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Big bath, income smoothing, and special items: an empirical investigation

Abstract

The purpose of this study is to investigate if firms experiencing extreme earnings deviation are more likely than other firms to report income-decreasing special items, and if so, whether charges for special items under such circumstances are suggestive of earnings manipulation. It has been argued in the literature that firms reporting extreme negative earnings deviation from prior year are more likely than other firms to report charges related to special items to take an earnings bath and thus improve future profitability (Kinney and Trezevant, 1997). Similarly, it has been argued that management(s) of firms that experience an extreme positive earnings deviation from the prior year are likely to report charges related to special items in order to smooth earnings and lower investors' expectations about future earnings. The paper proposes and examines an alternative supposition: charges for special items, when taken, reflect reasoned responses to economic conditions and circumstances that firms face. The authors find results consistent with this notion. Firms that are larger, more in debt, experiencing losses and/or are subject to financial distress are more likely to report special items. Moreover, after controlling for these and other firm-specific economic differences, the likelihood of reporting special charges varies at the extremes, according to direction. Firms experiencing extreme negative earnings deviation are more likely to report these charges relative to firms in the non-extreme earnings deviation categories, whereas firms reporting extreme positive earnings deviation are not. The authors interpret these differences to suggest that (a) charges for special items do not always reflect earnings manipulation behavior; and (b) earnings manipulation, when it appears, may be context specific, e.g., when extreme negative deviations in earnings have occurred.

Keywords: income smoothing, earnings bath, special items.

JEL Classification: M41.

Introduction

The purpose of this paper is to examine whether firms that experience extreme earnings deviation from prior year are likely to report income-decreasing special items to manage investors' perception. Kinney and Trezevant (1997) document evidence that firms reporting an extreme earnings deviation from the prior year are more likely to report special items than other firms are. This is presumably due to management's desire to influence public perception. Specifically, Kinney and Trezevant (1997) divide their sample firms into different groups based on their earnings deviation from prior year. They find that the firms that report the most positive and the most negative earnings deviations are more likely to report negative special items compared to the firms that were not in the extreme earnings deviation groups. They reason that firms reporting the most positive earnings deviations smoothed earnings down to lower investors' expectations of future performance and firms with the most negative earnings deviations take an "earnings bath" to increase the chances of to report higher profits in future years.

However, Buckmaster (2001) notes that "*for smoothing behavior to be effective, it must be undetectable by those for whom the tactic is intended to affect*". Unlike some of the other means of managing earnings, charges related to special items are plainly visible on the income statement. Given that special items are easily detectable, why would management

use special items to manage earnings down? One possible explanation for prior findings is that the Kinney and Trezevant's study did not control for certain firm-specific conditions such as the level of debt, firm size, the ability to generate positive economic returns greater than the cost of equity capital, and condition of financial distress. Such conditions could be associated with the taking of special charges, and represent an alternative explanation predicated on the economics of the firm, as opposed to earnings manipulation. For example, if the sample firms in the extreme earnings deviation groups in the Kinney and Trezevant's study were experiencing financial distress or loss of profitability then the taking of special charges for such firms could be attributed to the economic characteristics such firms were experiencing. Similarly, firms with good opportunities to invest in wealth creating projects might be less predisposed to take special charges because they are better able to deploy resources effectively, thus reducing the risk of restructurings, impairments, and other actions leading to charges for special items. Therefore, we posit that firms experiencing the most earnings deviation are no more likely than other firms to report charges related to special items to smooth earnings, after controlling for the economic factors of the firms.

However, it may be that firms reporting the most negative earnings deviation are likely to strategically report these charges as part of an "earnings bath", because it is easy to justify the timing of these

charges when reporting earnings that are significantly lower than prior years' earnings. Such conditions create opportunities for management to borrow future costs and report them in the current year and to justify it as a corrective response to improve future performance, which in turn lowers the benchmark for future reported profitability. Similarly, firms with the most positive earnings deviation might be motivated to take special charges to reduce reported profitability and to smooth earnings, thus weakening expectations for sustained future profitability at extreme positive levels. There may also be certain agency costs mitigated by smoothing when conditions are extremely positive. Stakeholders, for example, other than shareholders, in particular, labor, and also creditors, may find that relatively lower reported residual income under such conditions reduces shareholders' claims on corporate assets and thus amounts to the creation of a reserve to reduce the risk of lower wages and/or credit default in the event that adverse conditions materialize later.

The two competing explanations are thus investigated in this research. This research employs a different research design from that of Kinney and Trezevant (1997) and examines whether firms with positive or negative extreme earnings deviations are more likely to report negative special items than are other firms after controlling for the firm-specific economic conditions. We find that, after controlling for firm-specific effects, special charges are significantly related only to firms with extremely negative earnings deviations. We interpret these results to suggest that special charges are at least partly explained by the economic circumstances of firms. In particular, earnings manipulation through the use of special charges, to the extent it occurs at all, probably only arises when firms are experiencing serious earnings declines.

1. Hypothesis development

Although there are specific authoritative guidelines on the types of disclosure and the amounts that can be written off, management determines the timing of the special charges. For example, one type of special item relates to asset impairment. Under current US GAAP, an asset can be written down if the book value of the asset is more than the sum of future cash flows which the asset is expected to generate. If the sum of future cash flows is less than the book value then the asset is written down to its fair value. However, it is management that estimates these expected future cash flows. Such discretion allows management to strategically lower the estimates of future cash flows when it might choose to write down the assets. Similarly, it is the management that determines the timing of restructuring charges, including costs for layoffs, closure of plants, and termination of unprofitable product lines.

Prior research has debated whether special items are used to manage earnings and meet analyst forecast earnings benchmarks or are instead informational about the economics in some manner (McVay, 2006; Riedl et al., 2010). Special items have played a primary role in increased earnings volatility, declining earnings persistence, and lower earnings quality over the last 40 years (Donelson et al., 2011). Most of the impact has been driven by an increase in negative special items (Johnson et al., 2011). Conservative accounting also appears associated with special items. Firms with more conservative accounting generally report less special items than firms with less conservative accounting (Ahmed et al., 2011). Conservatism has been argued to be a factor in mitigating agency problems (Watts, 2003). The implication is thus that the appearance of special items, generally, may signal unresolved agency issues and related problems with the corporate governance mechanism of firms.

Prior research suggests that special items may have different interpretations at the extremes (Atwood et al., 2010). Kinney and Trezevant (1997) identified two specific conditions when management is likely to report special items to manage investors' perceptions. One is when the firm reports an extreme positive deviation from the prior year's earnings and the other is when the firm reports an extreme negative deviation from the prior year's earnings. Kinney and Trezevant argue that these conditions create incentives for management to take either an "earnings bath" or to smooth earnings.

However, there are other factors that are likely to affect a management's decision in taking these charges. For instance, management is likely to take certain actions in response to the economic conditions with which the firm is faced. Such actions could be in response to current operating losses or to a current state of financial distress. These conditions might require management to make decisions that involve write-offs of assets, closure of plants, discontinuance of employment contracts and other actions necessary to streamline operations.

Certain firm-specific characteristics such as the level of debt, firm size and future growth options are also likely to affect management's decision in reporting these charges. A high level of debt is indicative of how close management is to violating debt covenants. Management of firms that have a high level of debt and that are close to violating debt covenants might have an incentive to sell nonproductive assets to increase reported income. Conversely, management of firms with low levels of debt are likely to enjoy greater latitude in reporting negative charges.

The decision to report these charges is also a function of the assets available to be written off. For instance, a small firm with low levels of inventory or receivables is unlikely to consider writing off these assets. Finally, a firm with greater wealth-creating investment options may be less likely to report negative special items. Such firms are more likely to deploy capital resources effectively, thus reducing the propensity to report special charges.

This study thus controls for the real economic factors that might affect management's decisions in taking special charges. It then examines whether, after controlling for these factors, firms that experience extreme earnings deviations are still likely to report income-decreasing special items, thus suggesting that earnings manipulation may, at least partly, motivate this accounting choice. Given that special items are visible on the income statement, we posit that management should not seek to use special items to manipulate earnings generally, e.g., to smooth earnings. However, it is conceivable that earnings manipulation is a direction-specific phenomenon. In particular, the management of firms that report the most negative earnings deviations might report charges related to special items to signal that important remedial change is underway, over and beyond what basic firm-specific economic factors can alone explain. On the other hand, the need for such a signal would not exist for extreme positive deviations from earnings. Thus the association of special items with extreme deviations in earnings might be direction specific, after controlling for other economic factors.

To examine this issue, we divided the sample into six groups based on the size of their earnings deviation. We then examined whether firms in the extreme earnings deviation groups were more likely to report these charges as compared to the groups in the non-extreme earnings deviation groups. The following hypotheses are examined, each stated in the null:

H1: Firms in the extreme positive earnings deviation are not more likely to report negative special items after controlling for real economic factors that are likely to affect management's decision to report these charges.

H2: Firms in the extreme negative earnings deviation are not more likely to report negative special items after controlling for factors that are likely to affect management's decision to report these charges.

2. Data and sample selection

The sample consisted of all publicly traded firms on AMEX, NYSE and NSADAQ for the period of 1992-1998. The period of 1992-1998 was chosen to avoid traumatic macroeconomic episodes that could drive

the taking of special items. For example, the period of 1999-2003 witnessed the collapse of the so-called ".com bubble", the economic disruptions around 9/11, and the numerous accounting improprieties and reporting misstatements, including ENRON, Worldcom, etc. The period of 2007-2010 saw the collapse of the market in mortgage backed securities, the onset of a severe financial crisis in the United States, and a global economic downturn. The sample was also restricted to firms that had information on all financial variables on COMPUSTAT database. Numerous industries were represented, including financial and insurance firms, industrials, service companies, retailers, and so forth. Companies on the COMPUSTAT database include those on all three major stock exchanges in the United States – NYSE, AMEX and NASDAQ. The data were winsorized for extreme observations in the distributional tails of each variable of interest. After applying the above filters, 23,921 firm-years remained to make up the final sample that was examined.

3. Research design

3.1. Research model.

Special items = f (firm-specific economic conditions, extreme earnings deviation)

Model 1:

$$SPL_{it} = \alpha_0 + \alpha_1 DEBT_{it} + \alpha_2 SIZE_{it} + \alpha_3 VALUE_{it} + \alpha_4 LOSS_{it} + \alpha_5 ZSCORE_{it} + \alpha_6 MAXDECR.$$

Model 2:

$$SPL_{it} = \alpha_0 + \alpha_1 DEBT_{it} + \alpha_2 SIZE_{it} + \alpha_3 VALUE_{it} + \alpha_4 LOSS_{it} + \alpha_5 ZSCORE_{it} + \alpha_6 MAXINCR,$$

where $SPL = 1$ if the firm i takes income-decreasing special items in year t ; 0 otherwise; $DEBT$ is the long-term debt/total assets; $SIZE$ is measured as log of market value of equity; $VALUE$ is the wealth-creating investment opportunity set, proxied by market-to-book value of equity; $LOSS = 1$ if income before special items is less than zero; 0 otherwise; $ZSCORE = 1$ if the Altman Z score is 1.81 or less; 0 otherwise; $MAXDECR = 1$ if the firm was in the extreme positive earnings deviation; 0 otherwise; $MAXINCR = 1$ if the firm was in extreme negative earnings deviation; 0 otherwise.

3.2. Measurement of variables. *3.2.1. Special items.* The dichotomous dependent variable is coded one if the firm reports charges related to special items, otherwise zero. Consistent with Kinney and Trezevant, all types of negative special items are included in the analysis.

3.2.2. Earnings deviation categories. Similar to Kinney and Trezevant, this study measures deviation in current earnings as, earnings before special

items (net of tax)¹ minus prior year's earnings before extraordinary items, divided by total assets at the end of current year. The sample was divided into six groups based on the size of the deviations in current earnings. If the sample firms were in the group with most negative earnings deviation, the independent variable, *MAXDECR*, was coded one. If the sample firms were in any other groups (except the group with most positive earnings deviation), *MAXDECR* was set equal to zero. If the sample firms were in the group with most positive earnings deviation, the independent variable, *MAXINCR*, was set equal to one. If the sample firms were in any other groups (except the group with most negative earnings deviation), *MAXINCR* was set equal to zero.

3.2.3. Proxies for economic conditions of the firms.

Two proxies were used to control for firm-specific economic conditions: a dummy variable to denote profit/loss before special items (*LOSS*), and a dummy variable to denote if the firm was in financial distress (*ZSCORE*)². Specifically, if the earnings before special items were less than zero, *LOSS* was coded one; otherwise zero. The *ZSCORE* was coded one if the Altman Z-score indicated that the firm was in distress; otherwise it was set equal to zero.

3.2.4. *Firm characteristics.* Consistent with DeFond (1992) and Craswell et al. (1995), debt (*DEBT*) was measured as long term debt divided by total assets. I measure the size of the firm as log of market value of equity (*SIZE*) and the opportunity set of wealth-creating investment available to the firm (*VALUE*) as market-to-book value of equity³.

4. Results

4.1. Descriptive statistics and correlation analysis.

Table 2 presents means on variables of interest for the group of firms reporting negative special items and the group of firms that do not report special items. As indicated in Table 1 (see Appendix), firms reporting negative special items are significantly larger in size and have higher levels of debt. Table 3 (see Appendix), presents means on variables of interest, for all six earnings deviation categories. Firms in the two extreme earnings deviation category are relatively smaller in size compared to firms in four non-extreme categories. The mean income before special items for the group of firms

experiencing most extreme negative earnings deviation, is negative which suggests that these groups of firms are generally not performing well.

Table 4 (see Appendix) presents both Pearson and Spearman coefficients of correlation between predictor variables. Most of the correlations, while significant, are quite small, suggesting that collinearity, at least in the linear, bi-variate sense, is not problematic. Firms that are smaller in size appear to be less profitable and more likely to be in distress.

4.2. **Results on economic conditions.** Table 5 (see Appendix) presents the results of the logistic regressions for both models. Both Column 2 and Column 3 of Table 5 indicate that the likelihood of management reporting charges related to special items is positively related to the existence of negative earnings before special items and also the firm being in financial distress. These results indicate that the likelihood of the firm reporting these charges is at least partially explained by adverse economic circumstances of the firm, when they exist.

4.3. **Results on firm characteristics.** The results in Table 5 document that firms in our sample with higher debt are more likely to opt for income-decreasing special items. As stated earlier, firms with greater debt may have greater constraints via debt covenants and other governance mechanisms associated with debt. As a result the propensity to write off troubled assets should be greater. For similar, reasons, firm size is also positively related to the likelihood of the management reporting charges related to special items. Larger firms have arguably stronger control mechanisms, and generally more flexibility with respect to asset disposal, compared to smaller firms. On the other hand, for the opportunity set of wealth creating investment opportunities (*VALUE*), the results are mixed. They are marginally significantly associated with special items in model 1, but not model 2. We speculate that the two model variables that capture deviations in earnings, *MAXDECR* and *MAXINCR*, may be capturing most, if not all, of the association with special items that may be driven by the opportunity (or lack of opportunity) for value creation through investment of capital resources.

4.4. ***MAXDECR* and “earnings bath”.** Column 2 of Table 5 indicates that even after controlling for economic conditions of the firm, firms in the extreme negative earnings group are still significantly more likely to report these charges compared to the group of firms that are not in the extreme earnings categories. These results support the notion that earnings management is at work in these firms. It is, for example, consistent with Kinney and Trezvant's assertion that managements of these firms are more likely to report these charges in the year of extreme earnings deviation to take an “earnings

¹ A tax rate of 36 percent was assumed for all firms.

² The Z score was used to determine whether the firm is in distress. If the Z score was 1.8 or less, the firm was deemed to be in distress.

³ Equilibrium firms expect a return equal to the cost of capital. In that event, shareholder wealth should be valued at book value. A firm's value will be greater than book value when a firm can generate wealth to shareholders by making investments at a rate of return that exceeds the cost of capital. Such a phenomenon implies the existence of significant value-enhancing opportunities for the utilization of capital resources.

bath". As can be noted in Table 2, firms in the extreme earnings category are also loss-reporting firms. Given the prevalent bias in favor of conservatism in earnings, it is possible that management of these firms find it easier to justify these charges as a corrective response to improve future profitability. When firms are challenged by poor or negative profitability, there may also be reporting incentives that arise only under such conditions to signal that remedial action is underway. By doing so important stakeholders, including creditors, suppliers, customers, and so forth, are informed that the firm is making corrections and that their interests are being protected. As a result of this signaling, creditors are more likely to be flexible, customers more willing to buy, especially durable products with long lives that may need future servicing, and suppliers will be more likely to continue to extend credit and supply inventory. The prospects for survival of the firm, and improvement in its competitive position, are thus enhanced by the special items signal.

4.5. MAXINCR and income smoothing. On the other hand, the last column of Table 5 indicates that after controlling for the economic conditions of the firms, firms in the extreme positive earnings deviation are not significantly more likely to report special items. The results suggest that earnings manipulation, when it arises, may be very context specific. When firms with most positive earnings deviation report charges related to special items, it is difficult for management to justify these charges. Furthermore, there is no value to an earnings-based signal of remedial change when things are going well.

4.6. Audit quality and "earnings bath". Differences in the quality of auditing across our firms might account for part, or all, of the significant results that we report. Firms doing very well might be under little pressure from auditors to report charges for special items. On the other hand, firms that are experiencing earnings trouble, by virtue of the increased risk of litigation should significantly arise shareholder wealth losses, may be under much stronger pressure from auditors to report conservatively. Thus, the significant findings that we report for firms with extreme negative earnings deviations may be driven by pressure from monitors, as opposed to managerial efforts to manipulate earnings, e.g., to signal the onset of remedial action. Thus, as a check for robustness, we ran a final test on Model 1, where significant results are obtained. We included a variable, Big Six Auditor, to control for the monitoring effect. Numerous studies assume that if a Big Six audit firm performs the audit then the audit performed is of a higher quality as opposed to an audit performed by a non-Big Six firm (e.g., Becker, DeFond, Jiambalvo and Subramanyam,

1998). It is often argued in the literature that Big Six audit firms provide a higher quality of audit because they have better resources to perform a thorough audit. In addition, as a result of their large and diverse client base, they have arguably greater financial independence. Big Six audit firms are considered to have "deep pockets" and face a greater risk of lawsuit for performing a low quality audit as compared to smaller audit firms. Table 6 presents the results with the inclusion of controls for audit quality. Specifically, if the auditor was a Big Six auditor, *AUD_QUAL* was coded one; otherwise zero. As can be noted in Table 6, the coefficient of *AUD_QUAL* is positive which indicates that the clients of Big Six firms are more likely to report these charges. St. Pierre and Anderson (1984) find that the auditors are more likely to be sued for overstatement of assets and income than for understatement of assets and income. The positive coefficient on *AUD_QUAL* is indicative of conservatism on the part of Big Six auditors. However, the negative coefficient on the interaction term between *MAX_DECR* and *AUD_QUAL* is negative, suggesting that auditors do not encourage, and may even mitigate, the use of charges for special items when firms are performing poorly. In any event, differences in audit quality do not account for the results we report, suggesting that, to the extent charges for special items are unrelated to economic phenomena, and thus potentially manipulative, such manipulation is not the result of monitoring pressure and thus must be primarily sourced in managerial discretion and motives.

Conclusions

The purpose of this study was to examine if management of firms reporting extreme earnings deviation is likely to report income-decreasing special items. The results suggest that income-decreasing special items are typically taken in response to certain economic conditions and circumstances which the firm faces. However, the results also indicate that when firms report extreme negative earnings deviation they are still likely to report these charges, even after accounting for such circumstances. We speculate that, in the wake of poor earnings performance, managers may be motivated to send a signal that remedial action is underway. On the other hand, and contrary to prior research, our study, after accounting for economic conditions and circumstances, does not find any association between positive earnings deviations and the taking of charges for special items. Future studies could explore if the propensity to take charges for special items is mitigated by the presence of sophisticated investors in the corporate structure or by the presence of other corporate governance mechanisms, including outsider directors on boards, industry specialist auditors, institutional equity stakeholders, and so forth.

References

1. Ahmed, Anwer and Scott Duellman (2011). "Evidence on the Role of Accounting Conservatism in Monitoring Managers' Investment Decisions", *Accounting and Finance*, 51 (3), p. 609.
2. Atwood, T.J., and Hong Xie (2011). "The Market Mispricing of Special Items and Accruals: One Anomaly or Two? *Review of Accounting and Finance*, 9 (2), p. 156.
3. Becker, Connie L., Mark L. DeFond, Jiambalvo, James and Subramanyam, K.R. (1998). "The effect of audit quality on earnings management", *Contemporary Accounting Research*, Spring, pp. 1-24.
4. Craswell, A.T., J.R. Francis, and S.L Taylor (1995). "Auditor brand name reputations and industry specializations", *Journal of Accounting and Economics*, 20, pp. 297-322.
5. DeFond, M.L. (1992). "The association between changes in client firm agency costs and auditor switching", *Auditing: A Journal of Practice and Theory*, 11 (1), pp. 16-31.
6. Donelson, Dain, Ross Jennings, and John McInnis (2011). "Changes Over Time in The Revenue-Expense Relation: Accounting or Economics?" *The Accounting Review*, 86 (3), pp. 945-975.
7. Kinney, Michael and Robert Trezevant (1997), "The Use of Special Items to Manage Earnings and Perceptions", *The Journal of Financial Statement Analysis*, 2 (3) (Fall), pp. 45-53.
8. Johnson, Peter, Thomas Lopez, and Juan Sanchez (2011). "Special Items: A Descriptive Analysis, *Accounting Horizons*, 25 (3), pp 511-536.
9. McVay, Sarah (2006). Earnings Management Using Classification Shifting: An Examination of Core earnings and Special Items, *The Accounting Review*, 81 (3), pp. 501-532.
10. Riedl, Edward, and Suraj Srinivasan (2010). "Signaling Firm Performance Through Financial Statement Presentation: Special Items", *Contemporary Accounting Research*, 27 (1), p. 289.
11. St. Pierre, Kent, and Anderson, James (1984). "An Analysis of the factors associated with lawsuits and against public accountants", *Accounting Review*, 59, pp. 242-263.
12. Watts, Ross (2003). "Conservatism in Accounting Part I", *Accounting Horizons*, 17 (3), pp. 207-221.

Appendix

Table 1. Definitions of variables used

Variable	Definition
<i>SPL</i>	= 1 if the firm <i>i</i> takes income-decreasing special items in year <i>t</i> ; 0 otherwise.
<i>DEBT</i>	is a long term debt / total assets.
<i>SIZE</i>	is measured as log of market value of equity.
<i>GROWTH</i>	is a market-to-book value of equity.
<i>LOSS</i>	= 1 if income before special items is less than zero; 0 otherwise.
<i>ZSCORE</i>	= 1 if the Altman Z score is 1.81 or less; 0 otherwise.
<i>MAXDECR</i>	= 1 if the firm if the firm was in extreme negative earnings deviation; 0 otherwise.
<i>MAXINCR</i>	= 1 if the firm if the firm was in extreme negative earnings deviation; 0 otherwise.
<i>AUD_QUAL</i>	is if the firm if the auditor is Big Six auditor; 0 otherwise.
<i>AUD*MAXDECR</i>	is an interaction between <i>AUD_QUAL</i> and <i>MAXDECR</i> .

Table 2. Means and significance tests for firms reporting negative special items and firms not reporting special items

Variable	Firms not reporting special items (N = 16825)	Firms reporting negative special items (N = 7096)	Difference in means
Firm size (in millions \$)	1308.9	1606	-297.1***
<i>DEBT</i>	0.1536	0.1892	-0.036
<i>GROWTH</i>	4.1056	3.0892	1.0165

Note: All variables are defined as in Table 1.

Table 3. Descriptive data for the six earnings deviation category

	<i>MAXINCR</i>	GROUP 2	GROUP 3	GROUP 4	GROUP 5	<i>MAXDECR</i>
Size (in ml. \$)	586.26	1789.16	2271.85	2615.01	943.83	176.10
Income before special items	24.62	80.05	108.21	114.62	21.15	-11.38
<i>DEBT</i>	0.13	0.13	0.17	0.21	0.18	0.15
Mean earnings deviation	1.27	0.05	0.02	0.002	-0.04	-2.18
N	3986	3987	3987	3987	3987	3987

Note: All variables are defined as in Table 1.

Table 4. Correlations of predictor variables

	<i>DEBT</i>	<i>SIZE</i>	<i>GROWTH</i>	<i>LOSS</i>	<i>ZSCORE</i>
<i>DEBT</i>	1.00	0.0290 (0.0001)	-0.0002 (0.9709)	0.0256 (0.0001)	0.2604 (0.0001)
<i>SIZE</i>	0.1694 (0.0001)	1.00	0.0197 (0.0023)	-0.4005 (0.0001)	-0.2851 (0.0001)
<i>GROWTH</i>	-0.1285 (0.0001)	0.3652 (0.0001)	1.00	0.0088 (0.1728)	-0.0116 (0.0728)
<i>LOSS</i>	-0.0908 (0.0001)	-0.4081 (0.0001)	-0.0444 (0.0001)	1.00	0.4075 (0.0001)
<i>ZSCORE</i>	0.2513 (0.0001)	-0.2863 (0.0001)	-0.2204 (0.0001)	0.4075 (0.0001)	1.00

Note: All variables are defined as in Table 1. Pearson correlation coefficients are on the top (Prob > |r| under $H_0: \rho = 0$). Spearman correlation coefficients are on the bottom (Prob > |r| under $H_0: \rho = 0$). Significance levels are in parentheses.

Table 5. Estimated logistic regression models and goodness of fit statistics of the basic model

Sample size for firms reporting negative special items/not reporting special items	Model 1 6009/13926	Model 2 5349/14495
Predictor variables		
<i>Intercept</i>	-2.0228***	-2.0690***
<i>DEBT</i>	0.3307***	0.4294***
<i>SIZE</i>	0.1460***	0.1523***
<i>GROWTH</i>	-0.0009*	-0.0004
<i>LOSS</i>	0.7457***	0.7185***
<i>ZSCORE</i>	0.3157***	0.3098***
<i>MAXDECR</i>	0.3675***	
<i>MAXINCR</i>		0.0389
Model goodness of fit statistics		
C	0.643	0.628
-2logL	23408.768	23648.722
χ^2 for covariates	994.4942	716.8507

Note: *** = significant at the .0001 level; ** = significant at the .05 level; * = significant at the .10 level. All variables are defined as in Table 1.

Model 1: $SPL_{it} = \alpha_0 + \alpha_1 DEBT_{it} + \alpha_2 SIZE_{it} + \alpha_3 GROWTH_{it} + \alpha_4 LOSS_{it} + \alpha_5 ZSCORE_{it} + \alpha_6 MAXDECR$.

Model 2: $SPL_{it} = \alpha_0 + \alpha_1 DEBT_{it} + \alpha_2 SIZE_{it} + \alpha_3 GROWTH_{it} + \alpha_4 LOSS_{it} + \alpha_5 ZSCORE_{it} + \alpha_6 MAXINCR$.

Table 6. Estimated logistic regression model examining the association between the firms reporting negative special items and audit quality

Sample size for firms reporting negative special items/not reporting special items	6009/13926
Predictor variables	
<i>Intercept</i>	-2.1853***
<i>DEBT</i>	0.3193***
<i>SIZE</i>	0.1356***
<i>GROWTH</i>	-0.0009*
<i>LOSS</i>	0.7494***
<i>ZSCORE</i>	0.3163***
<i>MAXDECR</i>	0.5454***
<i>AUD_QUAL</i>	0.2491***
<i>AUD*MAXDECR</i>	-0.2250**
Model goodness of fit statistics	
C	0.644
-2logL	23391.178
χ^2 for covariates	1012.0839

Note: *** = significant at the .0001 level; ** = significant at the .05 level; * = significant at the .10 level. All variables are defined as in Table 1.

Model: $SPL_{it} = \alpha_0 + \alpha_1 DEBT_{it} + \alpha_2 SIZE_{it} + \alpha_3 GROWTH_{it} + \alpha_4 LOSS_{it} + \alpha_5 ZSCORE_{it} + \alpha_6 MAXDECR + \alpha_7 AUD_QUAL_{it} + \alpha_8 AUD_MAXDECR_{it}$.