CORPORATE BOND REPURCHASES AND EARNINGS MANAGEMENT

by

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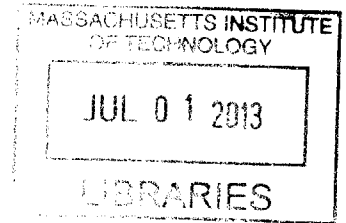FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

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Abstract

This paper investigates whether earnings management incentives are associated with gains/losses recognized when firms repurchase bonds. The research question is motivated by the inclusion of these gains/losses in firms' income, which creates the potential to use them to manage earnings. Using a sample of 778 bond repurchases from 1994 to 2011, I find that firms record larger extinguishment gains when earnings are (i) short of analysts' forecasts, or (ii) low relative to the prior year's earnings. Furthermore, the effect is more pronounced after the introduction of SFAS 145 which moved gains/losses from the extinguishment of debt from extraordinary items to operating income. In addition, the result is weaker after SFAS 159 which allowed firms to report liabilities at fair value, thus causing smaller gains to be recorded upon repurchase of debt. This study contributes to the literature on earnings management by providing evidence of real earnings management through bond repurchases and to the literature on bond buybacks by identifying accounting incentives as a determinant of the size of extinguishment gains.

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Umuntu ngumuntu ngabantu – A person is a person because of people.

Ndebele Proverb

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1. Introduction

In this paper, I examine earnings management incentives in firms that repurchase debt. Corporations frequently repurchase public debt and stock, and record these transactions in their financial statements. While there is a well-developed literature on managerial incentives associated with equity repurchases (Bens, Nagar, Skinner and Wong 2003; Vafeas, Vlittis, Katranis and Ockree 2003; Hribar, Jenkins and Johnson 2006), relatively few studies focus on debt repurchases.[1] Public debt repurchases, however, have become prevalent in the last few years. For instance in 2009, the face value of US public corporate debt was 7.0 trillion dollars.[2] During this period, more than 200 firms repurchased approximately 3% of total outstanding corporate debt for a total of approximately $215 billion.[3,4] My study contributes to this literature by investigating whether and to what extent gains/losses recorded upon debt extinguishment incentives are sensitive to earnings management incentives.[5]

My research question is motivated by several accounting and economic features of debt repurchases that provide an interesting context to study earnings management. First, a corporation can record extinguishment gains or losses on the repurchase of debt. Stock repurchases, in contrast do not involve accounting gains and losses as they are transactions between a company and its owners.[6] Second, following the introduction of SFAS 145 in 2002, extinguishment gains are included in income from continuing operations, whereas before they were classified as extraordinary items. The shift of the item into income from continued

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[1] One exception is a study by Levy and Shalev (2011) which finds that macro-economic conditions may affect a manager's repurchase decision. I discuss their paper in greater detail below.
[2] http://www.sifma.org/research/statistics.aspx (Last accessed 05/12/2013).
[3] By contrast, companies announced plans for $133 billion in share repurchases during 2009.
[4] This data is from the Mergent Fixed Income Securities Database (FISD) and represents open market and tender repurchases only.
[5] Throughout the paper, I use the terms "repurchase" and "extinguishment" interchangeably to refer to the early retirement of debt via buybacks.
[6] The repurchase of shares is recorded as a debit (credit) to treasury stock (cash).

operations likely heightened incentives to manage earnings using extinguishment gains. Thus, while previous studies on earnings per share management have focused on equity repurchases (e.g., Bens et al., 2003; Hribar et al., 2006), the characteristics of bond repurchases outlined here distinguish the debt market from the equity market, and make bond repurchases an interesting empirical setting to investigate opportunistic behavior by managers.

An anecdotal example of the possibility to manage earnings using extinguishment gains is provided in a recent *ProSales Magazine* article which describes how the repurchase of debt enabled Ply Gem Holdings Inc. to avoid a loss in the first quarter of 2010: "A $98.2 million gain from the extinguishment of debt powered Ply Gem Holdings Inc. to swing to a $54.1 million net profit in the first quarter ended April 3 from a net loss of $55.5 million in the year-earlier period, the company announced today."[7] In my empirical analyses I examine whether there is systematic evidence of earnings management using extinguishment gains/losses.

I use a sample of 778 firms that repurchased debt from 1994 to 2011 to examine the significance of earnings management incentives once the decision to repurchase debt has been made. I examine the sensitivity of recorded extinguishment gains to earnings management incentives, specifically when the firm risks missing earnings targets. My tests are based in part on empirical evidence that managers rely on accounting actions and real transactions to manipulate earnings (Burgstahler and Dichev 1997; Roychowdhury 2006; Dechow, Myers and Shakespeare 2010). I use two measures of earnings targets in my empirical analyses. First, I use the last consensus analyst forecast prior to the debt repurchase. Studies such as Degeorge, Patel and Zeckhauser (1999) and Graham, Harvey and Rajgopal (2005) find that the analyst consensus estimate is one of the firm's most important benchmarks.

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[7] http://www.prosalesmagazine.com/net-profit/debt-restructuring-enables-ply-gem-to-swing-to-1q-net-profit.aspx
(Last accessed 03/20/2013).

I also use the prior year's earnings as a target, because prior literature finds that firms are rewarded for reporting positive earnings changes (Barth et al. 1999; Schrand and Walther 2000). Importantly, these proxies identify firms that are just short of earnings targets, as presumably they are most likely to engage in upward earnings management in order to meet these objectives. I compute earnings absent manipulation as the earnings that the firm would have reported if the repurchase of debt and subsequent inclusion of extinguishment gains/losses did not occur. In addition, I control for other factors that could explain extinguishment gains such as leverage, size, credit risk, firm performance prior to repurchase, and macro-level changes in the debt market.

Consistent with my prediction, recorded extinguishment gains are sensitive to earnings management incentives. Specifically, higher extinguishment gains are recorded when a firm: (i) is at risk of not meeting or beating analysts' forecasts, or (ii) has low earnings in the current period relative to the prior year. In terms economic significance, I find that the inclusion of extinguishment gains, whose average is 2.3% of net income, results in ~60% of the observations in my sample meeting/beating these earnings benchmarks, suggesting that extinguishment gains affect reported earnings. Majority of these observations are clustered in the interval to the immediate right of the benchmarks, suggesting that the extinguishment gains helped these managers barely meet/beat their targets. Thus, the results suggest that managers are more likely to repurchase debt at a discount and record income-increasing extinguishment gains when they are short of earnings benchmarks.

One concern with bond repurchases is that it is inherently difficult to identify whether the magnitude of recorded extinguishment gains is driven by earnings management concerns or economic fundamentals. Specifically, when a firm's performance declines, debt becomes

cheaper to repurchase and extinguishment gains are larger. Consequently, managers may be 'buying low' rather than managing earnings. In addition, managers may possess information to suggest that their bonds are undervalued, making repurchase optimal. I attempt to mitigate this concern by examining the impact of SFAS 145 and SFAS 159, two recent regulatory changes that affect accounting for debt repurchases. If economic fundamentals drive the decision to repurchase bonds and record extinguishment gains, changes in accounting standards should not affect the observed association.

Specifically, SFAS 145 (ASC Topic 470), results in a shift of the location of gains/losses on the income statement from extraordinary items to an "above-the-line" item. To the extent that firms care about higher "above-the-line" income (Bradshaw and Sloan 2002; Beatty and Weber 2006; McVay 2006), post-SFAS 145 I predict and find a more pronounced effect of earnings management incentives on extinguishment gains. The second accounting change I examine, SFAS 159 (ASC Topic 825), provides firms with the option to record liabilities at fair value, leading to a shift in the timing of the recognition of gains/losses. As a result, firms that elect to record debt at fair value lose discretion in the choice of period to record extinguishment gains as they are required to recognize gains/losses through fair-value adjustments regardless of whether a repurchase happens on not. Thus, post-SFAS 159, I predict and find that earnings management incentives have a weaker effect on recorded extinguishment gains. The results of these tests are consistent with an earnings management explanations rather than economic fundamentals ("buying low") driving the results.

Finally, I also investigate cross-sectional (as opposed to the two time-series tests above) variation in the effect of earnings management incentives on the magnitude of extinguishment gains. This analysis is motivated by the fact that managers are more inclined to engage in

manipulation when the perceived costs are lower. I focus on a firm's tax attributes because the extinguishment of debt has tax implications for firms since a repurchase can generate taxable cancellation of debt (COD) income. To the extent that a firm has net operating losses (NOLs), these losses may be used to offset COD income and reduce taxes due. I find that earnings management incentives have a stronger effect on the decision to repurchase for firms with NOLs. This analysis sheds light on the extent to which offsetting costs can dampen earnings management incentives.

My study contributes to two main strands of literature. First, I contribute to recent literature on debt repurchases, which has examined factors that influence the repurchase decision and investors' reaction to news about repurchases. My study is the first to directly examine whether earnings management incentives influence extinguishment gains/losses from debt repurchases. A recent paper by Levy and Shalev (2011) examines whether the method of repurchase affects the magnitude of extinguishment gains. Other prior studies examined determinants of bond repurchases such as: debt overhang and the reduction of leverage and interest expense (Julio 2007; Kruse, Nohel and Todd 2009; Levy and Shalev 2011). My study shows that earnings management incentives affect the magnitude of recorded extinguishment gains when a firm repurchases debt. In doing so, I shed light on managers' use of the flexibility in accounting for debt repurchases to manage earnings. I also examine the role of accounting standards in strengthening and/or weakening earnings management incentives. To my knowledge, none of the debt repurchase studies have investigated these questions.

Second, this paper builds on prior studies on real earnings management (Roychowdhury 2006; Dechow, Myers and Shakespeare 2010). I contribute to this body of work by examining bond repurchases which are significant but have received very little attention to date. I present

evidence that gains from the repurchase of debt are sensitive to earnings management incentives. A related study by Hand, Hughes and Sefcik (1990) also finds that firms undertake real transactions, at least in part for accounting benefits. However, the unique contribution of my paper is the direct examination of earnings management incentives in the market for bond repurchases and the investigation of time-series and cross-sectional factors that influence the use of extinguishment gains to manage earnings.

The remainder of the paper is organized as follows. In the next section I provide institutional details and a summary of prior literature. Section 3 develops my hypotheses on the incentives to engage in earnings management. In Section 4 I describe my sample selection procedures and discuss the research design. I present the main results, robustness checks, and supplementary analyses in Section 5. Finally in Section 6, I conclude and provide suggestions for future bond repurchase research.

2. Background and Prior Research

2.1 Institutional Details on Bond Repurchases and Relevant Accounting Rules

In this section, I provide some background and institutional details on bond repurchases. A bond buyback is the repurchase by a debtor of its own publicly traded debt. In a sample of bond repurchases conducted from 1989 to 1996, Kruse, Nohel and Todd (2009) document that firms commonly identify reduction of debt overhang, financial flexibility, debt restructuring, merger-related reasons, and interest expense reduction as reasons to repurchase debt. Bond repurchase transactions are carried out in the secondary bond market, which is highly fragmented, illiquid and hosts fewer and much more sophisticated participants in comparison to the stock market (Levy and Shalev 2011).

The accounting for debt repurchases is important for my study because I examine the possibility that extinguishment gains/losses from the repurchase of debt are influenced by earnings management incentives. Under U.S Generally Accepted Accounting Principles (GAAP), the historical-cost principle requires bonds to be carried on issuers' books at amortized historical cost using the effective yield method. If debt is not retired before maturity, the market value is equal to the book value at maturity date because the principal is due at maturity and is not discounted for time or risk. However, if a firm retires its debt before maturity, book value and market value are typically not the same. This leads to the generation of an accounting gain/loss upon extinguishment. A detailed example demonstrating how extinguishment of debt can lead to a gain is included in Appendix A.

Current accounting rules governing gains/losses recorded on the extinguishment of debt are promulgated in SFAS 145 (ASC Topic 470). Previously, under SFAS 4, extinguishment gains and losses were reported as extraordinary items on the income statement. However, the introduction of SFAS 145 in 2002 requires the classification of these gains as other income, which is an "above-the-line" item. This item is not included in operating income but counts towards income from continuing operations. The Financial Accounting Standards Board (FASB) made this change because in order to be categorized as an extraordinary item, the event has to be both infrequent and unusual; however, as mentioned earlier, debt repurchases have increased in frequency and are no longer an unusual component of a firm's operations.[8] In summary, this new rule results in a shift of the location of gains/losses on the income statement, but does not affect cash flows.

Another accounting change that is relevant to my study is SFAS 159 (ASC Topic 825), which became effective after 2007. This new rule expanded the option to fair-value for financial

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[8] http://www.fasb.org/pdf/fas145.pdf (Last accessed 03/20/2013).

instruments beyond derivative liabilities. Resulting gains/losses from changes in fair value are recognized in income as they occur. In effect, this regulatory change causes a shift in the timing of the recognition of gains/losses, but the stream of cash flows associated with the debt remains the same. Therefore, after the introduction of SFAS 159, firms that elect to record debt at fair-value record a smaller magnitude of gains/losses on the income statement at the time of extinguishment as some of these gains/losses have already been recognized in prior periods.

Finally, the extinguishment of debt also has tax implications for firms that choose to engage in bond buybacks. Gains on extinguishment of debt only occur when the debt is repurchased at a discount. Under Section 108 of the Internal Revenue Code (IRC), a debtor is required to recognize cancellation of debt (COD) income when the issuer or related party purchases the debt at a discount. Unless an exception applies, this income must be recognized at the time of the repurchase. COD income is typically included in taxable income unless the debt repurchase occurs pursuant to a bankruptcy plan of reorganization (Section 108). Thus, to the extent a firm has net operating losses (NOLs), these tax transactions may be used to offset COD income and reduce or completely eliminate taxes due on the repurchase transaction.[9]

2.2 Existing Literature on Bond Repurchases

Prior research has examined several aspects of bond repurchase transactions such as: the determinants of repurchases, market reaction to repurchase announcements, and the derivation of the repurchase price. Julio (2007) finds an increase in investment levels and firm efficiency for repurchasing firms relative to a control sample. He interprets this as evidence that a debt repurchase is consistent with the intention of reducing debt overhang. Levy and Shalev (2011)

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[9] During the 2008 financial crisis an exception was made pertaining to the recognition of COD income as taxable income. Specifically, following the American Recovery and Reinvestment Act of 2009, a firm can elect to defer taxes on COD income over a five-year period for repurchases occurring after December 31, 2008 and before January 1, 2011.

suggest that macro-economic conditions may affect the decision to conduct a buyback. They analyze the firm's choice of repurchase method and find that during turbulent periods in the capital markets, firms engage in increased insider stock trading and they are more likely to buy back debt in the open market. They also test whether the choice of repurchase method affects the amount of recorded extinguishment gains. Chatterjee, Dhillon and Ramirez (1995) and Kruse, Nohel and Todd (2009) find mixed results for market reactions to debt repurchase announcements, while Mao and Tserlukevich (2012) formally develop a framework that generates direct testable implications on bond repurchase prices. I extend this literature by broadening our understanding of the factors that affect gains/losses recorded when firms repurchase debt.

Finally, a study by Hand, Hughes and Sefcik (1990) examines market reaction to the announcement of in-substance defeasances, which are transactions where the firm sets aside assets to cover debt repayment. They also find that these firms display smoother earnings, suggesting that firms engage in these transactions, in part for accounting benefits. However, the unique contribution of my paper is the direct examination of earnings management incentives in the market for bond repurchases and the investigation of time-series and cross-sectional factors that influence the use of extinguishment gains to manage earnings. In sum, earlier literature on bond repurchases has generally focused on the economic incentives to engage in these transactions, whereas the innovation in my study is that it focuses on accounting incentives.

3. Hypotheses Development

3.1 Earnings Manipulation through Extinguishment Gains from Debt Repurchases

Prior literature documents that managers manipulate earnings through a combination of accounting actions and real activities. For example, a survey by Graham, Harvey and Rajgopal

(2005) reports that financial executives acknowledge they would be willing to take actions such as postponing taking an accounting charge so as to meet earnings benchmarks. Dechow and Shakespeare (2009) find that managers time the reporting of securitization gains to maximize financial statement window-dressing. Finally, Dechow, Myers and Shakespeare (2010) investigate whether securitization gains are used to manage earnings and find evidence consistent with managers reporting larger securitization gains when pre-securitization are low and below the prior year's level. Taken together, the results from these studies lend support to the prevalence of earnings management via accounting actions from real activities. By focusing on debt extinguishment gains, my study provides a new, natural setting in which to corroborate and extend prior evidence.

The accounting and economic features of bond repurchases described above make the use of extinguishment gains as an earnings management tool likely. Specifically, early extinguishment of debt results in an accounting gain or loss which is recorded in a firm's income statement- providing a mechanism by which a firm can report income-increasing gains when the firm risks missing earnings benchmarks. Therefore, I predict that firms report larger extinguishment gains when pre-repurchase earnings fall short of earnings benchmarks. My first hypothesis, stated in alternative form is:

> *H1. Extinguishment gains are higher when there is a risk of missing an earnings benchmark.*

3.2 Time-series Variation in Extinguishment Gains Due to Changes in Accounting Treatment

One concern with the debt repurchase setting used in this study is that it is inherently difficult to identify whether the size of recorded extinguishment is influenced by earnings management incentives or economic fundamentals. To mitigate concerns that economic

fundamentals and not earnings management are behind my results, I conduct interrupted time-series tests around changes in accounting standards. The idea is that if economic fundamentals are behind the decision to record higher extinguishment gains, there should be no change in the association between earnings manipulation incentives and the gains/losses recorded upon extinguishment when the new rules are introduced, as these rules only affect the accounting for gains from debt repurchases and not the firm fundamentals. Conversely, if earnings management concerns dominate, one would expect to observe a stronger association between earnings manipulation incentives and recorded gains/losses following the introduction of the new regulations because earnings management goals are more (less) easily achieved using extinguishment gains from debt repurchases after SFAS 145 (SFAS 159).

The first accounting rule, SFAS 145, results in a shift of the location of gains on the income statement from extraordinary items to an "above-the-line" item. There is evidence that the location of an item on financial statements is economically important. For example, Beatty and Weber (2006) find that the decision to record goodwill impairments above-the-line versus below-the-line is affected by factors such as debt contracting, equity market and compensation incentives. In addition, some studies find that the location of a line item on financial statements affects valuation, and managers opportunistically shift items on the income statement to manage earnings (Bradshaw and Sloan 2002; McVay 2006). Thus, following the passage of SFAS 145, gains from debt repurchases become a more favorable earnings management tool. Consequently, if extinguishment gains are used to meet earnings benchmarks, I expect a stronger association between extinguishment gains and the risk of missing an earnings benchmark after the introduction of SFAS 145. My second hypothesis, stated in alternate form is:

> *H2. The positive association between extinguishment gains and the risk of missing an earnings benchmark is stronger after the introduction of SFAS 145.*

Evidence consistent with H2 lends credence to the notion that earnings management incentives influence the decision to record income-increasing gains after a debt repurchase.

I also investigate the impact of SFAS 159 (ASC Topic 825), which affects the timing of the recognition of gains/losses. Following the introduction of this new rule, firms are required to report unrealized gains/losses on items for which the fair value option has been elected in earnings on specified reporting dates. Thus, the partial recognition of some unrealized gains/losses in prior periods makes it more difficult for firms which elect to record bonds at fair value to meet earnings benchmarks using extinguishment gains from a debt repurchase. Therefore, after the introduction of SFAS 159, one would expect a weaker association between extinguishment gains and the risk of missing an earnings benchmark. My third hypothesis is:

> *H3. The positive association between extinguishment gains and the risk of missing an earnings benchmark is weaker after the introduction of SFAS 159.*

A primary challenge with this analysis is that under SFAS 159, firms opt in to fair-value by security and not by firm. Consequently, in my empirical tests I am unable to determine which bond issues are recorded debt at fair value. I discuss the consequences of this limitation in the research design section.

3.3 Cross-sectional Variation in Extinguishment Gains - Tax Losses

Next, I examine cross-sectional variation in the use of extinguishment gains to manage earnings. This analysis is motivated by the fact that the extent of earnings manipulation and the resulting gains/losses recorded on firms' financial statements vary with any constraints managers have to undertake such activities. The benefits of meeting an earnings benchmark via extinguishment gains may be partially offset by any costs the manager has to incur from choosing to employ this earnings manipulation mechanism. For example, sacrificing a firm's

much needed cash to repurchase debt at a discount so as to record income-increasing extinguishment gains could result in future long-term costs if the firm is unable meet its' operating, investment and/or financing obligations. Such tradeoffs suggest that the presence of offsetting costs may discourage managers from using extinguishment gains to meet earnings benchmarks.

My cross-sectional test, which employs a firm's tax attributes (NOLs) as a measure of costs that may offset the benefits of earnings management, sheds insights on some characteristics of firms that are likely to manipulate earnings using extinguishment gains. In addition to income statement effects, extinguishment of debt also has tax implications for firms that choose to engage in bond buybacks. Although repurchases conducted at a price below the book value of debt have the benefit of generating income-increasing extinguishment gains for book purposes, they generate COD income which is taxable. Therefore, firms with COD income and no NOLs may find that the benefits of recording extinguishment gains are partially offset by the taxes imposed on COD income, resulting in reluctance by managers to repurchase debt. However, this constraint is less likely to be applicable to firms with prior net operating losses (NOLs) as these losses can be used to offset COD income, resulting in reduced tax payments. Therefore, I predict:

> *H4. The positive association between extinguishment gains and the risk of missing an earnings benchmark is stronger for firms with net operating losses (NOLs).*

A key caveat is that during the recent financial crisis an exception was made pertaining to the recognition of COD income as taxable income. Specifically, firms had the option to defer taxes on COD income. I discuss the implications of this election in the research design section.

4. Sample and Variable Construction

4.1 Sample Selection and Descriptive Statistics

I obtain information on bond repurchases from the Mergent Fixed Income Securities Database (FISD). Mergent FISD contains details on issuance, changes and the reasons for changes in series of corporate bonds. The database also includes information on bond characteristics, changes in traded series of bonds due to maturity, refunding, IPO clawbacks, exercise of call and put options, debt-equity exchanges and repurchases via tender offers or open market programs. My sample only includes cash repurchases of publicly traded bonds and excludes debt retirements by calls, puts, sinking funds, conversions, refunding or refinancing. As Table 1 Panel A shows, my dataset contains 1,974 observations of bond repurchases from 1994 to 2011. I sum up the dollar amount of repurchases for each firm within each year and end up with a sample of 1,261 firm-year observations.[10,11]

I then match the bond repurchase data with the Compustat industrial annual file for financial statement data, the Institutional Brokers Estimate System (I/B/E/S) database for analysts' forecasts, and the Federal Reserve of St Louis (FRED) website for credit spreads. This procedure yields a sample of 668 observations. I then hand collect additional information on extinguishment gains/losses prior to the introduction of SFAS 145 as pre-SFAS 145 Compustat lumps these gains/losses together with other extraordinary items. Specifically, I hand-collect data from 1994-2002. I use the Security Exchange Commission's (SEC) Electronic Data Gathering, Analysis and Retrieval (EDGAR) to download 10-Ks and read through the notes to find

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[10] I focus on cash repurchases by eliminating buybacks that are part of a debt exchange or a refunding program. As per FASB's guidance in Emerging Issues Task Force (EITF) 96-19, an exchange of debt instruments can only be accounted for as a debt extinguishment using the provisions of SFAS 140 if the instruments exchanged have substantially different terms. However, in my setting I have no way to determine whether the exchanges meet these criteria hence the decision to exclude such buybacks.

[11] The total amount of repurchases outlined in the introduction includes transactions that were paid for by the exchange of another security e.g. stock or debt, and the pledge of unbounded property in addition to cash, which my analyses focus on.

information on the extinguishment of debt. I collect data starting in 1994 as this is the first year the SEC instituted electronic filing and dissemination on form 10-Ks. This effort yields an additional 110 firm-years for a total of 778 observations.

4.2 Research Design and Variable Construction

4.2.1 Tests of H1: Extinguishment Gains and Risk of Missing Earnings Benchmarks

My first hypothesis, H1, predicts a positive relation between the size of extinguishment gains and the risk of missing an earnings benchmark. Following the methodology in prior studies on earnings management through gains from real activities (Dechow and Shakespeare 2009; Dechow, Myers and Shakespeare 2010), I construct a proxy to capture earnings manipulation. I compute *Gain*, my hypothesized amount of earnings management, as the gains from the extinguishment of debt scaled by total assets from the prior year.

Next, I construct measures of the incentives to manipulate earnings. I rely on prior evidence that managers have various incentives to meet/beat earnings benchmarks. Examples of these targets include: analysts' forecasts, high earnings, and loss avoidance (Hayn 1995; Burgstahler and Dichev 1997; Degeorge et al. 1999. Earnings management (*EM*) captures these two targets: *Meet/Beat* is computed as the actual pre-extinguishment earnings per share (EPS) minus the latest analysts' consensus EPS forecast prior to the repurchase scaled by common stock outstanding and multiplied by -, and *Δ Earnings*, is the difference in pre-extinguishment earnings from the current to the previous year multiplied by -1.

An important assumption underlying my *Meet/Beat* earnings target measure is that analysts consider extinguishment gains as part of earnings.[12] Yet, it is possible that analysts exclude extinguishment gains in their determination of whether firms meet or beat their expectations, especially prior to the promulgation of SFAS 145 in 2002 when extinguishment gains were part of extraordinary items which are typically left out of analysts' forecasts. However, there is anecdotal evidence consistent with my assumption. For example, in 2000, the *Wall Street Journal* ran an article highlighting a debate that had ensued following Fannie Mae's inclusion of extinguishment gains in its earnings-per-share (EPS) calculations.[13] While the company noted that they had long included extinguishment gains as part of EPS calculations since retirement of debt was considered part of continuing operations, there were questions as to whether the inclusion of this gain fairly represented the quarterly results. When sought for comment, Charles L. Hill, First Call's director of research noted that the rules are not set in stone. In fact, the article states: "Unsure of how to record the results, First Call surveyed analysts; nine believed the results should include the gain from extinguishment, while two did not, although one of the two changed his mind after talking to Fannie Mae."

To test my first hypothesis, I estimate the following model of the association between extinguishment gains and earnings management targets:

$$Gain_{i,t} = \alpha + \beta_1 EM_{i,t} + \sum_j \beta_j Controls_j + \varepsilon_{i,t} \tag{1}$$

where

Gain   =   the dollar value of gains from the extinguishment of debt

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[12] Importantly, analysts' consideration of extinguishment gains as part of earnings does not require them to forecast the size of gain in their earnings estimates, as they may not be able to predict whether a firm will repurchase debt, and if so, at what price the transaction will be carried out.

[13] Source: "Fannie Mae Posts 15% Earnings Gain for the Quarter --- Solid Results Are Clouded By Questions Involving Methods of Accounting". The Wall Street Journal, July 14, 2000: A.2.

(Compustat 'dtep') scaled by total assets (Compustat 'at').

EM	=	two measures of earnings management incentives related to analysts' forecasts and earnings reported by the firm: *Meet/Beat,* and *Δ Earnings.*

Meet/Beat	=	-1*(actual pre-extinguishment earnings per share (EPS) minus the latest analysts' consensus EPS forecast prior to the repurchase. I use the last consensus analysts' forecast prior to the repurchase and exclude companies that change their fiscal year end during the year to avoid multiple entries for analysts' forecasts)/ common shares outstanding (Compustat 'csho').

Δ Earnings	=	-1*(difference in pre-extinguishment earnings from the current to the previous year, scaled by lagged total assets. Pre-SFAS 145, pre-extinguishment earnings are measured as the difference between net income after extraordinary items (Compustat 'ib' + 'xido') and the gain/loss from extinguishment (Compustat 'dtep'). Post SFAS-145, pre-extinguishment earnings are measured as the difference between net income before extraordinary items (Compustat 'ib') and the gain or loss from extinguishment (Compustat 'dtep')).[14]

and where *Controls* are:

Action size	=	ratio of the repurchase amount to the firm's total assets.

Spread	=	credit spread between BBB corporate rated bonds and the risk free rate.

Firm size	=	log of the market value of equity at the beginning of the year.

Leverage	=	book value of all liabilities scaled by total assets.

ROA	=	income before extraordinary items divided by total assets.

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[14] While the classification of an item as extraordinary does not change bottom-line numbers, an implicit assumption in the computation of this target is that extraordinary items, which are by definition "infrequent" and "unusual", are considered less valuable than income from continuing operations. In support of this conjecture, there is evidence that that the closer a line item is to sales, the less transitory it tends to be, and that investors appear to recognize this distinction and weight individual items accordingly (e.g. Lipe 1986; Fairfield et al. 1996; Bradshaw and Sloan 2002).

BTM	=	ratio of the book value of equity to the market value of equity.
Rating	=	the long-term issuer credit ratings compiled by Standard & Poor's and reported on Compustat (Compustat 'splticrm'). The ratings range from AAA (highest rating) to D (lowest rating—debt in payment default). These ratings reflect S&P's assessment of the creditworthiness of the obligor with respect to its senior debt obligations. In my analysis, I collapse the multiple ratings into seven categories (AAA, AA, A, BBB, BB, B, and CCC to D), with ratings below BBB being defined as speculative.

I expect β_1, the coefficient on *Meet/Beat* and *Δ Earnings*, to be positive.[15] Results consistent with this conjecture can be interpreted as evidence of managers' use of extinguishment gains to boost earnings when the firm is at risk of missing earnings targets. In keeping with prior literature (Levy and Shalev 2011), I control for various factors that can affect extinguishment gains. *Action Size* controls for the repurchase amount, *Spread* controls for the effect of macro-level fluctuations on the market value of debt, *Firm size* takes into account that larger firms tend to have more outstanding debt than smaller ones, making them more likely to repurchase debt and record gains, *Leverage* controls for the likelihood that highly levered firms are likely to repurchase debt and record gains, *ROA* controls for firm performance prior to repurchase, and *BTM* controls for a firm's growth opportunities, which could affect the need to adjust the existing capital structure through repurchasing debt. I also include a *Rating*, a control

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[15] As described earlier, the variable *Meet/Beat* is computed using the I/B/E/S consensus forecast. If analysts exclude all extraordinary items from their forecasts, then prior to the introduction of SFAS 145, I would not expect managers to attempt to manipulate earnings using extinguishment gains. The discussion in Arbabanell and Lehavy (2007) mentions that in general, I/B/E/S forecasts are compiled using proprietary procedures which exclude certain special items from GAAP earnings. However, the authors also note that it is not possible to determine which specific items are excluded. Further, in conversations with I/B/E/S officials, the authors find that specific items can be dealt with idiosyncratically in individual cases. Thus, there is the possibility that extinguishment gains could be included in analysts' forecasts prior to the introduction of SFAS 145.

for a borrower's creditworthiness. To the extent that credit risk affects the market value of debt, the magnitude of extinguishment gains increases with the difference between book and market value of debt. Finally, I also include firm and year fixed effects in the regression to control for firm and time variation.

4.2.2 Tests of H2 & H3: Effects of Accounting Rule Changes on Earnings Management Incentives

In order to test my predictions on the impact of accounting changes on the association between earnings targets and extinguishment gains, I augment Equation 1 to take into account the effect of regulatory changes that affect extinguishment gains as follows:

$$Gain_{i,t} = \alpha + \beta_1 EM_{i,t} + \beta_2 Post\,145 + \beta_3 EM * Post\,145 + \sum_j \beta_j\, Controls_j + \varepsilon_{i,t} \qquad (2)$$

$$Gain_{i,t} = \alpha + \beta_1 EM_{i,t} + \beta_2 Post\,145 + \beta_3 Post\,159 + \beta_4 EM * Post145 + \beta_5 Post145 * Post159 + \beta_6 EM *$$
$$Post159 + \beta_7 EM * Post\,145 * Post\,159 + \sum_j \beta_j\, Controls_j + \varepsilon_{i,t} \qquad (3)$$

Post 145 is a dummy variable equal to one if the bond repurchase was executed after the passage of SFAS 145 in 2002 and zero otherwise. In Equation 2, the coefficient of interest is β_3 on variable *EM * Post 145*. I expect the coefficient on this variable to be positive, suggesting that the introduction of SFAS 145, which mandates a shift in the classification of extinguishment gains/losses from extraordinary items to "above-the-line", strengthens the relation between earnings benchmarks and extinguishment gains.

Post 159 is a dummy variable equal to one if the bond repurchase was executed after the passage of SFAS 159 in 2007 and 0 otherwise. In Equation 3, the coefficient of interest is β_7 on variable *EM * Post 145* Post 159*. I expect the coefficient on this variable to be negative, suggesting that the introduction of SFAS 159, which gives firms the option to record liabilities at

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fair value, mutes the incentives to manage earnings via extinguishment gains. The attenuated relation between earnings benchmarks and extinguishment gains results from the recognition of some gains/losses in prior periods via fair-value adjustments, preventing managers from exercising discretion in determining the magnitude of extinguishment gains when debt is repurchased. I include both *Post 145* and *EM * Post 145* to account for the fact that SFAS 145 continues to apply even after the introduction of SFAS 159.[16] I also include firm fixed effects in these regressions.

4.2.3 Tests of H4: Cross-Sectional Variation of Earnings Management Incentives

Hypothesis 4 predicts cross-sectional variation in the use of extinguishment gains to manage earnings. To test H4, I augment Equations (1) with a proxy for earnings management costs, *NOLs*, and estimate the following regression:

$$Gain_{i,t} = \alpha + \beta_1 EM_{i,t} + \beta_2 NOLs + \beta_3 EM * NOLs + \Sigma_j \beta_j Controls + \varepsilon_{i,t} \qquad (4)$$

In estimating equation (4), I limit my analyses to the period after the introduction of SFAS 145. While this additional restriction results in the loss of some observations, the resulting empirical model is facile and does not have complex, interaction terms which may be difficult to explain.

NOLs is a dichotomous variable coded as one if the unused portion of net loss carry-forward (Compustat 'tlcf') is positive at the beginning of year t, and zero otherwise. In equation 4, the variable of interest is *EM * NOLs*. I expect the coefficient on this variable, β_3, to be positive. This estimate suggests greater flexibility in the use of extinguishment gains to meet

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[16] A primary challenge with this analysis is that under SFAS 159, firms opt in to fair-value by security and not by firm. Consequently, in my empirical tests I am unable to determine which repurchased bond issues are recorded at fair value. Importantly, the decision to include firms which do not elect to record debt at fair value leads to a bias against finding results as earnings management incentives for non-fair value firms should not be dampened following this regulatory change. I plan to strengthen this part of my analyses by hand-collecting information on the decision to fair value debt from firms' financial statements.

earnings benchmarks for firms with NOLs for the following reason: firms with COD income and no NOLs may find that the benefits of managing earnings via extinguishment gains are partially offset by the taxes imposed on COD income. However, this constraint is less likely to be applicable to firms with prior net operating losses (NOLs) as these losses can be used to offset COD income.

As noted earlier, following the passage of the American Recovery and Reinvestment Act firms had the option to defer tax payments on COD income. However, I am unable to determine which firms elected to defer taxes on their COD income. As a result, in my empirical analyses I do not control for this regulatory shift. However, the measurement error induced should bias against significant results because retention of firms that elected to defer taxes on COD income likely understates the extent to which offsetting costs weaken earnings management incentives; I classify firms with NOLs as facing lower costs of earnings management while this exception also provides firms without NOLs the flexibility to manage earnings as tax payments on COD income can be deferred.

5. Empirical Results

5.1 Summary Statistics

Figure 1 plots the number of repurchases over time. The graph which shows an increasing trend in debt repurchase activity over the years, from 1 repurchase in 1994 to 210 in 2010, demonstrates that these transactions have become increasingly frequent and their significance has increased. Table 1 reports descriptive statistics for my debt repurchase sample. Table 1 Panel B reports the distribution of my sample across 1-digit SIC industries. The number of repurchases ranges from 191 or 24.55% (financial, insurance and real estate firms) to 58 or 7.46% (agriculture, forestry, fishing and mining firms) of my sample. While the financial,

insurance and real estate firms seem to have the highest debt repurchase activity, overall repurchases seem to be distributed across a fairly wide range of industries and do not exhibit clustering. Finally, Table 1 Panel C shows that debt repurchases retire a significant proportion of the outstanding debt issue, ranging from 55% to 100%.

Table 2 Panel A presents descriptive characteristics on the dependent variable used in the firm-year analyses. For the mean (median) sample firm, extinguishment gains are 1.2% (0.1%) of total assets and 4.7% (2.3%) of net income. In my sample, 63% of firm-years report extinguishment gains, 22% extinguishment losses, and 15% report neither gains nor losses. The observation that extinguishment gains are more prevalent than losses is consistent with firms on average repurchasing debt at a discount relative to book value. On average, pre-repurchase earnings fall short of analysts' forecasts (-0.003), but are similar to earnings from the prior year (0.000). 36% of the observations in my sample have net operating losses. The average leverage ratio of 39.9% implies that firms that repurchase debt are significantly levered. Finally, the average ROA of -0.015 suggests that firms in my sample experience relatively weak performance prior to the repurchase. I winsorize all continuous variables at 1% and 99%. Table 2 Panel B reports characteristics of the repurchased debt. The average (median) amount of debt that is repurchased is $267 million ($150 million). Repurchases generally retire a significant proportion of the outstanding bond issue (69%) and reduce the maturity of the outstanding debt from 14 years to 8 years. The premium over market price offered for repurchases is 0.75% (5.23%) at the mean (median).

5.2 Main Results

5.2.1 Results from Tests of H1: Extinguishment Gains and Risk of Missing Earnings Benchmarks

Table 3 presents the results of the main tests. In these and all subsequent regressions, I report t-statistics corrected for heteroskedasticity and cross-sectional and time-series correlation using a two-way cluster at the firm and year level (Petersen 2009). In column 1, the coefficient on *Meet/Beat* is statistically significant as expected (coefficient = 0.32, t = 4.61). These results suggest that managers may use debt repurchases opportunistically to manipulate earnings so as to avoid missing analysts' earnings forecasts. Table 3 Column 2 reports the results for the second measure of earnings manipulation incentives, *Δ Earnings*. Consistent with the predictions in H1 and the finding in Column 1, the coefficient is positive and also statistically significant (coefficient = 0.29 t = 4.61), corroborating results from the first measure that managers rely on extinguishment gains to boost reported income when there is a risk of missing an earnings benchmark. Together, these results indicate that the magnitude of extinguishment gains recorded when a firm repurchases debt is influenced by earnings manipulation incentives.

Consistent with the evidence in prior work such as Levy and Shalev (2011), extinguishment gains/losses are positively associated with credit spreads, the amount of debt repurchased, firm size and leverage. These results may be interpreted in the following way: During periods marked by uncertainty and illiquidity in the debt markets, debt is likely to trade at a discount resulting in extinguishment gains upon the repurchase of debt. Firms that undertake larger repurchases are more likely to record larger gains/losses as a result of the magnitude of the transaction. Bigger firms are also more likely to have more debt to repurchase than smaller firms, leading to larger extinguishment gains/losses. Highly levered firms are also more likely to

repurchase debt, leading to larger gains/losses in comparison to less-levered counterparts. In addition, extinguishment gains/losses are negatively associated with prior performance, firm credit risk and the book-to-market ratio. These findings indicate that poor performance in the prior period may motivate the decision to repurchase debt, resulting in larger extinguishment gains/losses. Finally, data in growth firms (BTM) show that they are less likely to record gains/losses when debt is repurchased.

The outcome of the inclusion of extinguishment gains and losses in earnings is shown in Figure 2 and 3. In Figure 2, I find that the distribution of pre-extinguishment earnings is more dispersed than that of reported earnings which take into account the effect of extinguishment gains. I also find a discontinuity in the frequency of observations around zero in the reported earnings distribution, but do not observe it in the pre-extinguishment earnings series, implying that firms use extinguishment gains to cross the zero threshold.

According to Figure 3, for 7% of the sample, earnings are negative after including the gain, and for 60% of the sample inclusion of the extinguishment gains results in a switch from negative to positive earnings, suggesting that inclusion of extinguishment gains affects reported earnings. Majority of these observations are clustered in the interval to the immediate right of the benchmarks. For example, 70% of observations where inclusion of extinguishment gains resulted in a switch from negative to positive earnings (38% of the total sample) are clustered in the bin where the cumulative effect of including extinguishment gains is between 0 and 5% of net income, implying that the gains helped these managers barely meet/beat their targets. Thus, the results suggest that managers are more likely to repurchase debt at a discount and record income-increasing extinguishment gains when they are short of earnings benchmarks. In summary, the results in this section suggest that managers are more likely to repurchase debt at a discount and

record income-increasing extinguishment gains when they are short of earnings benchmarks.

5.2.2 Results from Tests of H2 and H3: Time-series Variation of Extinguishment Gains due to Changes in Accounting Treatment

In Table 4, I document the results of changes in earnings manipulation incentives following the introduction of SFAS 145 and SFAS 159. In column 1, the coefficient on the interaction term *Meet/Beat * Post 145* is significant (coefficient = 0.03 t = 4.13), suggesting that the introduction of SFAS 145, which mandates a shift in the classification of extinguishment gains/losses from extraordinary items to "above-the-line", intensifies preferences in the use of extinguishment gains to manage earnings. I report the results for Δ *Earnings * Post 145* in column 3, and the tenor of the results is the same (coefficient = 0.14 t = 3.41). Thus, the results across the two specifications are consistent with the explanation that the observed relation between extinguishment gains and the risk of missing an earnings benchmark is driven by earnings management incentives rather than economic fundamentals.

In Table 4 columns 2 and 4 I report the results of the tests following the introduction of SFAS 159. Across the two specifications, I find a weaker association between extinguishment gains and the risk of missing earnings benchmarks following the introduction of SFAS 159. In column 2, the coefficient on the SFAS 159 interaction term is significant in both specifications (*Meet/Beat * Post 145 * Post 159* coefficient = -0.02 t = 1.40 and Δ *Earnings* Post 145 * Post 159* coefficient = -0.11 t = -1.20). This result suggests that the introduction of SFAS 159, which gives firms the option to record liabilities at fair value, dampens managers' inclination to manage earnings through extinguishment gains/losses as some of these gains/losses have already been recognized in prior periods. While the effects are statistically insignificant, it is reasonable given my tests are subject to measurement error, because not all firms not all firms elect the fair-value

option and thus not all are impacted by the changes associated with SFAS 159. In summary, the results from Table 4 only weakly support the prediction that the documented relationship between the risk of missing an earnings target and extinguishment gains is driven by accounting motivations as opposed to economic fundamentals.

5.2.3 Results from Tests of H4: Cross-Sectional Variation of Earnings Management via Extinguishment Gains

Table 5, presents the results from the tests of H4. Recall that this cross-sectional test examines the tradeoff managers face in recording an extinguishment gain for accounting purposes, because this gain is also taxable In both columns, the coefficient on the interaction term is significant *Meet/Beat* * *NOLs* coefficient = 0.02 t = 2.44, and Δ *Earnings** *NOLs* coefficient = 0.03 t = 3.29). These findings can be interpreted as evidence that firms with tax net operating losses are more likely to manage earnings using extinguishment gains. Firms with net operating losses face a lower tax cost upon debt extinguishment and are thus more likely to extinguish debt to increase earnings. These findings can be interpreted as evidence that firms with tax net operating losses are more likely to manage earnings using extinguishment gains. Firms with net operating losses face a lower tax cost upon debt extinguishment and are thus more likely to extinguish debt to increase earnings.

5.3 Robustness Tests

I conduct an array of robustness tests on my main results. In the first set of tests, I address the potential concern that in spite of my time-series and cross-sectional tests above my results could still be capturing extinguishment gain effects unrelated to earnings management incentives. In particular, my empirical analyses could be suffering from a correlated omitted

variable bias. For example, it is possible that managers repurchase debt to adjust capital structure by reducing leverage. Also, managers might strategically opt to repurchase debt when it is trading relatively cheaply. However, a firm's debt trades cheaply when the firm is performing poorly, which corresponds to periods when managers have incentives to manipulate earnings. As a result, the effect on extinguishment gains I observe may be driven by the goal of reducing leverage and not opportunistic earnings management incentives.

In order to mitigate this concern, I examine whether the effects on the magnitude of recorded extinguishment gains are driven by firms whose leverage decreases after a debt repurchase or whether the effect persists across firms regardless of their change in leverage after the repurchase transaction. I do this by partitioning my sample into two subsamples based on the difference of the leverage ratio in the year before and after the repurchase. The first group, *IncLev* consists of observations where the leverage ratio either remained constant or increased in the year after the repurchase transaction. The second group, *DecLev* comprises observations where leverage decreased after the repurchase transaction. I then re-estimate my regressions in the *IncLev* subsample of 337 observations. Using this group greatly reduces the possibility that a manager's choice to reduce leverage when market prices are optimal could be driving the results because these firms either maintain or increase the amount of debt after the purchase.

Results of the tests of H1 using this alternative specification are shown in Table 6. As expected, the coefficient on *EM* is positive across both earnings manipulation incentive proxies: *Meet/Beat* coefficient = 0.13, t = 2.01), and *Δ Earnings* coefficient = 0.14 t= 2.11). These results appear weaker when compared to findings from the full sample and could be as a result of small sample bias, resulting in lower power. Nonetheless, while the results of this test appear somewhat weaker (smaller coefficients and R^2), the risk of missing an earnings benchmark

appears to influence the magnitude of reported extinguishment gains. In untabulated results, I continue to find weakly significant results for my tests of the remaining hypotheses on time-series and cross-sectional variation. Thus, it appears that some repurchases are done for purely 'paper' reasons to manage earnings.

In the second set of robustness tests, I exclude observations from the financial industry. In addition to financial and tax reporting considerations, firms in the financial industry also face regulatory capital regulation, which potentially impacts the propensity to manage earnings via extinguishment gains differently. As financial firms count towards a sizable portion of my sample (~25%), I exclude them and re-run my analyses (untabulated) and find that my results are robust to their exclusion.

In the third set of tests, I examine whether the earnings shortfall actually motivates managers to repurchase debt. My main empirical tests, which are conducted on a sample of firms that repurchased debt, hold constant the decision to repurchase. Consequently, my results do not speak as to whether the repurchase is actually driven by "window-dressing" incentives, or other economic reasons such as debt restructuring and interest expense reduction, and are simply timed to occur when there are maximum benefits such as periods when the firm risks missing its earnings targets. In order to shed light on the role earnings management incentives have on the actual decision to repurchase debt, I employ a 1-to-1 matched-sample strategy to create a group of firms with characteristics similar to those that repurchase debt but choose not to do so. This essentially creates a control sample, such that conditional on the control variables, the decision to repurchase debt can be modeled as randomly distributed between the two samples. I then estimate my regression using the following alternative specifications:

$$P(Repurchase)_{i,t} = \alpha + \beta_1 EM_{i,t} + \beta_2 Post\ 145 + \beta_3 EM * Post\ 145 + \sum_j \beta_j Controls_j + \varepsilon_{i,t} \qquad (5)$$

$$P(Repurchase)_{i,t} = \alpha + \beta_1 EM_{i,t} + \beta_2 Post\ 145 + \beta_3 Post\ 159 + \beta_4 EM * Post145 + \beta_5 Post145 *$$
$$Post159 + \beta_6 EM * \qquad Post159 + \beta_7 EM * Post\ 145 * Post\ 159 + \sum_j \beta_j Controls_j + \varepsilon_{i,t} \qquad (6)$$

The results of these tests are reported in Table 8 Panels A and B. As expected, the coefficient on *EM * Post 145* is positive, but insignificant (*Meet/Beat* Post 145* coefficient = 0.05 t =0.29, and *Δ Earnings* coefficient = 0.04 t =0.58) and that on *Meet/Beat * Post 145 * Post 159* is negative and insignificant as well (*Meet/Beat * Post 145 * Post 159* coefficient = -0.01 t =-0.54, and *Δ Earnings* Post 145 * Post 159* coefficient = -0.05 t =-0.76). While the insignificance of these results suggests that accounting motivations may not be a first-order reason to actually repurchase debt, it does not ignore the possibility that managers take into account the effect extinguishment gains have on reported earnings.

Finally, I also include an alternative measure of the prevailing macro-economic conditions when debt is repurchased. Following Levy and Shalev (2011), I use the Chicago Options Exchange Market Volatility Index (VIX) which measures the implied volatility of the S&P 500 index. This measure is often referred to as the fear index or the fear gauge. VIX is measured as the average level in the year in which the repurchase occurs. Data on VIX is obtained from the Yahoo Finance website.[17] Using this alternative specification, earnings management incentives continue to affect the magnitude of extinguishment gains. Taken together, the results from these sensitivity tests corroborate my earlier findings that earnings management incentives influence the decision to repurchase debt.

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[17] http://finance.yahoo.com/q?s=^VIX (Last accessed 03/20/2013)

5.4 Supplemental analyses: Variation in Earnings Management Incentives Partitioned by

Method of Repurchase

My main empirical tests lump two types of repurchases: open market repurchases and tender offers. However, given the inherent differences between the two types of transactions, ex-ante it is unclear whether the type of repurchase is a determinant of the size of extinguishment gain recorded after a debt repurchase. My supplemental tests, in which I conduct my previous empirical tests on subsamples partitioned by method of repurchase, shed insight on which of the two methods could be more effective as an earnings management tool.

In an open market offer, the transaction is normally executed by two dealers. The transaction price is set between the buyer's dealer and the seller's dealer, hence the counterparty's identity remains unknown. Such transactions are hard to price because of the market illiquidity and the sparse availability of data on bond transactions. Open market repurchases are typically not pre-announced; therefore at the time of implementation, they can be done without other bondholders' knowledge, although they have to be disclosed ex-post. [18,19] With tender offers, the issuing firm typically issues a press release or discloses intent to buy back bonds in its financial statements and sends an offer letter to all known bondholders inviting them to sell the bonds back to the firm (Levy and Shalev 2011).[20] In summary, on one hand, tender offers entail substantial costs and are usually offered at a premium over current market prices,

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[18] TRACE provides information about over the counter corporate bonds transactions since 2002. Since 2002, reporting on TRACE has gradually been expanded to include more bonds and became complete in February 2005 (Bushman et al. 2010). TRACE provides information about transaction size, price (inclusive of markdowns, markups and commissions) and date, but does not identify the buyer, the seller or even the dealer that executes the transaction.

[19] Unless an issuer is willing to disclose its repurchase intentions to all investors, it has to be careful not to disclose his information to any of the bondholders, in order not to violate Regulation FD (Levy and Shalev 2011).

[20] See also http://www.lw.com/Resources.aspx?page=FirmPublicationDetail&attno=06826&publication=2141 (Last accessed 10/13//2012).

reducing the gains on extinguishment of debt. On the other hand, tender offers are much larger in scale, extinguishing a larger portion of debt, presumably resulting in larger extinguishment gains. Also, tender offers are typically completed within a shorter period than open market offerings, which could be useful if the manager has a short horizon over which to manage earnings.

Similar to Levy and Shalev (2011), the statistics in Table 2 Panel C suggest that firms that choose to repurchase debt in the open market and those that do so via tender offer are mostly similar. The leverage of the average tendering firm is slightly higher than that of the average open market repurchase firm (0.43 vs. 0.39). Using the log of total assets as a measure of size, I document that the median size of a tendering firm is bigger than an open market repurchase firms (8.56 vs. 7.39). There is also evidence that both forms of repurchase are associated with relatively weak performance prior to the repurchase. A significant difference that I find, however, is that open market repurchase firms are more likely to record gains upon extinguishment of debt while tender repurchases record losses.

The results of the multivariate analyses are reported in Table 8. I document stronger results for the effect of earnings manipulation incentives on extinguishment gains in the open market repurchases sub-sample (*Meet/Beat* coefficient = 0.25 t = 4.44 and Δ *Earnings* coefficient = 0.31 t = 3.21) compared to tender offers (*Meet/Beat* coefficient = 0.25 t = 1.42 and Δ *Earnings* coefficient = 0.28 t = 2.90), suggesting that the lower premiums and relative flexibility in the timing of open market repurchases compared to tender offers make them a more effective earnings management mechanism. In untabulated results, the time-series and cross-sectional predictions are also generally stronger for the open market repurchases, but not significantly different from the tender offers.

6. Conclusion

In this paper I investigate whether earnings management incentives influence the magnitude of recorded extinguishment gains. Using a sample of 778 debt repurchases from 1994-2011, I test whether firms with earnings manipulation incentives – firms that risk reporting earnings less than the consensus analyst forecast and the previous year's earnings – record higher extinguishment gains and find evidence consistent with this prediction. Furthermore, I find evidence that the association is more pronounced after the introduction of SFAS 145, and weaker post-SFAS 159. I also investigate cross-sectional variation in earnings management incentives using a firm's tax attributes as a proxy for costs of manipulating earnings and find that such costs matter.

My analyses shed light on previously unexplored managerial incentives resulting from the alteration of a firm's capital structure through the extinguishment of debt. I also contribute to the earnings management body of research. SFAS 145 fundamentally changed the manner in which accounting for the extinguishment of debt is done. FASB noted that debt extinguishments are typically normal and recurring business events for business entities, and, as such, the gains and losses from such extinguishments should not be considered extraordinary unless they meet the "unusual in nature" and "infrequent in occurrence" criteria. My findings that there is a possibility that managers may use the gain on extinguishment of debt to improve reported earnings demonstrate what may be an unintended consequence of this regulatory change. I caution other mechanisms could be at play in earnings manipulation, but my evidence that firms with the highest incentive to boost earnings use extinguishment gains to do so, supports my predictions that firms use this amount to manage earnings.

In this paper, I have only explored two issues related to debt repurchases. Given the

existing limited research on the topic, there appears to be significant potential to explore other interesting unresolved questions. For example, is the earnings management incentives relation stronger in the presence of issue characteristics such as whether the debt is unsecured or subordinated as such issues are likely to be more sensitive to actions taken to reduce the value of debt? Do the incentives to manage earnings vary with the presence of performance pricing agreements, loan contracts or the managerial compensation mix? Income from the extinguishment of debt counts towards earnings from continuing operations. Since earnings components under this category are regarded as "frequent" and "usual", do extinguishment gains/losses display differential persistence in comparison to other components of earnings? Are extinguishment gains/losses predictive of future asset write-downs? Answers to these questions could be useful in extending our understanding of debt repurchases.

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Appendix A: Example of a Transaction that Results in an Extinguishment Gain

Assume ABC Co. decides to repurchase debt on January 1st, 2011. The book value of the repurchased debt on this debt is $100,000. Assume the company repurchases the bond for $89,454. Ignore any transaction costs.

Extinguishment gain: $10,546 = $100,000 - $89,454.

The corresponding journal entry to record this transaction would be:

Dr. Bonds Payable   **100,000**

        Cr. Cash   **89,454**

        Cr. Gain on Early Extinguishment   **10,546**

The financial statements at the end of the period would look as follows:

<p align="center">ABC CO.
CONSOLIDATED STATEMENT OF OPERATIONS</p>

	Fiscal year ended December 31,		
(in thousands)	**2011**	**2010**	**2009**
Revenues	611,520	588,000	560,000
Operating expenses:			
Cost of operations	256,488	243,664	231,480
Selling, general and administration	35,410	33,640	31,958
Depreciation	50,212	47,701	45,316
	342,110	325,005	308,754
Operating income	269,410	262,996	251,246
Other expense/(income), net:			
Interest expense	23,458	22,285	21,171
➤ Gain on debt extinguishment		(10,546)	
Minority interest	(1,000)	(3,540)	
Other expense/(income)	4,321	2,564	3,420
Other expense, net	26,779	10,763	24,591
Income from continuing operations	242,631	252,232	226,655

Appendix B: Example of a Debt Tender Offer Repurchase Pre-Announcement

TULSA, Okla., Nov. 7, 2011 /PRNewswire/ -- Williams (NYSE: WMB) today announced the commencement of cash tender offers for the series of notes and debentures listed below (the "Notes") for an aggregate purchase price of up to $1 billion (the "Tender Cap"). The terms and conditions of the tender offers are described in the Offer to Purchase, dated Nov. 7, 2011, and related Letter of Transmittal. Copies of these documents are available to holders from Global Bondholder Services Corporation, the depositary and information agent for the tender offers.

Title of Security	CUSIP	Amount Outstanding	Acceptance Priority Level	Fixed Spread (Basis Points)	U.S. Treasury Reference Security	Early Tender Payment (a)
7.875% Notes due 2021	969457BG4	$571,321,000	1	215 bps	2.125% due Aug. 15, 2021	$30.00
7.50% Debentures due 2031	969457BB5 969457BA7 U96906AC3	$526,573,000	1	220 bps	3.750% due Aug. 15, 2041	$30.00
7.75% Notes due 2031	969457BD1	$369,020,000	1	230 bps	3.750% due Aug. 15, 2041	$30.00
8.75% Notes due 2032	969457BM1	$686,218,000	1	240 bps	3.750% due Aug. 15, 2041	$30.00
8.125% Notes due 2012	969457BK5	$24,313,000	2	37.5 bps	1.375% due March 15, 2012	$30.00
7.625% Notes due 2019	969457AW0	$31,655,000	3	185 bps	2.125% due Aug. 15, 2021	$30.00
8.75% Senior Notes due 2020	969457BS8 969457BR0 U96906AF6	$13,565,000	4	200 bps	2.125% due Aug. 15, 2021	$30.00
7.70% Debentures due 2027(b)	565097AF9	$2,040,000	5	195 bps	3.750% due Aug. 15, 2041	$30.00
(a) Per $1,000 principal amount of Notes tendered by the Early Tender Time and accepted for purchase.						
(b) Originally issued by MAPCO Inc., which was acquired by Williams in March 1998.						

The tender offer for each series of Notes will expire at 12:00 midnight, New York City time, on Dec. 6, 2011, (the "Expiration Time"), unless extended.

The applicable total consideration per $1,000 principal amount of each series of Notes (the "Total Consideration") will be determined as described in the Offer to Purchase based on the present value of future payments on the applicable series of Notes discounted to the settlement date at a discount rate equal to the sum of the yield to maturity for the applicable reference security, calculated by the dealer managers based on the bid-side price at 2:00 p.m., New York City time, on Nov. 21, 2011, plus the applicable fixed spread, minus accrued interest up to, but not including, the settlement date.

Holders of Notes that are validly tendered and not validly withdrawn at or prior to 5 p.m., New York City time, on Nov. 21, 2011 (the "Early Tender Time"), unless extended, and accepted for purchase will receive the Total Consideration on the settlement date, which is expected to be Dec. 7, 2011.

Holders of Notes that are validly tendered after the Early Tender Time and at or prior to the Expiration Time and accepted for purchase will receive the Total Consideration minus an amount in cash equal to the amounts listed in the table above under the heading "Early Tender Payment," which will be payable on the settlement date.

In addition, payments for Notes purchased will include accrued interest up to, but not including, the settlement date.

The amount of each series of Notes that may be accepted for purchase will be determined in accordance with the Acceptance Priority Levels set forth above and may be prorated as described in the Offer to Purchase. All Notes validly tendered and not validly withdrawn of the series with Acceptance Priority Level 1 will be accepted before any Notes of the series with Acceptance Priority Level 2 and so forth through succeeding levels. If the aggregate purchase price that would be payable for all Notes validly tendered and not validly withdrawn of any series or group of series with the same Acceptance Priority Level exceeds the remaining amount available under the Tender Cap, such Notes will be accepted for purchase on a pro rata basis. In that event, Notes with an Acceptance Priority Level following the prorated series or group of series will not be accepted for purchase.

Tenders of Notes may be validly withdrawn at any time up until 5 p.m., New York City time, on Nov. 21, 2011, unless such date and time are extended (such date and time, as the same may be extended, the "Withdrawal Deadline"), but after such time may not be validly withdrawn unless Williams is required by law to permit withdrawal. Tenders of Notes made after the Withdrawal Deadline may not be validly withdrawn at any time unless Williams is required by law to permit withdrawal. Williams reserves the right, but is not obligated, to increase the Tender Cap in its sole discretion without extending the Withdrawal Deadline or otherwise reinstating withdrawal rights.

The consummation of the tender offers is conditioned upon the satisfaction or waiver of the conditions set forth in the Offer to Purchase, including the financing condition described therein.

Williams has retained Barclays Capital and Citigroup as lead dealer managers, and Global Bondholder Services Corporation as the depositary and information agent for the tender offers.

Appendix C: Excerpts From Firm's 10-Ks Showing Effects of the Repurchase on Earnings

Valassis Communications Inc. (VCI) 2010 10-K:

Net Earnings (Loss)

Net earnings were $385.4 million and $66.8 million for the years ended December 31, 2010 and 2009, respectively, and a net loss of $209.7 million for the year ended December 31, 2008. Diluted earnings per common share were $7.42 and $1.36 for the years ended December 31, 2010 and 2009, respectively, and was a diluted loss per common share of $4.37 for the year ended December 31, 2008.

Non-GAAP Financial Measures

Net earnings (loss) and earnings (loss) per diluted common share for the years ended December 31, 2010, 2009 and 2008 were impacted by certain items, including an impairment charge, gain from litigation settlement and extinguishment of debt. Adjusted net earnings, excluding these items, were $98.7 million, $60.6 million and $13.7 million for the years ended December 31, 2010, 2009 and 2008, respectively, or $1.90, $1.23 and $0.29, respectively, per diluted common share. These year-over-year increases were due to volume growth and our improved cost structure as the result of our business optimization and cost containment efforts. The following table reconciles net earnings (loss) and earnings (loss) per diluted common share for the years ended December 31, 2010, 2009 and 2008 to adjusted net earnings and adjusted net earnings per diluted common share, which exclude the items described above:

| | Year Ended December 31, | | | | | |
| | 2010 | | 2009 | | 2008 | |
	U.S. Dollars in Millions	Per Diluted Common Share	U.S. Dollars in Millions	Per Diluted Common Share	U.S. Dollars in Millions	Per Diluted Common Share
Net earnings (loss)	$ 385.4	$ 7.42	$ 66.8	$ 1.36	$ (209.7)	$ (4.37)
Excluding:						
Impairment charge, net of tax	—	—	—	—	223.4	4.66
Gain from litigation settlement, net of tax	(301.4)	(5.80)	—	—	—	—
Loss (gain) on extinguishment of debt, net of tax	14.7	0.28	(6.2)	(0.13)	—	—
Adjusted net earnings	$ 98.7	$ 1.90	$ 60.6	$ 1.23	$ 13.7	$ 0.29

We define adjusted net earnings and adjusted net earnings per diluted common share as net earnings (loss) excluding the items indicated in the table above. We present adjusted net earnings and adjusted net earnings per diluted common share because we believe that these measures are useful to investors as they provide measures of our profitability on a more comparable basis to historical periods because they exclude items we do not believe are indicative of our core operating performance. In addition, we exclude these items when we internally evaluate our company's performance.

Adjusted net earnings and adjusted net earnings per diluted common share are not calculated or presented in accordance with U.S. GAAP and have limitations as analytical tools and should not be considered in isolation from, or as alternatives to, operating income, net income, cash flow, EPS or other income or cash flow data prepared in accordance with GAAP. We compensate for

these limitations by relying primarily on our GAAP results and using these non-GAAP financial measures only supplementally. Further, other companies, including companies in our industry, may calculate adjusted net earnings and adjusted net earnings per diluted common share differently and as the number of differences in the way two different companies calculate these measures increases, the degree of their usefulness as comparative measures correspondingly decreases

Loss (Gain) on Extinguishment of Debt

On May 12, 2010, we commenced a cash tender offer to purchase up to $270.0 million aggregate principal amount of our $8^1/4\%$ Senior Notes due 2015 (the "2015 Notes") at a purchase price equal to 107% of the principal amount of the 2015 Notes purchased, plus accrued and unpaid interest. On June 11, 2010, we purchased $269.9 million aggregate principal amount of the 2015 Notes validly tendered pursuant to the terms of the tender offer. In addition, during the year ended December 31, 2010, we purchased in the open market an additional $27.9 million aggregate principal amount of the 2015 Notes at a weighted-average purchase price of 105.6% of the principal amount of the 2015 Notes purchased, plus accrued and unpaid interest. We recognized a pre-tax loss on extinguishment of debt of $23.9 million during the year ended December 31, 2010, which represents the difference between the aggregate purchase price and the aggregate principal amount of the 2015 Notes purchased and the proportionate write-off of related capitalized debt issuance costs.

Appendix D: Variable Definitions

All continuous variables are winsorized at 1% extreme observations.

Variable	Definition
Gain	Gain/loss from extinguishment of debt (Compustat 'dtep') deflated by total assets (Compustat 'at')
Meet/Beat	-1*(actual pre-extinguishment earnings per share (EPS) minus the latest analysts' consensus EPS forecast prior to the repurchase. I use the last consensus analysts' forecast prior to the repurchase and exclude companies that change their fiscal year end during the year to avoid multiple entries for analysts' forecasts)/ common shares outstanding (Compustat 'csho').
Pre-extinguishment earnings	Earnings before the inclusion of the gain from extinguishment of debt scaled by lagged total assets.
Δ Earnings	The difference in pre-extinguishment earnings from the current to the previous year, scaled by lagged total assets. Pre-extinguishment earnings are measured as net income before extraordinary items (Compustat 'ib').
POST 145	A dummy variable equal to one if the bond repurchase was executed after the passage of SFAS 145 in 2002 and zero otherwise.
POST 159	A dummy variable equal to one if the bond repurchase was executed after the passage of SFAS 159 in 2007 and zero otherwise.
Size	The natural logarithm of total assets (Compustat 'at').
ROA	Issuer's return on assets. Compustat ('oibdp'/('at'$_t$ + 'at'$_{t-1}$)/2).
Leverage	Leverage measured as total debt to total asset (Compustat ('dlc' + 'dltt')/ 'at').
Action size	The ratio of the repurchase amount to the firm's total assets.
NOLs	Positive indicator variable coded as one if loss carry-forward is positive as of the beginning of year t.
Spread	Credit spread between BBB corporate rated bonds and the risk free rate.
BTM	Firm's book-to-market ratio.
Rating	Long-term issuer credit ratings compiled by Standard & Poor's and reported on Compustat (Compustat 'splticrm'). The ratings range from AAA (highest rating) to D (lowest rating—debt in payment default). These ratings reflect S&P's assessment of the creditworthiness of the obligor with respect to its senior debt obligations. In my analysis, I collapse the multiple ratings into seven categories (AAA, AA, A, BBB, BB, B, and CCC to D), with ratings below BBB being defined as speculative.

Appendix D: Variable definitions (continued)

INC_LEV	Dummy variable equal to one if the issuer's leverage increased in the year prior to repurchase and zero otherwise.
OCF	Ratio of operating cash flows to total assets (Compustat *oancf/at*).
LAG_OCF	Lagged ratio of operating cash flows to total assets (Compustat *oancf/at*).
CASH	Ratio of cash to total assets (Compustat *che/at*).
VIX	Measure of market expectation of near term volatility conveyed by the S&P 500 stock index option prices.
Repurchase	Indicator variable that takes on a value of one if firm repurchased debt by tender offer or open market repurchase and zero otherwise.

Figure 1: Annual Debt Repurchases
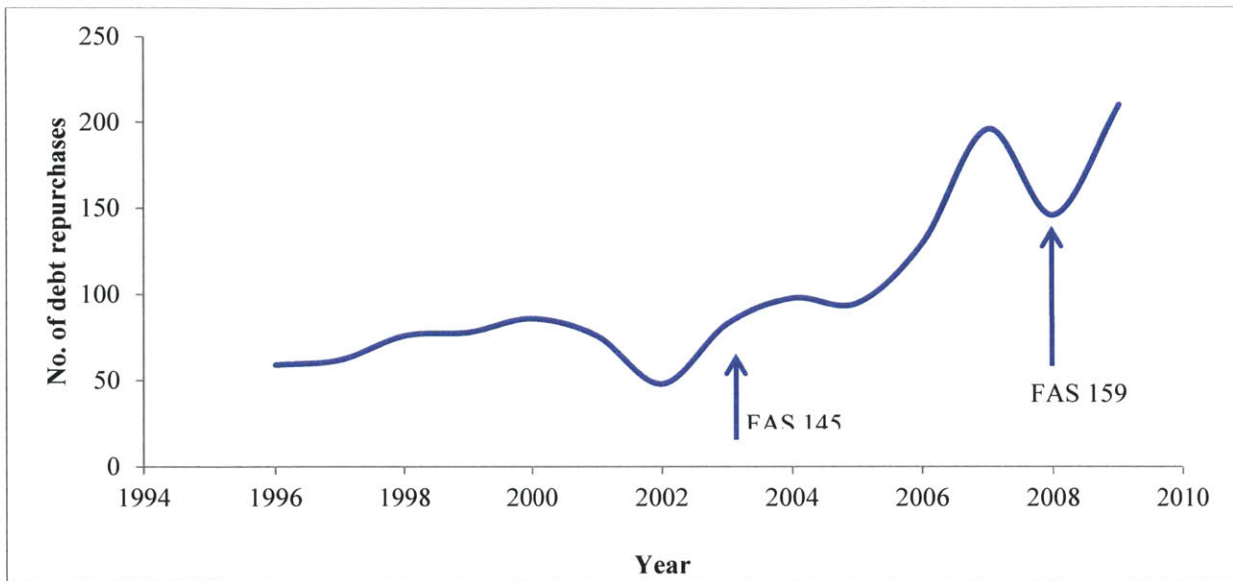
Figure 2: Comparison of pre- and post-extinguishment earnings
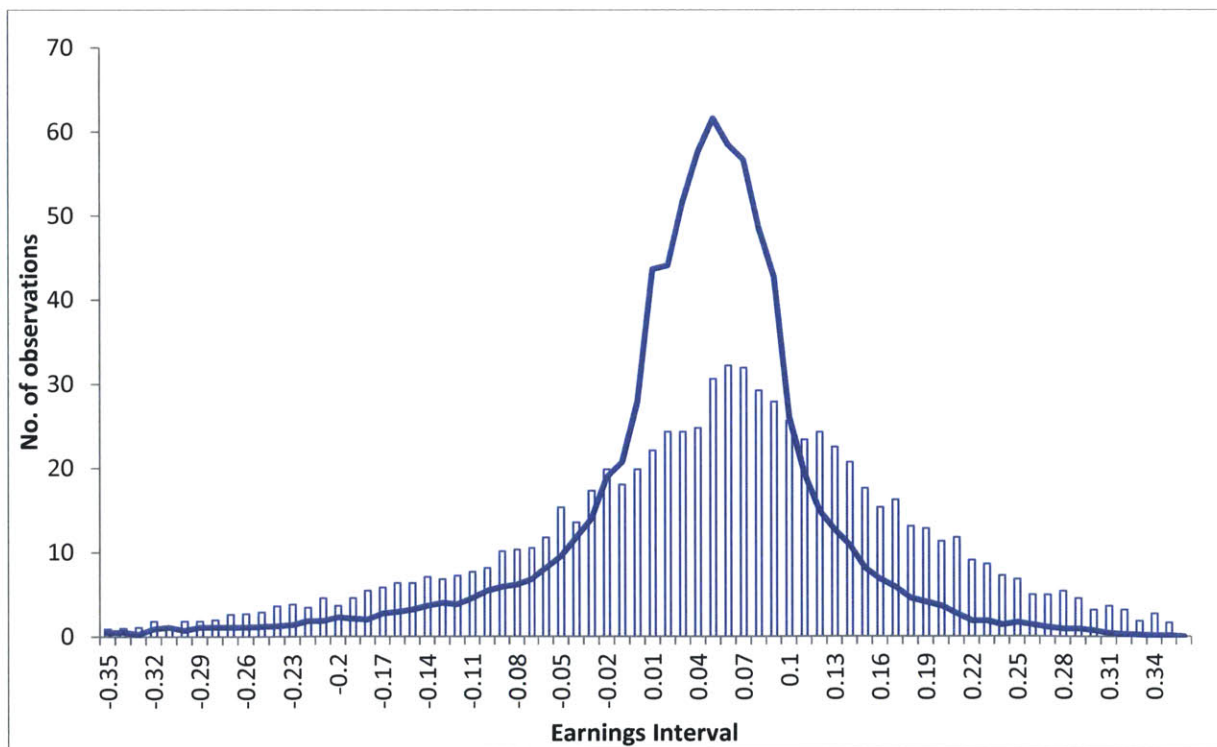
Fig. 2 shows the distribution of pre-extinguishment earnings (bars) and post-extinguishment earnings (line) scaled by lagged total assets.

Figure 3: Distribution of impact of extinguishment gains/losses on earnings
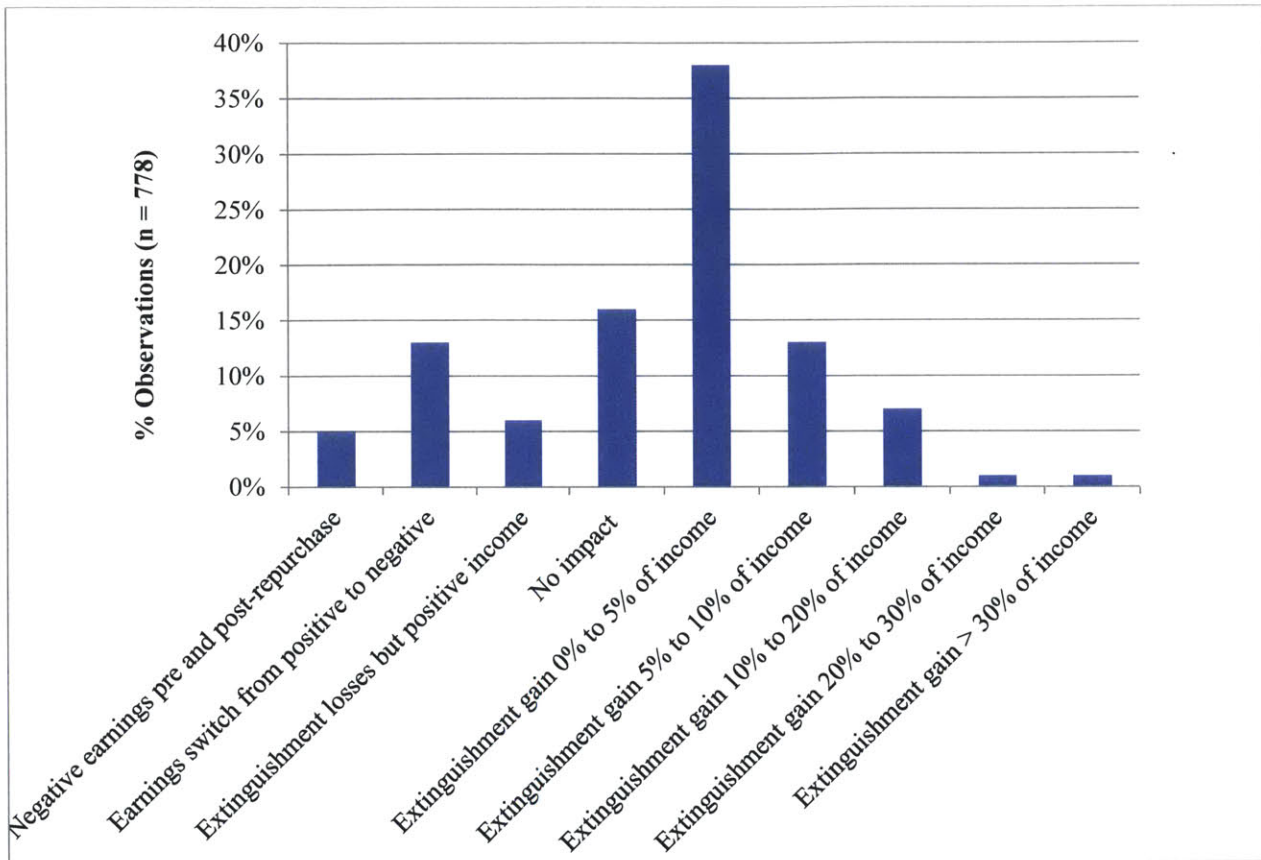
Fig. 3 shows the outcome of including extinguishment gains in earnings.

Table 1: Sample Description (1994-2011)

Panel A: Sample Reconciliation

Total tender and open market repurchases on Mergent FISD (Issue-Firm-Year obs)	3,238
Multiple actions per effective dates	(1,264)
Total tender and open market repurchases on Mergent FISD (Issue-Firm-Year obs)	1,974
Total tender and open market repurchases on Mergent FISD (Firm-Year obs)	1,261
Availability of Compustat financial data	(593)
Sample with Available Compustat financial data	668
Hand-collected observations from EDGAR	110
Final Sample	**778**

Panel B: Sample Distribution by 2-digit SIC industry

1-digit SIC industry	Number	Percent
0	58	7.46%
1	49	6.30%
2	67	8.61%
3	108	13.89%
4	99	12.73%
5	87	11.18%
6	191	24.55%
7	38	4.88%
8	81	10.41%
9	0	0.00%
Total	**778**	**100.00%**

Table 1 (continued): Sample Description (1994-2011)

Panel C: Proportion and Total Value of Debt Retired by Repurchase

Year	N	Proportion of debt retired in each issue	Total value in '000s
1994	1	1.0000	100,000
1995	5	1.0000	85,344
1996	9	0.9900	115,387
1997	19	1.0000	85,648
1998	76	0.9953	166,371
1999	78	1.0000	152,585
2000	86	0.9923	410,795
2001	76	0.9727	169,200
2002	48	0.9538	205,196
2003	83	0.8514	274,570
2004	98	0.8138	275,056
2005	95	0.9045	282,060
2006	130	0.8270	187,726
2007	196	0.9098	310,191
2008	146	0.7815	226,534
2009	163	0.5709	1,547,217
2010	210	0.5496	223,850
Total	**1,519**	**0.8500**	**4,817,730**

Table 2: Descriptive Statistics

Panel A: Sample Descriptive Statistics- Independent and Dependent variables

	#Obs	Mean	Median
Gain	778	0.012	0.001
Meet/Beat	778	-0.003	0.000
Δ Earnings	778	0.000	-0.001
NOLs (indicator variable)	778	0.364	
Action Size	778	0.026	0.013
Spread	778	0.189	0.138
Size	778	5.591	6.681
Leverage	778	0.399	0.378
ROA	778	-0.015	-0.002
BTM	778	0.267	0.306

Panel B: Issue characteristics

	#Obs	Mean	Median
Repurchase amount (thousands)	778	266,921	150,190
Proportion of outstanding amount retired	778	0.69	0.73
Initial maturity (years)	778	14.14	10.57
Remaining maturity (years)	778	8.64	6.65
Yearly repurchase amount (thousands)	778	335,353	167,788
Yearly repurchase amount/ Total assets	778	0.04	0.05
Premium offered over market price	520	0.75%	5.23%

Panel C: Sample Descriptive Statistics by repurchase type

	Open market repurchase			*Tender issue repurchase*		
	#Obs	Mean	Median	#Obs	Mean	Median
ROA	258	-0.043	0.010	520	-0.006	0.014
Leverage/ Total Assets	258	0.396	0.331	520	0.432	0.380
Log(Total assets)	258	7.386	7.300	520	8.588	8.760
Gain/Loss from extinguishment of debt/ Total Assets	258	0.013	0.002	520	-0.011	-0.002
Action size (thousands)	258	145,377	49,800	520	327,226	200,000

Panel D: Distribution of the impact of reported securitization gains on earnings

	#Obs	Mean	Median
Repurchase amount (thousands)	778	266,921	150,190
Proportion of outstanding amount retired	778	0.69	0.73
Initial maturity (years)	778	14.14	10.57
Remaining maturity (years)	778	8.64	6.65
Yearly repurchase amount (thousands)	778	335,353	167,788
Yearly repurchase amount/ Total assets	778	0.04	0.05
Premium offered over market price	520	0.75%	5.23%

Table 3: Tests of H1: Association between extinguishment gains and the risk of missing earnings benchmarks

This table reports the estimation of the relation between gains/losses on extinguishment of debt on pre-repurchase and the risk of missing earnings benchmarks.

$$Gain_{i,t} = \alpha + \beta_1 EM_{i,t} + \sum_j \beta_j \, Controls_j + \varepsilon_{i,t} \tag{1}$$

	Prediction	Meet/Beat (1)	Δ Earnings (2)
EM	+	0.32*** (4.61)	0.29*** (4.26)
Action size	?	0.07*** (4.73)	0.02** (3.32)
Spread	+	0.12*** (5.86)	0.04*** (8.32)
Firm Size$_{t-1}$	?	0.07 (1.42)	0.03 (1.73)
Leverage$_{t-1}$	?	0.38*** (4.75)	0.33*** (3.59)
ROA$_{t-1}$	?	-0.30** (-2.61)	-0.12*** (-3.87)
BTM$_{t-1}$	?	-0.00 (-1.82)	0.01 (0.28)
Rating$_{t-1}$	+	0.16** (2.04)	0.22*** (3.86)
Constant	?	1.14*** (4.22)	0.34*** (4.60)
Observations		778	778
Adjusted R^2		0.19	0.17
Firm FE		Yes	Yes
Year FE		Yes	Yes

The regression is run for debt repurchases either in the open market or via a tender offer. Firm and year fixed effects are included in the regressions. Variables are defined in the appendix. Asymptotic t-statistics reported in parentheses are based on robust standard errors clustered at the firm and year levels. ***, **, * indicate significance at 1%, 5%, or 10% level respectively

Table 4: Tests of H2 & H3: Time-series variation of extinguishment gains

| | Prediction | Earnings Management Benchmarks | | | |
| | | Meet/Beat | | Δ Earnings | |
		(1)	(2)	(3)	(4)
EM	+	0.35**	0.41*	0.24*	0.32**
		(2.68)	(1.80)	(1.42)	(2.08)
Post 145	?	0.02	0.01	0.02	0.02
		(1.24)	(0.96)	(-0.21)	(0.26)
EM * Post 145	+	**0.03***	0.07**	**0.14***	0.15***
		(4.13)	(2.55)	**(3.41)**	(3.65)
Post 159	?		-0.01		-0.04
			(-1.62)		(-1.20)
EM * Post 145 * Post 159	-		**-0.02***		**-0.11**
			(-1.40)		**(-1.20)**
Action size	?	0.02***	0.12	0.10*	0.09*
		(5.79)	(0.35)	(2.05)	(1.99)
Spread	+	0.04***	0.02***	0.14**	0.06*
		(3.93)	(3.35)	(2.32)	(1.53)
Firm Size$_{t-1}$	?	0.11	0.10	0.02	0.03
		(0.50)	(1.68)	(1.79)	(0.10)
Leverage$_{t-1}$	?	0.21***	0.12**	0.09**	0.07
		(3.63)	(3.30)	(2.91)	(2.66)**
ROA$_{t-1}$	?	-0.01	-0.15	-0.30*	-0.39
		(-1.35)	(-1.60)	(-2.14)	(-1.82)
BTM$_{t-1}$	?	-0.01	-0.06	-0.02	-0.02
		(-0.04)	(-0.80)	(-0.75)	(-0.30)
Rating$_{t-1}$	+	0.04***	0.06**	0.02***	0.01***
		(3.28)	(3.04)	(4.47)	(5.41)
Observations		778	778	778	778
Adjusted R^2		0.20	0.22	0.18	0.19
Firm FE		Yes	Yes	Yes	Yes

This table reports the relationship between gains on debt extinguishment and the risk of missing earnings benchmarks following regulatory changes that affected the accounting for debt repurchases.

$$Gain_{i,t} = \alpha + \beta_1 EM_{i,t} + \beta_2 Post\ 145 + \beta_3 EM * Post\ 145 + \textstyle\sum_j \beta_j Controls_j + \varepsilon_{i,t} \qquad (2)$$

$$Gain_{i,t} = \alpha + \beta_1 EM_{i,t} + \beta_2 Post\ 145 + \beta_3 EM * Post\ 145 + \beta_4 Post\ 159 + \beta_5 EM * Post\ 145 * Post\ 159 + \textstyle\sum_j \beta_j Controls_j + \varepsilon_{i,t} \qquad (3)$$

The regression is run for debt repurchases either in the open market or via a tender offer. Firm fixed effects are included in the regressions. The specification also includes the intercept. Variables are defined in the appendix. Asymptotic t-statistics reported in parentheses are based on robust standard errors clustered at the firm and year levels. ***, **, * indicate significance at 1%, 5%, or 10% level respectively.

Table 5: Tests of H4: Cross-sectional variation of gains/losses on extinguishment of debt

	Prediction	Meet/Beat (1)	Δ Earnings (2)
EM	+	0.08*	0.26**
		(1.76)	(2.68)
NOLs	?	-0.02	-0.02
		(-0.43)	(1.17)
*EM * NOLs*	+	0.02**	0.03***
		(2.44)	(3.29)
Action size	?	0.02***	0.04**
		(4.44)	(2.32)
Spread	+	0.18*	0.28**
		(1.84)	(2.44)
Firm Size$_{t-1}$	?	0.05**	0.04**
		(2.54)	(2.70)
Leverage$_{t-1}$	?	0.10	0.18
		(1.40)	(1.54)
ROA$_{t-1}$	?	-0.00	-0.02**
		(-0.01)	(2.90)
BTM$_{t-1}$	?	0.05***	0.05*
		(7.46)	(1.90)
Rating$_{t-1}$	+	0.02**	0.01***
		(2.20)	(3.44)
Observations		574	574
Adjusted R^2		0.34	0.19
Firm FE		Yes	Yes

This table reports cross-sectional variation between gains on debt extinguishment and the risk of missing earnings benchmarks.

$$Gain_{i,t} = \alpha + \beta_1 EM_{i,t} + \beta_2 NOLs + \beta_3 EM * NOLs + \sum_j \beta_j Controls_j + \varepsilon_{i,t} \tag{4}$$

This subsample only retains observations for repurchases that occurred after the passage of SFAS 145. The regressions are run for debt repurchases either in the open market or via a tender offer. Firm and year fixed effects are included in the regressions. The specification also includes the intercept (untabulated). Variables are defined in the appendix. Asymptotic t-statistics reported in parentheses are based on robust standard errors clustered at the firm and year levels. ***, **, * indicate significance at 1%, 5%, or 10% level respectively.

Table 6: Robustness tests: Association between extinguishment gains and the risk of missing earnings benchmarks- *IncLev* subsample

	Prediction	Meet/Beat (1)	Δ Earnings (2)
EM	+	0.13**	0.14**
		(2.01)	(2.11)
Action size	?	0.04***	0.03
		(3.94)	(1.57)
Spread	+	0.05	0.03**
		(1.28)	(2.13)
Firm Size$_{t-1}$	?	0.11	0.01
		(0.87)	(0.22)
Leverage$_{t-1}$	?	0.12*	0.03
		(1.95)	(0.58)
ROA$_{t-1}$	?	0.10	-0.01
		(0.95)	(-1.31)
BTM$_{t-1}$	?	0.25	0.21
		(0.37)	(0.01)
Rating$_{t-1}$	+	0.10***	0.03***
		(4.71)	(4.04)
Constant		1.99	1.33
		(1.72)	(0.61)
Observations		337	337
Adjusted R^2		0.24	0.04
Firm FE		Yes	Yes
Year FE		Yes	Yes

This table reports the estimation of the gains/losses on extinguishment of debt on and the risk of missing earnings benchmarks.

$$Gain_{i,t} = \alpha + \beta_1 EM_{i,t} + \sum_j \beta_j \ Controls_j + \varepsilon_{i,t} \qquad (1)$$

The regression is run for debt repurchases either in the open market or via a tender offer for the *IncLev* subsample, which consists of observations where the leverage 1 year after the repurchase either remained constant or increased relative to the year before repurchase. Firm and year fixed effects are included in the regressions. Variables are defined in the appendix. Asymptotic t-statistics reported in parentheses are based on robust standard errors clustered at the firm and year levels. ***, **, * indicate significance at 1%, 5%, or 10% level respectively

Table 7: Robustness tests: Association between repurchase decision and risk of missing earnings benchmarks

Panel A: Meet/Beat

	Prediction	Meet/Beat		
		(1)	(2)	(3)
Meet/Beat	+	**0.09**	0.12	0.13
		(0.65)	(0.81)	(0.87)
Post 145	?		-0.03	0.02
			(-0.33)	(-0.52)
Meet/Beat* Post 145	+		**0.05**	0.03
			(0.29)	(0.27)
Post 159	?			-0.03
				(-0.66)
Meet/Beat* Post 145 * Post 159	-			**-0.01**
				(-0.54)
Inc_Lev	?	-0.40*	-0.35***	-0.40**
		(-2.23)	(-4.21)	(-3.27)
Cash	+	1.19**	1.10***	1.19***
		(2.53)	(3.32)	(3.59)
OCF	?	0.32	0.25	0.28
		(0.60)	(0.05)	(1.23)
Lag_OCF	?	-0.38	-0.39	-0.35
		(-0.24)	(-0.84)	(-0.59)
Action size	?	0.06	0.05**	0.04**
		(1.61)	(2.80)	(2.76)
Spread	+	0.02**	0.04**	0.02**
		(6.01)	(3.20)	(2.79)
Firm Size$_{t-1}$	?	0.02*	0.01	0.00
		(1.96)	(0.57)	(0.63)
Leverage$_{t-1}$	?	0.09	0.11	0.06
		(0.62)	(0.65)	(1.17)
ROA$_{t-1}$	?	-0.43	-0.49	-0.52
		(-0.98)	(-1.43)	(-0.72)
BTM$_{t-1}$	?	0.01	-0.03	0.03
		(0.54)	(-0.70)	(1.12)
Rating$_{t-1}$	+	0.04**	0.01*	0.02*
		(2.97)	(2.11)	(2.25)
Observations		1524	1524	1524
Adjusted R^2		0.00	0.01	0.01
Firm FE		Yes	Yes	Yes
Year FE		Yes		

Table 7: Robustness tests: Association between repurchase decision and risk of missing earnings benchmarks
Panel B: Δ Earnings

	Prediction	Δ Earnings (1)	Δ Earnings (2)	Δ Earnings (3)
Δ Earnings	+	**0.02**	0.05*	0.05
		(1.36)	(1.42)	(0.72)
Post 145	?		0.01	(0.02
			(0.03)	(0.25)
*Δ Earnings * Post 145*	+		**0.04**	0.06
			(0.58)	(0.43)
Post 159	?			-0.03
				(-1.17)
*Δ Earnings * Post 145 * Post 159*	-			**-0.05**
				(-0.76)
Inc_Lev	?	-0.33*	-0.35***	-0.39**
		(-2.00)	(-4.22)	(-2.89)
Cash	+	0.68***	1.13**	1.21***
		(3.72)	(1.96)	(3.17)
OCF	?	0.60	0.25	0.22
		(1.48)	(1.29)	(1.02)
Lag_OCF	?	-0.31	-0.41	-0.42
		(-0.28)	(-0.05)	(-0.64)
Action size	?	0.02*	0.06	0.05*
		(1.87)	(1.11)	(1.74)
Spread	+	0.02**	0.03**	0.02*
		(2.50)	(2.51)	(1.83)
Firm Size$_{t-1}$	?	0.03	0.01	0.05
		(1.48)	(0.79)	(1.95)
Leverage$_{t-1}$	?	0.09	0.11	0.07
		(1.29)	(0.66)	(1.34)
ROA$_{t-1}$	?	-0.42	-0.45	-0.46
		(-0.12)	(-1.23)	(-1.47)
BTM$_{t-1}$	?	0.03	-0.02	-0.01
		(0.98)	(-0.91)	(-1.15)
Rating$_{t-1}$	+	0.05**	0.02***	0.02***
		(2.71)	(3.57)	(2.90)
Observations		1524	1524	1524
Adjusted R^2		0.02	0.02	0.03
Firm FE		Yes	Yes	Yes
Year FE		Yes		

This table reports the estimation of the gains/losses on extinguishment of debt on pre-repurchase earnings shortfall relative to earnings benchmarks. $P(Repurchase)_{i,t} = \alpha + \beta_1 EM_{i,t} + \sum_j \beta_j \, Controls_j + \varepsilon_{i,t}$ (6)

The regression is run for debt repurchases either in the open market or via a tender offer. Firm and year fixed effects are included in the regressions. Variables are defined in the appendix. Asymptotic t-statistics reported in parentheses are based on robust standard errors clustered at the firm and year levels. ***, **, * indicate significance at 1%, 5%, or 10% level respectively.

Table 8: Supplemental Tests: Association between extinguishment gains and the risk of missing an earnings target partitioned by method of repurchase

	Prediction	Open Market Repurchases		Tender Offers	
		Meet/Beat (1)	Δ Earnings (2)	Meet/Beat (3)	Δ Earnings (4)
EM	+	0.25*** (4.44)	0.31*** (3.21)	0.25* (1.42)	0.28** (2.90)
Action size	?	0.12*** (4.99)	0.08*** (3.97)	0.06*** (4.89)	0.04** (3.33)
Spread	+	0.13*** (8.95)	0.16*** (8.42)	0.07*** (4.60)	0.01*** (8.91)
Firm Size$_{t-1}$	?	0.13** (2.39)	0.07 (1.15)	0.01 (1.14)	0.04 (0.35)
Leverage$_{t-1}$	?	0.38*** (4.51)	0.39*** (3.52)	0.30*** (3.80)	0.30*** (3.44)
ROA$_{t-1}$	?	-0.04** (-2.46)	-0.04** (-2.86)	-0.34** (-2.54)	-0.22*** (-4.51)
BTM$_{t-1}$	?	0.08 (0.44)	0.06 (0.62)	-0.06 (-1.43)	-0.05 (-0.10)
Rating$_{t-1}$	+	0.19** (2.63)	0.22*** (3.30)	0.14*** (3.99)	0.12*** (3.53)
Constant		5.02*** (4.61)	4.88*** (14.64)	4.32*** (7.04)	4.56*** (13.56)
Observations		232	232	439	439
Adjusted R^2		0.39	0.25	0.24	0.09
Firm FE		Yes	Yes	Yes	Yes
Year FE		Yes	Yes	Yes	Yes

This table reports the estimation of the gains/losses on extinguishment of debt on earnings management incentives.

$$Gain_{i,t} = \alpha + \beta_1 EM_{i,t} + \textstyle\sum_j \beta_j\, Controls_j + \varepsilon_{i,t} \qquad (1)$$

The regression is run for a subsample of debt repurchases partitioned by the method of repurchase. Firm and year fixed effects are included in the regressions. Variables are defined in the appendix. Asymptotic t-statistics reported in parentheses are based on robust standard errors clustered at the firm and year levels. ***, **, * indicate significance at 1%, 5%, or 10% level respectively.