. In conclusion, agency theory was tested in this study by considering whether managers exploit the discretion allowed them under the new accounting guideline for taking goodwill impairment writedowns. The test results provide some evidence for the agency theory, indicating that managers are suspected of exploiting their discretion in recognizing goodwill impairments to manage earnings.

Table 17

Hypothesis Tests Results Summary

			Tobit			Logistic		
Hypothesis	**Equation**	**Variable**	**Model 1**	**Model 2**	**Model 3**	**Model 1**	**Model 2**	**Model 3**
H1(a), H5(a)	**1,8**	**ManipZero**	Supported p=0.1156	Supported p=0.1095	Supported p=0.1212	***	***	***
H1(b), H5(b)	**2,9**	**ManipPY**	Supported p=0.0738	Supported p=0.0741	Supported p=0.0726	***	***	***
H2(a), H6(a)	**3,10**	**Z2$**	Rejected	Rejected	Rejected	Supported p=0.0645	Supported p=0.0620	Supported p=0.0648
H2(a), H6(a)	**4,11**	**PY2$**	Rejected	Rejected	Rejected	Supported p=0.1329	Supported p=0.1400	Supported p=0.1142
H3(a), H7(a)	**5,12**	**ZeroBin1**	Supported p=0.0956	Supported p=0.0907	Supported p=0.1055	***	***	***
H3(b), H7(b)	**5,12**	**ZeroBin2**	Rejected	Rejected	Rejected	***	***	***
H3(c), H7(c)	**5,12**	**ZeroBin3**	Rejected	Rejected	Rejected	***	***	***
H3(d), H7(d)	**6,13**	**PYBin1**	Supported p=0.0551	Supported p=0.0550	Supported p=0.0558	***	***	***
H3(e), H7(e)	**6,13**	**PYBin2**	Supported p=0.0644	Supported p=0.0672	Supported p=0.0669	***	***	***
H3(f), H7(f)	**6,13**	**PYBin3**	Rejected	Rejected	Rejected	***	***	***
H4(a), H8(a)	**7,14**	**EPS**	Supported p=0.1031	Supported p=0.1029	Supported p=0.1255	Supported p=0.0219	Supported p=0.0222	Supported p=0.0258
H4(b), H8(b)	**7,14**	**EPSSqrd**	Rejected	Rejected	Rejected	Supported p=0.1049	Supported p=0.1094	Supported p=0.1239

*** This model failed to converge. As such, the results cannot be interpreted.

As noted in chapter 4 with the results, the only control variable that was significant was **Size**. Perhaps larger firms are subjected to greater levels of scrutiny, thereby limiting the discretion allowed managers. This scrutiny can take different forms, resulting in differing levels of restraint placed upon managers. For instance, one of the restrictions imposed by the audit function is that managers and procedures are critically observed for compliance with company policies. Publicly available capital market information places restrictions on the actions of managers, making public much day-to-day data as well as historical data and activities. Tracking by financial analysts also provides an additional type of scrutiny, with perhaps increased levels of observation and collection of financial data and information concerning managerial activity. If larger firms are subjected to greater levels of scrutiny in these ways, the results for **Size** suggest that as the size of a firm increases, greater amounts of scrutiny will result in less of an opportunity to manage earnings through goodwill impairment values, and thus increased amounts of goodwill writedown.

Contribution of This Study

This study is important for two reasons. First, the FASB may not have accomplished what was intended when setting these standards for the new goodwill impairment rule. The FASB's primary intent in making the change was to produce financial statements that would more accurately reflect the underlying economics of the goodwill asset (FAS 142). However, if the managerial discretion to estimate goodwill

impairment is being used to manage earnings, the financial statements, both the balance sheet and the income statement, may be distorted.

Second, this study is important because standard setters need to know which standards and which accruals are being used to manage earnings. Prevention of earnings management is needed to further insure comparability of accounting numbers. Comparability is potentially impaired when greater amounts of managerial estimates are involved in the preparation of financial statements. As such, the FASB may need to consider more detailed guidelines. Results from this dissertation further inform this question, suggesting that managers exploit their discretion in recognizing goodwill impairments to manage earnings. Thus, this dissertation contributes to the earnings management literature in that it highlights the immediate exploitation of increased judgmental latitude for earnings management purposes.

Weaknesses of Study

Several weaknesses are inherent in this study. First, even though the sample began with the entire active Compustat database of 10,350 firms, the final sample for the zero earnings benchmark was 1,473 firms, with only 56 of these being writedown firms. Likewise, the final sample for the prior-year earnings benchmark was 1,065 firms, but only 45 of those are writedown firms. While the final number of writedown firms is small, both of these sample sizes exceed the minimum amount to satisfy the central limit theorem (i.e., 30 observations).

Second, prior literature widely acknowledges that the Compustat database contains errors. The extent to which these errors may impact a particular research project, such as this one, is unknown. However, the sample data is similar both between writedown firms and non-writedown firms as well as between both benchmark samples. This similarity gives some assurance that any discrepancies in the data are not likely to be confined to a particular subsample of the data. Therefore, relying on this data for testing the hypotheses in this study seems reasonable.

Finally, one of the primary disadvantages of using real-world data (such as that collected from publicly-traded companies and compiled into the Compustat database) in any research is whether influences other than those being captured in the analyses may have impacted the findings. That is, did the variables and controls in this research really test what was intended or how many extraneous factors exist, but were not included? This potential disadvantage exists in this research as this dissertation is an archival empirical research study. However, the large sample sizes used lessen concerns in this area. Ideally, though, experimental settings could be employed to mitigate this concern.

On the other hand, advantages exist when using real-world data, such as in this dissertation research. One primary advantage is that by using real-world data, the results reflect what is actually going on in the business community. Therefore, experimental methodologies are not necessary for examining the impact in real-world settings, making this methodology powerful and immediately useful in examining the hypotheses posed in this dissertation. A second advantage, closely related to the first, is that by using real-

world data, this study avoids the concern that the subjects in an experiment might be uninformed or dishonest about what they would do in a given setting. Rather, the data reflects actions that were taken and there is no need to try to assess the validity of responses to surveys or to experimental results.

Future Research Opportunities

While the FASB made an excellent attempt at improving financial reporting, difficulties exist in the implementation of the new goodwill impairment rule. These difficulties are expected to persist due to the level of discretion allowed managers in estimating goodwill impairment. Perhaps future research in this area could examine possible methods of solving this dilemma, so that recommendations can be made for further regulatory actions from standard setting bodies, such as the FASB.

This research project specifically looked at the first year that the new accounting guideline for goodwill impairment was effective. Future research could repeat this analysis for the years following 2002. Examination of the panel data might reveal additional insights into managerial discretion regarding goodwill writedowns. This research might, then, further inform standard setting bodies as to the pervasiveness of earnings management related to the guideline and, thereby, suggest specific approaches for improved regulation.

The final sample in this research project included only a small number of goodwill writedown firms. This sample size may have impeded discovery of insights

that would have been revealed with a larger sample. However, future research could consider ways to improve this analysis, specifically addressing ways to improve analysis when the sample size is small.

This dissertation took a critical look at earnings management related to goodwill writedowns around key earnings benchmarks. However, future research might consider earnings management from the viewpoint of all firms with goodwill on their balance sheet. That is, not only from those firms that just barely exceed earnings thresholds. Some of this type of research is already being conducted. For instance, several earnings management research papers have been published that take a critical look at firms that may be using their discretion in the amount of goodwill impairment to take big baths (as discussed in chapter 2).

A related research idea would be to search for ways to determine if a firm should have taken a writedown but did not. Most of the firms in the final sample in this dissertation took no writedown. Since no writedown is an option when managing earnings, these firms were included in the small writedown category. Future research might develop a method of closely estimating the number of firms within such a group that should have taken a writedown.

Future research might also look for ways to explain the positive and significant relationship between **Size** and goodwill writedowns. This dissertation has surmised that this relationship may be due to the increased scrutiny that larger firms experience.

However, these and other ideas might be researched to see if any insights into this relationship develop.

Summary

To summarize, even though 2002 is the first year for which the new guideline for goodwill impairment applies, results from this study suggest that it has already been seized as an avenue for earnings management. To reiterate, these models' results suggest that managers are exploiting their discretion in recognizing goodwill impairments to manage earnings.

REFERENCES

Accounting Principles Board. (1970). Intangible Assets. *Accounting Principles Board Opinion No. 17.*

AICPA. (2006). Proposed Statement on Standards for Valuation Services. *Exposure Draft: Valuation of a Business, Business Ownership Interest, Security, or Intangible Asset.* Jersey City, NJ: American Institute of Certified Public Accountants.

Altamuro, J., Beatty, A., and Weber, J. (2005). The effects of accelerated revenue recognition on earnings informativeness: Evidence from SEC Staff Accounting Bulletin No. 101. *The Accounting Review*, 80(2), 373-401.

Baker, T., Collins, D. & Reitenga, A. (2003). Stock option compensation and earnings management incentives. *Journal of Accounting, Auditing and Finance,* 18(4), 557-582.

Baiman, S. (1982). Agency research in managerial accounting: A survey. *Journal of Accounting Literature,* 154-213.

Ball, R. & Shivakumar, L. (2006). The role of accruals in aymmetrically timely gain and loss recognition. *Journal of Accounting Research*, 44(2), 207-242.

Barth, M., Elliott, J. & Finn, M. (1999). Market rewards associated with patterns of increasing earnings. *Journal of Accounting Research,* 37(2), 387-413.

Bartov, E., Givoly, D. & Hayn, C. (2002). The rewards to meeting or beating earnings expectations. *Journal of Accounting and Economics*, 33, 173-204.

Bartov, E. & Mohanram, P. (2004). Private information, earnings manipulations, and executive stock-option exercises. *The Accounting Review,* 79(4), 889-920.

Beaver, W. H. (1998). *Financial Reporting: An Accounting Revolution* (3rd ed.). Prentice Hall: Upper Saddle River, NJ.

Beaver, W. H., & McNichols, M. (1998). The characteristics and valuation of loss reserves of property casualty insurers. *Review of Accounting Studies,* 3(1-2), 73-95.

Bergstresser, D. & Philippon, T. (2006). CEO incentives and earnings management. *Journal of Financial Economics,* (80), 511-529.

Boone, J. & Raman, K. (2003). Principles- vs. rules-based standards: Does accounting discretion increase the quality of reported earnings? *Working paper* (Mississippi State University, Starkville, MS).

Burgstahler, D. & Dichev, I. (1997). Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics*, 24, 99-126.

Cahan, S., Chavis, B. & Elmendorf, R. (1997). Earnings management of chemical firms in response to political costs from environmental legislation. *Journal of Accounting, Auditing and Finance,* 12(Winter), 37-65.

Coase, R. (1937). The nature of the firm. *Economica*, 4(16): 386-405.

Cocheo, S. (2002, April). Pooling's demise is not mourned. *ABA Banking Journal*, 7-10.

Davis, J. (2002, February). Goodwill shunting: Do new rules take tech M&A out of the 'pool' and into the fire? *ABA Journal*, 55.

DeAngelo, L. (1986). Accounting numbers as market valuation substitutes: A study of management buyouts of public stockholders. *The Accounting Review*, 61, 400-420.

DeAngelo, H., DeAngelo, L. & Skinner, D. (1994). Accounting choices of troubled companies. *Journal of Accounting and Economics*, 17, 113-143.

DeAngelo, H., DeAngelo, L. & Skinner, D. (1996). Reversal of fortune: dividend signaling and the disappearance of sustained earnings growth. *Journal of Financial Economics*, 40, 341-371.

Dechow, P. & Skinner, D. (2000). Earnings management: Reconciling the views of accounting academics, practitioners, and regulators. *Accounting Horizons*, 14(June), 235-250.

Dechow, P. & Sloan, R. (1991). Executive incentives and the horizon problem: An empirical investigation. *Journal of Accounting and Economics*, 14, 51-89.

Dechow, P., Sloan, R. & Sweeney, A. (1995). Detecting earnings management. *The Accounting Review*, 70(2), 193-225.

DeFond, M. & Jiambalvo, J. (1994). Debt covenant effects and the manipulation of accruals. *Journal of Accounting and Economics*, 17, 145-176.

Degeorge, F., Patel, J. & Zeckhauser, R. (1999). Earnings management to exceed thresholds. *Journal of Business*, 72(1), 1-33.

Durtschi, C. & Easton, P. (2005). Earnings management? The shapes of the frequency distributions of earnings metrics are not evidence ipso facto. *Journal of Accounting Research*, 43(September), 557-592.

Dye, R. (1988). Earnings management in an overlapping generations model. *Journal of Accounting Research*, 26(2), 195-235.

Elliott, J. & Hanna, D. (1996). Repeated accounting write-offs and the information content of earnings. *Journal of Accounting Research*, (Supplement), 135-155.

Elliott, J. & Shaw, W. (1988). Write-Offs as accounting procedures to manage perceptions. *Journal of Accounting Research*, 26 (Supplement), 91-119.

Fama, E. (1980). Agency problems and the theory of the firm. *Journal of Political Economy*, (April), 288-307.

FASB. (1997). Statement of Financial Accounting Standards No. 131. *Disclosures about Segments of an Enterprise and Related Information*. Norwalk, CT: Financial Accounting Standards Board.

FASB. (2001). Statement of Financial Accounting Standards No. 141. *Business Combinations*. Norwalk, CT: Financial Accounting Standards Board.

FASB. (2001). Statement of Financial Accounting Standards No. 142. *Goodwill and Other Intangible Assets*. Norwalk, CT: Financial Accounting Standards Board.

FASB. (2007). Statement of Financial Accounting Concepts No. 2. *Qualitative Characteristics of Accounting Information*. Norwalk, CT: Financial Accounting Standards Board.

Francis, J., Hanna, D. & Vincent, L. (1996). Causes and effects of discretionary asset write-offs. *Journal of Accounting Research*, 34(Supplement), 117-134.

Fudenberg, D. & Tirole, J. (1995). A theory of income and dividend smoothing based on incumbency rents. *Journal of Political Economy*, 103(1), 75-93.

Gaver, J. (2003). Discussion – Stock option compensation and earnings management incentives. *Journal of Accounting, Auditing and Finance*, 18(4), 583-592.

Fink, R. (2006, September). *CFO Magazine*, 22 (10), 54-62.

Giroux, G. (2004). *Detecting Earnings Management*. John Wiley & Sons: Hoboken, New Jersey.

Gomez-Mejia, L. & Wiseman, R. (2007). Does agency theory have universal relevance? A reply to Lubatkin, Lane, Collin, and Very. *Journal of Organizational Behaviour*, 28, 81-88.

Graham, J., Harvey, C. & Rajgopal, S. (2005). The economic implications of corporate financial reporting. *Journal of Accounting and Economics*, 40(3), 3-73.

Greene, W. (2003). *Econometric Analysis* (5th ed.). New Jersey: Prentice Hall.

Grossman, S. & Hart, O. (1983). An analysis of the principal-agent problem. *Econometrica*, 51(1), 7-46.

Guidry, F., Leone, A. & Rock, S. (1999). Earnings-based bonus plans and earnings management by business unit managers. *Journal of Accounting and Economics*, 26, 113-142.

Hayn, C. 1995. The information content of losses. *Journal of Accounting and Economics*, 20, 125-153.

Hayn, C. & Hughes, P. (2006). Leading indicators of goodwill impairment. *Journal of Accounting, Auditing & Finance*, 21(3), 223-265.

Healy, P. (1985). The effect of bonus schemes on accounting decisions. *Journal of Accounting & Economics*, 7, 85-107.

Healy, P. & Palepu, K. (1990). Effectiveness of accounting-based dividend covenants. *Journal of Accounting and Economics*, 12, 97-124.

Healy, P. & Wahlen, J. (1999). A review of the earnings management literature and its implications for standard setting. *Accounting Horizons*, (13), 365-383.

Heflin, F., Kwon, S. & Wild, J. (2002). Accounting choices: Variation in managerial opportunism. *Journal of Business Finance & Accounting*, 29(7/8), 1047-1078.

Henry, D. (2001, October 15). Putting on a grim face. *Business Week*, (3753), 46-47.

Hepburn, B. (2002, November/December). A necessary evil? *Marketing Management*, 11, 34-38.

Herz, R., Iannaconi, T., Maines, L., Palepu, K., Ryan, S., Schipper, K., Schrand, C., Skinner, D., & Vincent, L. (2001). *Accounting Horizons*, (15), 161-170.

Higgins, J. (2002, January 14). AOL: Goodwill punting: AOL will be writing down much of the value of the Time Warner assets. *Broadcasting & Cable*, 7.

Holthausen, R., Larcker, D. & Sloan, R. (1995). Annual bonus schemes and the manipulation of earnings. *Journal of Accounting and Economics*, 19(1), 29-74.

Jensen, M. & Meckling, W. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.

Jones, J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research*, 29, 193-228.

Jordan, C. & Clark, S. (2004). Big bath earnings management: The case of goodwill impairment under SFAS No. 142. *Journal of Applied Business Research*, 20(2), 63-70.

Kahneman, D. & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 263-291.

Kennedy, P. (1998). *A Guide to Econometrics* (4th ed.). Cambridge, Massachusetts: MIT Press.

Kieso, D., Weygandt, J. & Warfield, T. (2007). *Intermediate Accounting* (12th ed.). John Wiley & Sons: Hoboken, New Jersey.

Korman, R. (2002, February 4). Write-offs under rule change could hurt some companies. *Engineering News*, 248(4), 13.

Lambert, R. (1984). Income smoothing as rational equilibrium behavior. *The Accounting Review*, 59(4), 604-618.

Lander, G. & Reinstein, A. (2003). Models to measure goodwill impairment. *International Advances in Economic Research*, 9(3), 227-232.

Marquardt, C. & Wiedman, C. (2004). How are earnings managed? An examination of specific accruals. *Contemporary Accounting Research*, 21(2), 461-491.

McNichols, M. (2000). Research design issues in earnings management studies. *Journal of Accounting & Public Policy*, 19(4/5), 313-345.

Navissi, F. (1999). Earnings management under price regulation. *Contemporary Accounting Research*, 16 (2), 281-304.

Ojo, B. (2002, January 21). Electronics lead reform of financial reporting. *Electronic Buyers News,* 1-2.

Paradigm shifts: Twenty changes that rocked your world. (2005, September). *CFO Magazine*, 36-54.

Patrick, T. (2005, January). Accounting for IPR&D – a work still in progress. *Accounting Today*, 12, 23.

Petroni, K. (1992). Optimistic reporting in the property-casualty insurance industry. *Journal of Accounting and Economics*, 15(4), 485-508.

Pourciau, S. (1993). Earnings management and nonroutine executive changes. *Journal of Accounting and Economics*, 16, 317-336.

Reason, T. (2003, July). Goodwill to all pieces. *CFO Magazine*, 31-32.

Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics*, 42(3), 335-370.

Schipper, K. (1989). Commentary on earnings management. *Accounting Horizons*, 3(4), 91-102.

Schipper, K. & Vincent, L. (2003). Earnings quality. *Accounting Horizons*, 17(Supplement), 97-110.

Sevin, S. & Schroeder, R. (2005). Earnings management: evidence from SFAS No. 142 reporting. *Managerial Auditing Journal*, 20(1), 47-54.

Strong, J. & Meyer, J. (1987). Asset writedowns: Managerial incentives and security returns. *Journal of Finance*, 42(July), 643-661.

Subramayam, K. (1996). The pricing of discretionary accruals. *Journal of Accounting and Economics*, (22), 249-281.

Sweeney, A. (1994). Debt-covenant violations and managers' accounting responses. *Journal of Accounting and Economics*, 17(May), 281-308.

Tobin, J. (1958). Estimation of relationships for limited dependent variables. *Econometrica*, (26), 24-36.

Walsh, P., Craig, R., & Clark, F. (1991). 'Big bath accounting' using extraordinary items adjustments: Australian empirical evidence. *Journal of Business Finance and Accounting*, 18(2), 173-189.

Watts, R. (2003) (a). Conservatism in accounting. Part I: Explanations and implications. *Accounting Horizons*, 17(3), 207-221.

Watts, R. (2003) (b). Conservatism in accounting. Part II: Evidence and research opportunities. *Accounting Horizons*, 17(4), 287-301.

Watts, R. & Zimmerman, J. (1978). Towards a positive theory of the determination of accounting standards. *The Accounting Review*, 53(January), 112-134.

Zucca, L. & Campbell, D. (1992). A closer look at discretionary writedowns of impaired assets. *Accounting Horizons*, (September), 30-41.