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Evidence of the Impact of Reported Discontinued Operations on Credit Ratings

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ABSTRACT

We investigate the impact of accounting for discontinued operations on credit ratings under two regimes, APB No. 30 and SFAS No. 144. We find that under APB No. 30 and SFAS No. 144, the relationship between reported discontinued operations and credit ratings was negative for firms reporting a gain from discontinued operations. Separately stated gains of discontinued operations appear to have persistence in both periods, pre-SFAS 144 and SFAS 144. Reported losses from discontinued operations was not associated with the credit rating and therefore appear to have little or no persistence.

KEYWORDS: Discontinued operations, Credit ratings, Separately-stated items, APB No. 30, SFAS No. 144, ASU 2014-08

INTRODUCTION

We investigate the impact of accounting for discontinued operations on credit ratings under two regimes, Accounting Principles Bulletin (APB) No. 30 and Statement of Financial Accounting Standard No. 144 (SFAS No. 144 – codified under Topic 205-20). Presumably, discontinued operations are separately stated in the income statement as they are non-recurring – having no or low persistence – therefore, they should not impact credit ratings. The recently enacted Accounting Standards Update (ASU) 2014-08, *Reporting Discontinued Operations and Disclosures of Disposals of Components of an Entity* (ASU 2014-08), prompted us to examine whether this presumption is accurate and whether a relationship existed between credit ratings and discontinued operations under the two prior standards. The study's results contribute to extant literature on discontinued operations and the relevance of separately-stated or separately-disclosed items.

Over the past 40 years while the presentation of discontinued operations as a separately-stated item has been consistent, the rules for what qualifies as a discontinued operation have changed. Initially, under APB No. 30, asset disposals qualifying for discontinued operations accounting were narrowly defined as a component of a business that represented a major line

or class of customer. Beginning in 2002, SFAS No. 144 expanded the type of asset disposals that qualified by redefining a component as comprising “operating and cash flows that can be clearly distinguished from the rest of the entity” and eliminated the requirement that the disposed component represent a major line or class of customer. More recently, ASU 2014-08 revised the criteria for discontinued operations treatment to again be more restrictive by adding a requirement that the disposal represent a “major strategic shift” for the company (ASU 2014-08, 69).

In each case, the standard setters’ goal was to improve the usefulness of the resulting financial statements (e.g., SFAS No. 144, 6). The Financial Accounting Standards Board’s (FASB) Conceptual Framework recognizes that one of the objectives of financial reporting is to provide information that is useful for assessing the amount, timing, and uncertainty of an entity’s future cash flows. A guiding philosophy is that an income statement is more useful for this purpose if non-recurring items are separated from income from continuing operations. If the accounting standards are able to achieve this separation with sufficient precision, then the predictive power of income from continuing operations should be maximized and the predictive power of items reported as transitory or non-recurring should approach zero. If credit analysts perceive that discontinued operations are restricted to non-recurring gains and losses, credit ratings should not be impacted. On the other hand, if discontinued operations are viewed as including recurring gains and losses, they are relevant to future cash flows and will impact credit ratings.

While APB No. 30 may (or may not) have been too restrictive in terms of what qualified for discontinued operations treatment, SFAS No. 144 may have been too lenient, enabling managers to use its provisions to smooth or otherwise manipulate earnings (Dickins, McCarthy, O’Reilly and Schneider 2016a; Stefanescu 2006). For example, Barua, Lin, and Sbaraglia (2010) found evidence that companies shift operating expenses to discontinued operations to increase core earnings and to meet or beat analysts’ forecasts. The efficient market hypothesis (Fama 1965), predicts that to the extent SFAS No. 144’s expanded criteria resulted in gains and losses from *recurring* asset disposals being reported as discontinued operations, financial statement users would build these into assessments of companies’ future cash flows. ASU 2014-08 removes at least some of the discretion inherent in the provisions of SFAS No. 144, making its terms more similar to those of APB No 30, and potentially improving the quality of the information that is provided by separately-stating discontinued operations in the income statement.

We find under both APB No. 30 and SFAS No. 144 for companies that report a gain from discontinued operations that there exists a negative association between the gains reported and companies’ credit ratings. This suggests that credit rating agencies viewed gains from discontinued operations relevant to assessing future cash flows. In contrast, for companies that reported a loss from discontinued operations, there was no association between the losses reported and the companies’ credit ratings. This suggests that credit rating agencies did not perceive the reported loss amounts as relevant to assessing the reporting company’s future cash flows.

The remainder of this paper is organized as follows. In the next section, we review the changing criteria for reporting discontinued operations, relevant prior research, and develop the study’s hypothesis. The study’s data and methodology are described in the next section followed by a discussion of the results; and our conclusions are presented in the final section.

REPORTING OF DISCONTINUED OPERATIONS, PRIOR RESEARCH AND HYPOTHESIS

Reporting of Discontinued Operations

In 1973, the Accounting Principles Board (the Board) issued APB No. 30 to, among other things, provide criteria to assist preparers in determining how to account for the disposal of a segment of the business and which transactions should be treated as extraordinary (§ 3). The Board noted that many accountants believe the income statement is more useful if the results of continuing operations are reported separately from the operations of a segment of the business that has been or will be discontinued (§ 5). Interestingly, APB 30 § 5 references “accountants” vs. users of financial information. Also, while the FASB does not explicitly express agreement with this view, agreement is implicit in that the FASB adopted provisions in line with this view. APB No. 30 mandated such treatment.

APB No. 30 defined a segment of a business as a component of an entity that represents a major line of business or class of customer. It specifically noted that companies should distinguish the disposal of a business segment from those asset disposals that occur in the normal course of operating a business. The Board stated that the results of discontinued operations were required to be reported after income from operations but not as an extraordinary item (§ 8).

In 2001, the release of SFAS No. 144 expanded the definition of disposals to be accounted for as discontinued operations to include “component operations.” A component “comprises operations and cash flows that can clearly be distinguished, operationally and for financial reporting purposes, from the rest of the entity” (SFAS No. 144, 5). The new standard eliminated APB No. 30’s requirement that the disposed component represent a major line of business or class of customer. Under the expanded definition, sales of individual buildings, or the closing of individual stores or plants could qualify as discontinued operations as many companies had the ability to both financially and operationally distinguish these assets from those the company continued to hold. The FASB stated an expectation that the new criteria would result in more disposal transactions qualifying for discontinued operations presentation (SFAS No. 144, 6). Consistent with those expectations, the mean number of U.S. publicly-traded companies reporting discontinued operations was significantly greater under SFAS No. 144 (average of 315 per year from 2002 to 2014) than under APB No. 30 (average of 88 per year from 1993 to 2001) (difference of 227, $p < 0.001$).

In 2014, the FASB again revised the criteria for determining asset disposals to be reported as discontinued operations. ASU 2014-08 is effective for asset disposals occurring within annual periods beginning on or after December 15, 2014. The revision is in part a response to critics who had argued that too many recurring disposals of small asset groups were being reported as discontinued operations (ASU 2014-08, 1). ASU 2014-08 raised the threshold necessary for treatment as a discontinued operation by adding a requirement that the disposal represent a strategic shift that has (or will have) a major effect on the company’s operations and financial results. Left undefined are the terms *strategic* and *major*.

As with prior revisions, the FASB argues that application of the revised criteria will result in financial statements that are more decision-useful for users (ASU 2014-08, 5). The requirement that a disposed segment must represent a strategic shift for the company is likely to result in fewer asset disposals qualifying for treatment as discontinued operations than did under the prior criteria. Preliminary data suggest that following the enactment of ASU 2014-08, the

number of U.S. publicly-traded companies reporting discontinued operations declined from 583 in 2014 to 247 in 2015. Data is from Compustat.

Prior Research

Two streams of literature are particularly pertinent to this study: the relevance of separately-stated items of income and expense, including discontinued items, and the influence of financial information on credit ratings.

The results of extant literature support that gains and losses reported as special items are transitory (Jones and Smith, 2011), or at least more transitory than other components of income (Burgstahler, Jiambalvo, and Shevlin, 2002). Separately stating transitory gains and losses improves transparency, enabling users of financial information to better predict future cash flows. These studies suggest that separately-reported discontinued operations should not impact credit ratings.

Curtis, McVay and Wolfe (2014) examined the influence of changes in accounting for discontinued operations on the usefulness of disaggregated income components in predicting a company's future income. They found the broader scope of discontinued operations under SFAS No. 144 produced more persistent income from continuing operations among firms reporting discontinued operations. In other words, SFAS No. 144 may have enabled managers to shift some recurring expenses between continuing and discontinued operations, effectively smoothing continuing earnings. This opens up the possibility that, if markets are efficient, under SFAS No. 144 separately-reported discontinued operations may impact credit ratings.

Kaplan and Urwitz (1979) analyzed the market cost of debt for business units and privately-held companies by employing a stepwise ordered logit model to determine the variables that better explain credit ratings. They concluded there are four variables most significant in establishing credit ratings: size, financial leverage, operating performance, and volatility. Additional studies have also found that rating agencies use both public and private information when assigning credit ratings (Ziebart and Rieter 1992; Hand, Holthausen, and Leftwich 1992).

Ayers, LaPlant and McGuire (2010) investigated whether credit analysts incorporate information from an alternative performance measure prepared in accordance with the Internal Revenue Code (IRC), in addition to financial statements prepared using generally accepted accounting principles (GAAP). Their study provides evidence consistent with large book-tax changes signaling negative information to credit rating agencies.

In performing an analysis of investment-grade issuers, Jorion, Shi, and Zhang (2009) provided evidence that apparent decreases in credit ratings over time can be attributed primarily to changes in accounting quality. After controlling for changes in accounting quality, Jorion et al. (2009) found no evidence that rating agencies tightened their credit standards.

Chen, Martin, Mashruwala and Mashruwala (2015) tested whether credit ratings are influenced by underfunded multiemployer pension plan obligations (MEPPs) both before and after the FASB's 2010 change in a relevant reporting standard. The new standard required more disclosure related to the underfunded MEPPS. Chen et al. (2015) found that before and after the passage of the accounting standard, the underfunding was negatively associated with a firm's credit rating suggesting creditors perceive MEPP underfunding to be a liability of the firm.

Hypothesis

The efficient markets hypothesis (EMH - Fama 1965) suggests that market prices reflect all available information. Market valuations reflect investors' predictions of future cash flows based on all available public information (semi-strong form of EMH); and accounting data in the form of earnings releases is informative (Beaver 1968, Beaver 1970). For the most part the results of prior research support this premise (Fama 1970, Jensen 1978). However, there is some evidence that this is not always the case. Most-notably in accounting are the studies of Bernard and Thomas (1989) who found that investors tend to under-react to quarterly earnings announcements, Hand (1990) who found that investors react to previously disclosed information, and Sloan (1996) who found that non-cash accruals impact future stock returns. Credit ratings are valuation measures. Companies perceived as having greater financial prospects (future cash flows) generally receive higher credit ratings.

Consistent with EMH, when separately stated items of income and loss are perceived to be transitory (i.e., they have no impact on future cash flows), they should not influence credit ratings, and when they are expected to have persistence, they should. Even with the broadening of items qualifying for discontinued operations treatment under SFAS No. 144, we hypothesize no difference in the impact of discontinued operations comparing the APB No. 30 period (hereafter called pre-SFAS No. 144) and SFAS No. 144 period. If the items reported are transitory and not permanent, then they should not have any effect on future cash flows and profitability and therefore not be significant in the association with credit ratings.

DATA AND METHODOLOGY

Sample

To evaluate the study's hypothesis, 26 years of data are gathered and segmented into two equal 13-year periods representing the pre-SFAS No. 144 years (1989 to 2001) and the SFAS No. 144 years (2002 to 2014). We do not include 2015 data, the year of adoption of ASU 2014-08, in our analyses. More specifically, data is from Compustat-Capital IQ, Monthly Updates, North America-Fundamentals Annual data base and the Ratings data base.

Sample firms are those located in the U.S. (Compustat *fic* = 'USA'), traded on a major stock exchange (Compustat data item *stko* = 0), reporting discontinued operations (Compustat data item *do*) other than zero and reporting a stock price (Compustat data item *prcc_p*) greater than zero at fiscal year-end. The sample of discontinued operations firms ($n = 24,186$) was merged by GVKEY with the Standard & Poor's domestic long-term issuer credit rating (Compustat data item *spltrcm*). The sample was further refined to eliminate firms with negative common shareholders' equity (Compustat data item *ceq*), and those with no reported total assets (Compustat data item *at*), long-term debt - total (Compustat data item *dltt*), earnings before income and taxes (Compustat data item *ebit*), net income (Compustat data item *ni*), or interest expense (Compustat data item *xint*) – as these data items are necessary to construct ratios used in the regression model. Eliminating firms without these data necessary to estimate the regression reduced the sample to 5,241 firm year observations. All continuous variables are winsorized at the 1st and 99th percentiles to address outliers.

As depicted in Table 1, the final sample consists of 1,143 pre-SFAS No. 144 observations (for the 13-year period 1989 to 2001) and 4,098 SFAS No. 144 observations (for the 13 year period 2002 to 2014), a total of 5,241 firms used in this study. The difference in the number of observations comparing the periods is consistent with prior studies. Dickins et al. (2016a) report

U.S. companies reporting discontinued operations in the seven-year period ended 2001 of 1,885, compared to 5,008 in the seven year period ended 2008. Of the pre-SFAS No. 144 observations, 544 (47.6 percent) are discontinued losses and 599 (52.4 percent) are discontinued gains. Of the SFAS No. 144 observations, 1,808 (44.1 percent) are discontinued losses and 2,290 (55.9 percent) are discontinued gains.

TABLE 1
Frequency Distribution of Firms

Panel A: Pre-SFAS No. 144 Fiscal Years (1989-2001)					
Number of	Pre-SFAS No. Fiscal Years	Loss Firms	Gain Firms	Total	Percentage
1	1989	44	48	92	8.0
2	1990	33	34	67	5.9
3	1991	40	25	65	5.7
4	1992	45	25	70	6.1
5	1993	40	35	75	6.6
6	1994	33	35	68	5.9
7	1995	41	49	90	7.9
8	1996	30	47	77	6.7
9	1997	27	58	85	7.4
10	1998	51	55	106	9.3
11	1999	45	75	120	10.5
12	2000	56	57	113	9.9
13	2001	59	56	115	10.1
Panel A Total		544	599	1,143	
Percent		47.6	52.4		100.0
Panel B: SFAS No. 144 Fiscal Years (2002-2014)					
Number of	SFAS No. 144 Fiscal Years	Loss Firms	Gain Firms	Total	Percentage
1	2002	130	124	254	6.2
2	2003	142	174	316	7.7
3	2004	149	221	370	9.0
4	2005	150	226	376	9.2
5	2006	159	217	376	9.2
6	2007	131	224	355	8.7
7	2008	134	165	299	7.3
8	2009	144	130	274	6.7
9	2010	120	157	277	6.8
10	2011	124	157	281	6.9
11	2012	146	148	294	7.2
12	2013	137	185	322	7.9
13	2014	142	162	304	7.4
Panel B Total		1,808	2,290	4,098	
Percent		44.1	55.9		100.0
Panels A and B Total		2,352	2,889	5,241	
Percent		44.9	55.1		100.0

Reporting of discontinued operations is not distributed evenly across industries. Table 2 depicts the observations by industry representation. The industry with the most observations is Durable Manufacturers (925 observations, 17.7 percent) and the next is Insurance and Real Estate (679 observations, 13.0 percent). The industry segment with the fewest observations is Other (33 observations, 0.6 percent), and the second fewest is Agriculture (35 observations, 0.7 percent).

The distribution of observations by credit rating (Table 3) reveals that most are clustered in the middle of the credit ratings, primarily the B-range of credit ratings from the numerical sequencing of seven through fifteen. Relatively few firms are found in the highest ratings, the A-range above numerical equivalent 15, and fewer still are found below the numerical equivalent of seven, the C-range and D. This distribution is comparable to that of all U.S. issuers. The number of AAA-rated companies has fallen to two in 2016 (Exxon & Microsoft). Our 26 year dataset includes 22 AAA-rated observations.

TABLE 2
Industry Classification of Sample Firms

Industry No.	Observations by Industry	%	Industry	Primary SIC codes
1	35	0.7	Agriculture	1-999
2	253	4.8	Chemicals	2800-2824, 2840-2899
3	210	4.0	Computers	7370-7379, 3570-3579 and 3670-3679
4	925	17.7	Durable Manufacturers	3000-3999, excluding 3570-3579 and 3670-3679
5	267	5.1	Extractive Industries	2900-2999, 1300-1399
6	371	7.1	Financial Institutions	6000-6499
7	149	2.8	Food	2000-2111
8	679	13.0	Insurance and Real Estate	6500-6999
9	137	2.6	Mining and Construction	1000-1999, excluding 1300-1399
10	33	0.6	Other	9000 and above
11	96	1.8	Pharmaceuticals	2830-2836
12	470	9.0	Retail	5000-5999
13	491	9.4	Services	7000-8999, excluding 7370-7379
14	284	5.4	Textiles and Printing	2200-2790
15	332	6.3	Transportation	4000-4899
16	509	9.7	Utilities	4900-4999
Total	5,241	100.0		

This classification uses Compustat data item Standard Industrial Classification – Historical (*sich*).

Research Design

The regression equation used to test the study's hypothesis is as follows:

$$\text{CREDITRATING}_{i,t+4} = \delta_0 + \delta_1 \text{DOAT}_{i,t} + \delta_2 \text{LEV}_{i,t} + \delta_3 \text{ROA}_{i,t} + \delta_4 \text{CVRATIO}_{i,t} + \delta_5 \text{LOGAT}_{i,t} + \delta_6 \text{LIQ}_{i,t} + \delta \text{Industry Fixed Effects}_{i,t} + \varepsilon_{i,t} \quad (1)$$

The dependent variable, CREDITRATING, is the Standard and Poor's long term domestic credit rating (Compustat data item *splticrm*), converted from letter grades to numerical equivalents consistent with Ayers (2016). To provide sufficient time for a firm's credit rating to reflect the financial reporting of the most recent fiscal year-end, CREDITRATING is measured four months after the date of each observation's fiscal year-end.

DOAT, the variable of interest, is constructed as discontinued operations (Compustat data item *do*) divided by total assets (Compustat data item *at*), which can be reported as a gain or a loss. A significant coefficient on DOAT suggests that the credit rating agencies perceive gains and losses from discontinued operations to have some measure of persistence.

TABLE 3
Numerical Equivalents of Standard & Poor's Domestic Long-term
Issuer Credit Rating (Compustat data item *splticrm*)

Credit Rating	Numerical Equivalent	Loss Firms	Gain Firms	Total	Percentage
AAA	22	6	25	31	0.6
AA+	21	7	3	10	0.2
AA	20	22	40	62	1.2
AA-	19	10	38	48	0.9
A+	18	53	84	137	2.6
A	17	133	200	333	6.4
A-	16	158	197	355	6.8
BBB+	15	207	349	556	10.6
BBB	14	331	540	871	16.6
BBB-	13	266	391	657	12.6
BB+	12	146	201	347	6.6
BB	11	219	208	427	8.2
BB-	10	271	207	478	9.1
B+	9	233	216	449	8.6
B	8	148	118	266	5.1
B-	7	99	51	150	2.9
CCC+	6	17	11	28	0.5
CCC	5	13	4	17	0.3
CCC-	4	2	1	3	0.1
CC	3	2	1	3	0.1
C	2	0	0	0	0.0
D	1	5	4	9	0.6
Total		2,348	2,889	5,237*	
Percent		44.8	55.2		100.0

*Four fewer firms reporting credit ratings (5,237) in Table 3 than the number of firms reported in Tables 1 and 2 due to four missing credit ratings observations among loss firms.

Several control variables are included in the regression equation intended to proxy for risk. A firm's leverage, LEV, is calculated as long-term debt (Compustat data item *dltt*) divided by total

assets. This variable is expected to have a negative coefficient since higher leverage is expected to negatively impact a firm's credit rating. ROA, return on assets, calculated as net income (Compustat data item *ni*) less special items (Compustat data item *sp*) divided by total assets (Compustat data item *at*). The coefficient for ROA is expected to be positive; favorable operating performance positively impacts credit ratings. The interest coverage ratio, CVRATIO, is earnings before interest and taxes (Compustat data item *ebit*) divided by interest expense (Compustat data item *xint*). The coefficient on CVRATIO is expected to be positive since a higher coverage ratio represents a better ability to meet interest payments. LOGAT is the log of total assets. A positive coefficient is expected since larger firms tend to be less risky. Liquidity, LIQ, is measured as cash flows from operating activities (Compustat data item *oancf*) divided by total liabilities (Compustat data item *lt*). LIQ is expected to have a positive coefficient as greater liquidity suggests lower risk.

In addition, to control for industry-specific fixed effects, the variable INDUSTRY is included (Barth, Beaver, and Landsman 1998; Easton and Pae 2004). A value of zero or one is assigned depending on the industry in which the firm is classified based on its single-digit SIC code (Compustat data item *sich*). Variable definitions are summarized in Table 4.

TABLE 4
Definition of dependent and independent variables used in the regression model
in terms of Compustat data items shown in (*italics*)

Variable	Definition
CREDITRATING	Standard & Poor's Domestic Long-term Issuer Credit Rating (<i>spltrm</i>), converted from letter grades to numerical equivalents. To provide sufficient time for a firm's credit rating to reflect the financial reporting of the most recent fiscal year-end, it is measured four months after the date of each observation's fiscal year end.
DOAT	Discontinued Operations (<i>do</i>) divided by total assets (<i>at</i>).
LEV	Leverage Ratio is long-term debt (<i>dltt</i>) divided by total assets (<i>at</i>).
ROA	Return on Assets is net income (<i>ni</i>) less special items (<i>sp</i>) divided by total assets (<i>at</i>).
CVRATIO	Interest Coverage Ratio is earnings before interest and taxes (<i>ebit</i>) divided by interest expense (<i>xint</i>).
LOGAT	Natural log of total assets (<i>at</i>).
LIQ	Liquidity is cash flows from operating activities (<i>oancf</i>) divided by total liabilities (<i>lt</i>).

Four regressions are estimated. For both the pre-SFAS No. 144 years (1989 - 2001) and SFAS No. 144 years (2002 – 2014), two regressions are estimated for each time period. Within each time period a regression is estimated for both loss firms and gain firms.

RESULTS

Descriptive statistics of variables included in the regression equation are presented in Table 5. As depicted, in the pre-SFAS No. 144 period CREDIT_RATING was higher than in the SFAS No. 144 period (mean 13.79 versus 12.53, difference of 1.26, $p < 0.001$). This translates to an average credit rating of between BB (11) and BB+ (12), suggesting that the difference between the two periods lacks economic significance.

The mean for the variable of interest, DISCO, does not provide meaningful information since the values of the observations can be both negative and positive. Positive values for both Pre-SFAS 144 and SFAS 144 periods is expected since there are more firms reporting a positive amount of discontinued operations rather than a negative amount.

TABLE 5
Descriptive Statistics of Variables Used in the Regression Equation

Variable	Mean Pre-SFAS 144 Period (n = 1,143)	Mean SFAS 144 Period (n = 4,098)	Difference (t-value)	
CREDITRATING	13.79	12.53	1.26 (11.96)	***
DISCO	0.05	0.12	-0.07 (-2.09)	*
LEV	0.27	0.32	-0.05 (-8.05)	***
ROA	0.02	0.03	-0.01 (-1.57)	
CVRATIO	4.68	6.88	-2.20 (-2.17)	*
LOGAT	7.98	8.61	-0.63 (-12.74)	***
LIQ	0.12	0.14	-0.02 (-2.90)	**

Variable definitions are shown in Table 4.

For the pre-FASB 144 period n = 1,143 except for CREDITRATING where n = 1,139. For the FASB 144 period n = 4,098, except for LIQ which 4,097.

* Statistical significance at $p < 0.05$.

** Statistical significance at $p < 0.01$.

*** Statistical significance at $p < 0.001$.

Table 5 shows that relative to those in the APB 30 period, companies in the SFAS 144 period were more leveraged ($p < 0.001$), had a higher interest coverage ratio ($p < 0.05$), were larger in terms of total assets ($p < 0.001$) and had greater liquidity ($p < 0.01$). There was no significant difference in return on assets of the two groups.

Results of four estimated regression equations are presented in Table 6. The regressions presented are both loss and gain firms for Pre-SFAS 144 years, 1989-2001 and the loss and gain firms for SFAS 144 years, 2002-2014. For each regression the control variables are significant and the signs are in the expected direction. The variable for leverage, LEV, has a negative coefficient while the variables, ROA, CVRATIO, LOGAT and LIQ all have positive coefficients.

As depicted in Table 6, in the pre-SFAS No. 144 period for loss firms the coefficient on DOAT is not significant ($\alpha_1 = 0.0271$, $t = 0.01$). The coefficients on industry fixed effects variables (not tabulated) were not significant for any industries. For gain firms in the pre-FASB 144 years, the DOAT coefficient is significant and negative ($\alpha_1 = -12.5351$, $t = -0.485$). The negative sign suggests that disposing of a profitable operation is associated with a lower credit rating. In both regressions, the coefficients on industry fixed effects variables (not tabulated) were insignificant for all industries.

The following model is used to test both Loss and Gain Firms for Pre-SFAS No. 144 and SFAS No. 144 periods: $\text{CREDITRATING}_{i,t+4} = \delta_0 + \delta_1 \text{DOAT}_{i,t} + \delta_2 \text{LEV}_{i,t} + \delta_3 \text{ROA}_{i,t} + \delta_4 \text{CVRATIO}_{i,t} + \delta_5 \text{LOGAT}_{i,t} + \delta_6 \text{LIQ}_{i,t} + \epsilon_{i,t}$					
Independent Variables	Predicted Sign	Pre-SFAS No. 144, 1989--2001		SFAS No. 144, 2002--2014	
		Loss Firms Coefficient (t-value)	Gain Coefficient (t-value)	Loss Coefficient (t-value)	Gain Firms Coefficient (t-value)
Intercept	+	5.4776 ^{***} (3.66)	6.4534 ^{***} (5.14)	0.1607 (0.21)	2.7259 ^{***} (4.64)
DOAT	+	0.0271 (0.01)	-12.5351 ^{***} (-4.85)	-3.0517 (-0.84)	-13.1334 ^{***} (-5.9)
LEV	-	-3.6176 ^{***} (-4.48)	-5.4951 ^{***} (-7.00)	-3.0094 ^{***} (-8.2)	-3.5957 ^{***} (-10.5)
ROA	+	4.2256 [*] (2.57)	8.9225 ^{***} (5.07)	8.0343 ^{***} (9.65)	10.9200 ^{***} (12.28)
CVRATIO	+	0.1885 ^{***} (5.92)	0.0902 ^{***} (4.23)	0.0324 ^{***} (4.89)	0.0361 ^{***} (5.39)
LOGAT	+	0.9431 ^{***} (12.52)	0.9615 ^{***} (12.93)	1.1340 ^{***} (30.21)	1.0406 ^{***} (30.93)
LIQ	+	5.6058 ^{***} (5.33)	3.2948 ^{***} (3.77)	4.7220 ^{***} (8.52)	3.6402 ^{***} (6.96)
Total observations used		540	599	1,808	2,290
Adjusted R ²		57.77	56.21	59.08	55.53

Variable definitions are shown in Table 4.
* Statistical significance at $p < 0.05$; ** Statistical significance at $p < 0.01$; *** Statistical significance at $p < 0.001$.

For FASB 144 years where a loss is reported DOAT ($\alpha_1 = -3.0517$, $t = -0.84$) is not significant. However, for gain firms DOAT is significant at the $p < 0.001$ level ($\alpha_1 = -13.1334$, $t = -5.90$) and has a negative sign. Also, the Extractive Industries, Financial Institutions, Food, Retail and Services were not significant, but the remaining industries were significant. In the regression that included only companies reporting gains the coefficients on industry fixed effects variables (not tabulated) are all significant except for Extractive Industries.

The regression results show that for both pre-SFAS 144 years and SFAS 144 years the reported losses from discontinued operations are not associated with credit ratings but that reported gains are associated with credit ratings. Furthermore, reported gains are *negatively* associated with credit ratings. A possible explanation for this is that when firms dispose of profitable operations, credit rating firms see a potential loss of future income and therefore a lower credit rating.

CONCLUSIONS

We investigated whether there is an association between the reported gains and losses from discontinued operations and the respective companies' credit ratings. In addition, we examined whether any such associations changed from the period when APB 30 was the standard versus the period when SFAS No. 144 was the standard. Our results suggest that under both APB No. 30 and SFAS No. 144, for companies reporting losses from discontinued operations there was no association with their credit rating. However, for firms reported gains from discontinued operations there was a significant association. More precisely, the association was negative, suggesting that the reporting of a gain from discontinued operations is associated with a lower credit rating.

Like extraordinary items, discontinued operations may disappear altogether at some point in the future and there will be nothing left that requires special reporting below income from continuing operations. It might be that these items will be reported as a separate line item as part of income from continuing operations. If so, it will be left up to financial statement users to determine each item's persistence.

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