
Are Off-Balance Sheet Obligations Associated with Audit Fees?

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AUDIT FEES?**

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Abstract

The role of off-balance sheet liabilities and auditors' failure in uncovering them has received much attention in the wake of the recent accounting scandals. This study examines the association between audit fees and two types of off-balance sheet obligations – operating leases and pensions obligations. We find that both pensions and lease obligations are associated with audit fees. We interpret these results as evidence that unrecognized pension and lease obligations represent inherent risk and could potentially increase the risk of misstated financial statements and thus, call for increased attention and effort on the part of the auditor and therefore, audit fees are higher.

1. Introduction

The role of off-balance sheet liabilities and auditors' failure in uncovering them has received much attention in the wake of Andersen-Enron affair (Benston and Hartgraves 2002). In addition to Enron, off-balance sheet obligations played a role in the downfall of Adelphia Communications, one of the largest investor frauds in history (Gallagher 2003).¹ The objective of this study is to examine whether auditors price abnormal off-balance sheet obligations. We examine two types of off-balance sheet obligations – operating leases and pensions obligations. We focus on these obligations because they are pervasive, often significant, and well-understood by auditors relative to other types of off-balance sheet arrangements. Further, data on pensions and operating leases are available electronically so our strategy could potentially lead to a large sample.

Our study is motivated by several reasons. While perceptions of equity and bond markets toward off-balance sheet obligations have been examined extensively (Harper et al. 1987 and 1991; Imhoff et al. 1993; Gopalakrishnan 1994; Ely 1995; Davis-Friday

1999; and Sengupta and Wang 2005), there is limited empirical evidence on whether and how auditors use off-balance sheet information.² An examination of audit pricing has certain advantages over the examination of equity or bond pricing. The notion of market efficiency complicates the interpretation of tests of equity markets as the tests are often a joint test of market efficiency and the information content of disclosures. This is less of a concern with audit markets. Also, unlike auditors who are a fairly homogeneous group, equity and bond markets represent participants with varying degrees of information and sophistication (individual investors, institutional investors, and others). Finally, the recent accounting scandals have highlighted the role of auditors in detecting hidden financial risks of client firms and thus, examining the relation between off-balance sheet obligations and audit fees could contribute to our understanding of auditors' decision-making process and response regarding potential risks associated with off-balance sheet liabilities.

Auditors are expected to use information about off-balance sheet obligations at least for two reasons. First, holding other things constant, firms with off-balance sheet obligations are more difficult to audit relative to firms without such obligations. In other words, inherent risk, a component of overall audit risk is likely to be higher for firms with greater off-balance sheet obligations and thus, the risk of audit failure increases with off-balance sheet obligations. Further, as seen from the recent accounting scandals, the risk of litigation against auditors and the consequential harm to auditors' reputation capital provide the incentives for auditors to carefully consider information about off-balance sheet obligations. Second, while the risk of unrecorded liabilities, i.e., a balance sheet focus is important to the auditor, off-balance sheet obligations are also relevant from an

earnings quality perspective. For example, Imhoff et al. (1993) provide evidence that for the airline industry where operating leases are commonly used, the median reduction in net income due to capitalization of operating leases is 22 percent. In a later study, Imhoff et al. (1997) conclude that for firms with significant operating lease commitments, the effects of capitalizing operating leases will usually result in a decline in a firm's ROE. In other words, when leases are not capitalized, current period performance appears to be overstated. This is consistent with Ge (2006) who finds that increases in operating lease activities lead to lower future earnings, after controlling for current earnings. In short, off-balance sheet obligations have implications for assessing a client's solvency, ability to continue as a going-concern, and earnings quality.

Our sample consists of more than 12,000 client observations representing years 2000 through 2004. We measure off-balance sheet pension and operating lease obligations as deviations from industry means. Our audit fee model controls for a variety of firm characteristics such as, size, complexity, debt, financial statement components (inventory and accounts receivable), performance, growth, auditor type, and other factors.

There are several key findings. Among the control variables, debt and other liabilities exhibit the largest association with audit fees. When pensions and operating leases are included individually, in the pooled model as well as in yearly specifications, both off-balance sheet pension and operating lease obligations are positive and statistically significant and the coefficients are fairly large but smaller than the coefficients on debt and other liabilities. This suggests that recognized obligations appear to have a greater impact on audit fees than disclosed obligations. When the off-

balance sheet pension and operating leases are included in the same model, both continue to be positive and significant and pension obligations have a greater impact on audit fees than operating lease obligations.

Overall, we interpret these results as evidence that unrecognized pension and lease obligations represent inherent risk and could potentially increase the risk of misstated financial statements and thus, call for increased attention and effort on the part of the auditor and therefore, audit fees are higher. We perform several sensitivity checks one of which is to examine whether auditors are likely to issue a going-concern qualification for clients with off-balance sheet obligations. We find that going-concern opinions are significantly associated with operating lease obligations but not off-balance sheet pension obligations. We also estimated the audit fee model separately for each of the Big 5 auditor and find that neither off-balance sheet pension obligations nor operating lease obligations is significant for clients of Arthur Andersen. For other brand-name auditors, operating leases are significant in all cases and pension obligations are significant for Deloitte & Touche, Ernst & Young, and PricewaterhouseCoopers.

We make two contributions. First, we contribute to the literature on audit pricing by providing empirical evidence that off-balance sheet obligations are indeed priced by auditors. One implication of this finding is that firms that engage in off-balance sheet activities face some additional costs – higher audit fees and a likely going-concern opinion particularly for firms with significant operating leases. Second, we contribute to the literature on recognition *vs.* disclosure in financial reporting. While prior research primarily examined investor or lender perceptions of off-balance sheet obligations, we

provide empirical evidence on how auditors treat two commonly employed off-balance sheet obligations relative to recognized obligations. Our findings suggest that recognized obligations and off-balance sheet obligations have different impact audit pricing.

The rest of this paper is organized as follows. The next section develops the hypotheses and describes the empirical models. Sample selection process is discussed in section three. Results are in section four followed by conclusions.

2. Hypotheses and Empirical Models

While there are several types of off-balance sheet financing that firms could employ, pensions and operating leases are the two commonly used off-balance sheet activities. *Business Week* reports that off-balance sheet lease obligations alone for all public companies are about \$1.25 trillion (Byrnes 2006). Ge (2006) states that 80 percent of U.S. companies lease some or all of the equipment and operating lease liabilities in 2004 accounted for nearly 40 percent of total fixed claims compared to less than two percent for capital lease obligations. Gullapalli (2005) notes that off-balance sheet pension obligations for two hundred companies reviewed by the SEC is \$535 billion. Further, at the firm level these unrecorded obligations can be material. Consider the following examples. For 2003, Walgreen Co. had no debt on its balance sheet but had \$19.3 billion in operating leases (Weil 2004). Similarly, Ford and General Motors have underfunded their pension and retirement obligations by \$45 billion and \$69 billion, respectively (CFO.com 2006).

The growing size of unrecorded pension and lease obligations has important implications for the auditor. From the balance sheet stand point, firms with off-balance

sheet obligations are more difficult to audit and demand additional effort and attention relative to firms without such obligations. For example, Ge (2006) finds that firms with greater changes in off-balance sheet lease activities experience greater changes in on-balance sheet accruals and external financing. Thus, inherent risk, the perceived level of risk that financial statements could be materially misstated in the absence of internal control procedures is likely to be higher for firms with greater off-balance sheet obligations and thus, auditors could perceive that off-balance sheet obligations contribute to the risk of audit failure. The role of off-balance sheet liabilities that led to the eventual demise of the client firm is evident from the recent accounting scandals.³ The notion that off-balance sheet obligations reflect audit risk is also supported by the professional literature. *Statement of Auditing Standard No. 59* provides guidance on factors that an auditor should consider in issuing a going-concern opinion (AICPA 1988). These factors include liquidity, debt capacity and other financing problems.⁴

Prior research on investor perceptions of leases and pensions also indicate that both types of obligations are associated with equity risk (Dhaliwal 1986; Imhoff et al. 1993; and Ely 1995). Further, Lim et al. (2003) show that capitalization of operating leases increases effective leverage, reduces interest coverage, and decreases the funds from operation-to-debt, indicating that non-capitalization understates risk. Similarly, Sengupta and Wang (2005) find that firms with greater off-balance sheet debt arising from operating leases and underfunded postretirement benefit plans are found to be associated with inferior bond ratings and higher bond yields.

Off-balance sheet obligations are also relevant for assessing earnings quality. Imhoff et al. (1993) provide evidence that for the airline industry where operating leases are commonly used, the median reduction in net income due to capitalization of operating leases is 22 percent. In a later study, Imhoff et al. (1997) conclude that for firms with significant operating lease commitments, the effects of capitalizing operating leases will usually result in a decline in a firm's ROE. In other words, by not capitalizing leases, i.e., keeping them off-balance sheet, current period performance appears to be overstated. This is consistent with Ge (2006) who finds that increases in operating lease activities lead to lower earnings persistence and lower future stock returns. In short, off-balance sheet obligations have implications for assessing a client's hidden financial risks, solvency, ability to continue as a going-concern, and earnings quality.

Finally, mitigating the risk of litigation and protecting the reputation capital have become major priorities for auditors particularly, for the Big 4 in the post-Andersen/Enron world. Therefore, auditors are expected to use the information about off-balance sheet pension and lease obligations in their pricing decisions to communicate to the audit clients and other market participants. This line of reasoning leads to the following hypotheses.

H1: *There is a positive association between audit fees and off-balance sheet pension obligations.*

H2: *There is a positive association between audit fees and operating lease obligations.*

2.1 Estimating Off-Balance Sheet Operating Lease Obligations and Pension Obligations

In estimating the off-balance sheet (operating) lease obligations we follow the “constructive capitalization” method advocated by Imhoff et al. (1991). This procedure computes the present value of the company's minimum lease commitments of the next five years using the average bond yield for each S&P rating category at fiscal year end as the discount rate. Companies also disclose information on lease commitments beyond five years as a lump sum amount. Since this amount could involve multiple years, we make some simplifying assumptions to estimate the present value. We assume that the annual lease commitments beyond the fifth year are identical to that reported for the fifth year. The lump sum amount is then divided by the amount for the fifth year to estimate the number of years (rounded to the nearest integer) over which the lease payments could continue. Next, we divide the total lump sum amount by the number of years calculated above to obtain the annual lease payments beyond year five. Our final step is to take the present value of these payments which is added to the present value of the first five payments to yield the off-balance sheet lease obligations.⁵ We illustrate our process using ExxonMobil’s 10-K disclosures for the year 2001. Figure 1 summarizes this process.

[Insert Figure 1 About Here]

Our off-balance pension obligation measure is total projected benefit obligation arising from defined benefit pension plans minus fair value of plan assets held for such plans minus (plus) amount of liability (asset) recognized on the balance sheet relating to the pension plans. We scale both off-balance sheet obligations by total assets. Both lease and pension obligations are influenced by the discount rates which may vary across firms. We perform sensitivity analysis to mitigate this concern and those results are presented in

a later section. Finally, we compute the abnormal off-balance sheet pension and lease obligations, *OBPEN* and *OBLEASE*, respectively, as deviations from their respective mean values calculated for each two-digit SIC code and year.

2.2 Audit Fee Model

Our audit fee model is an adaptation of the model based on Simunic (1980). Based on discussions with the Big 8 auditors and firms that offer professional liability insurance, Simunic identified the following determinants of audit fees: client size, complexity of client's operations, financial distress, and financial statement components that require extra attention such as, accounts receivable and inventory. We use three proxies to capture client size: log of market value of equity, the square root of the number of employees, and whether the auditor is a Big 4 auditor. Client complexity is represented by two proxies: the square root of the number of business segments and whether the client has foreign operations. Financial distress is represented by several variables: long-term debt, other liabilities, return on assets, and whether the client incurred a loss during the current or the prior period. As in Simunic (1980), we include the ratio of inventory plus accounts receivable to total assets to measure increased loss exposure arising from accounts receivable and inventory. We add the following variables as additional determinants of audit fees: sales growth and market-to-book ratio to capture growth opportunities (Tsui et al. 2001) and reporting lag (Whisenant et al. 2003). We estimate the following model:

$$\begin{aligned}
LAFEE = & \alpha_0 + \alpha_1 OBPEN + \alpha_2 DEBT + \alpha_3 OLIAB + \alpha_4 LMVE + \alpha_5 ROA + \alpha_6 LOSS + \\
& \alpha_7 SGROW + \alpha_8 MKBK + \alpha_9 INVREC + \alpha_{10} DELAY + \alpha_{11} EMPLOY + \\
& \alpha_{12} SEGMENT + \alpha_{13} FORGN + \alpha_{14} BIG4
\end{aligned} \tag{1}$$

Where *LAFEE* is the log of audit fees for the current fiscal year; *DEBT* is book value of long-term debt divided by total assets; *OLIAB* is total liabilities excluding long-term debt, divided by total assets; *LMVE* is log of market value of equity; *ROA* is income before extraordinary items divided by total assets; *LOSS* is an indicator variable that equals 1 if the company reported negative net income in the current or previous fiscal year and 0 otherwise; *SGROW* is sales growth calculated as the change in net sales from the previous year to the current year divided by the net sales of the previous year; *MKBK* is the ratio of the market value of equity to the book value of equity, both measured at the end of the fiscal year; *INVREC* is the sum of inventory and accounts receivable divided by total assets; *DELAY* is the number of days after fiscal year-end that fourth quarter earnings information is released; *EMPLY* is the square root of the number of employees (measured in thousands); *SEGMENT* is the square root of the number of segments (business or geographic?) reported by the company; *FORGN* is an indicator variable that equals 1 if the company has foreign operations and 0 otherwise and *BIG4* is also an indicator variable that equals 1 if the auditor is a Big 4 auditor and 0 for non-Big 4 auditors. A description of all the variables used in the study appears in Figure 2.

[Insert Figure 2 About Here]

Consistent with prior research (Simunic 1980 and Whisenant et al. 2003), we expect positive coefficients on firm size (*LMVE*, *EMPLY*, and *BIG*), client complexity (*SEGMENT* and *FORGN*), financial distress (*DEBT*, *OLIAB*, and *LOSS*), financial statement

components (*INVREC*), and reporting lag (*DELAY*). Whisenant et al. (2003) report a negative coefficient on performance / distress and growth. Thus, we predict a negative sign for *ROA*, *SGROW* and *MKBK*.

We estimate two variations of model (1). We replace *OBPEN* with *OBLEASE* and keep the other variables in model (1). This will allow us to test hypothesis 2. The next variation replaces *OBPEN* with *OBBOTH* which is the sum of *OBPEN* and *OBLEASE*. The purpose of this test is to see whether the sum of the two off-balance sheet obligations is priced by the auditors. We do not offer predictions for whether the pension obligations would have a greater association with audit fees compared to the operating lease obligations.

3. Sample Selection

Our sample selection process begins with the firms for which audit fee data are available on Audit Analytics for the years 2000 through 2004. We have fee data for 52,608 firm-year observations. Next, we merge fee data with *Compustat* data and delete observations with missing ticker symbols (19,618 observations) or missing *GVKEY* or *PERMNO* (9,853). Finally, we delete 10,991 observations for which *Compustat* data are unavailable to estimate the fee model. Thus, we have 12,146 observations to estimate the fee model and 12,389 observations to run the going-concern opinion analysis. Going-concern opinions are also obtained from Audit Analytics. Our sample selection process is summarized in panel A of Table 1.

[Insert Table 1 About Here]

Industry distribution for the sample firms appears in panel B. The three most represented industry categories are durable manufacturers, computers, and retail. These industries collectively account for about 57 percent of the total number of observations.

Descriptive statistics and correlations are respectively, in Tables 2 and 3. The mean value of log of audit fees is 12.858 which is comparable to 12.482 reported by Whisenant et al. (2003) who use year 2000 data. The mean and median values of unlogged audit fees (not tabulated) are respectively, \$1.023 million and \$0.326 million. The mean and median values for *OBPEN* and *OBLEASE* are close to zero by construction. Recall that we measure off-balance sheet pension and operating lease obligations as deviations from industry means. The mean (median) values for off-balance sheet pension and operating lease obligations (scaled by total assets) are, respectively, 0.009 (0.000) and 0.078 (0.039). Thus, in terms of magnitude, it appears that off-balance sheet lease obligations are much greater than off-balance sheet pension obligations. The mean (median) value for firm size (log of market value of equity) for the sample is 5.841 (5.823) compared to the *Compustat* population mean of 4.677 (4.690). Thus, it appears that our sample firms are somewhat larger than the average *Compustat* firm. This is not surprising because we focus on firms that have audit fee data available which are the larger firms. The mean values of debt and other liabilities excluding long-term debt are, respectively, 14.2% and 26.7% of total assets. Thus, it appears that for the sample firms other liabilities far exceed long-term debt. About 46 percent of firm-year observations report negative net income. More than 87 percent of the sample is audited by Big 4 auditors.

[Insert Table 2 About Here]

[Insert Table 3 About Here]

Correlation coefficients are reported in Table 3. Pearson (Spearman) correlations appear above (below) the diagonal. Firm size, *LMVE* exhibit the highest correlation with audit fees. *DEBT* and *OLIAB* are correlated (significant at the 0.05 level or better) with *LAFEE*, indicating that audit fees are higher for firms with higher levels of long-term debt and other liabilities. Turning to variables of interest, only *OBPEN* is significantly correlated with *LAFEE*.

4. Results

4.1 Results for H1: The Association Between Audit Fees and Off-Balance Sheet Pension Obligations

Results for hypothesis 1 via the estimation of model (1) are presented in Table 4. White (1980) *t*-statistics are reported in parentheses. We report results for the pooled model as well as results by year. We discuss the results for the pooled model first. Note that all the control variables have the expected sign consistent with prior literature and are significant at the 0.01 level. The adjusted R^2 is 0.71. The coefficient on *OLIAB* is the highest among all variables including *DEBT*. Recall from Table 2 that the mean value for other liabilities scaled by assets is twice as large as the mean value for long-term debt. An *F*-test of the equality of *DEBT* and *OLIAB* is rejected at the 0.01 level, indicating that other liabilities indeed have a greater impact on audit fees compared to long-term debt. This is consistent with the notion that the risk of unrecorded liabilities increases with other liabilities and increasing the overall audit risk and thus, audit fees are higher for firms with other liabilities relative to firms without such liabilities.

After controlling for a variety of firm characteristics such as, size, complexity, financial statement components (inventory and accounts receivable), performance, growth, and auditor type, the variable of interest, *OBPEN* is positive and significant at the 0.01 level, indicating that off-balance sheet pension obligations are positively associated with audit fees. Also, note that *OBPEN* is positive and significant at the 0.10 level or better for all five years and the coefficient ranges from 0.712 in 2003 to 2.842 in 2000. The pension coefficient gradually declines from 2000 to 2003 and rises in 2004. In summary, the pension coefficient is not only statistically significant but also economically significant and the relation between audit fees and off-balance sheet pension obligations is fairly robust. Overall, we interpret these results as evidence consistent with hypothesis 1 that unrecorded, unfunded pension obligations reflect information that represents a higher inherent risk and audit risk, causing auditors to spend more effort on the audit.

[Insert Table 4 About Here]

4.2 Results for H2: The Association Between Audit Fees and Operating Lease Obligations

Results for hypothesis 2 appear in Table 5. As in Table 4, for the pooled model, all the control variables have the expected sign and are significant at the 0.01 level. Among the control variables, coefficients are higher for *DEBT* and *OLIAB* relative to other variables. In other words, liabilities in general have greater impact on audit pricing than firm size or complexity or other firm characteristics. *OBLEASE*, the variable of interest is positive and significant at the 0.01 level for all five years. The trend across the years

points to an increasing trend for the lease coefficient. Overall, the findings support hypothesis 2 that off-balance sheet lease obligations are associated with audit fees.

[Insert Table 5 About Here]

[Insert Table 6 About Here]

We combine *OBPEN* and *OBLEASE* into a single variable, *OBBOTH* and re-estimate model (1) and those results are in Table 6. *OBBOTH* is positive and significant at the 0.05 level or better in each of the five years. We conduct an *F*-test to examine whether recognized obligations (long-term debt and other liabilities) and off-balance sheet obligations exhibit a similar association with audit fees. The null hypothesis that *OBBOTH* is equal to *DEBT* is rejected at the 0.05 level; the null hypothesis that *OBBOTH* is equal to *OLIAB* is also rejected at the 0.001 level. These findings suggest that auditors price off-balance sheet obligations and recognized obligations differently.

We also keep *OBPEN* and *OBLEASE* as separate variables and re-estimate model (1). The results of this analysis (not reported) using pooled data show that the coefficients on *OBPEN* and *OBLEASE* are, respectively (*t*-statistics in parentheses), 1.453 (6.26) and 0.880 (11.00) and the adjusted R^2 is 0.714. All the control variables have the expected sign and are significant at the 0.001 level. An *F*-test of the equality of coefficients is rejected at the 0.01 level, indicating that off-balance sheet pension obligations have a greater impact on audit fees than operating lease obligations. In summary, results in Tables 4 through 6 support the notion that off-balance sheet pension and lease obligations are priced by auditors. Our results persist after controlling for

several known determinants of audit fees. The findings support the notion that off-balance sheet obligations could potentially increase the risk of misstated financial statements and thus, call for increased attention and effort on the part of the auditor and therefore, audit fees are higher. To assess the robustness of our results, we perform several supplementary tests and those are discussed next.

4.3 Supplementary Tests

4.3.1 Off-Balance Sheet Debt and Going Concern Opinion

Our first supplementary test examines the association between off-balance sheet obligations and the likelihood of issuing a going-concern opinion by the auditor. If off-balance sheet obligations increase overall audit risk, auditors could protect themselves in two ways. One is to charge higher fees and other is to issue a modified opinion. Francis and Krishnan (1999) provide evidence that brand-name auditors are more likely to issue modified opinions for firms with high accruals relative to firms with low accruals. Kleinman and Anandarajan (1999) provide evidence that off-balance sheet non-financial cues are useful for predicting going-concern opinions. However, they do not examine off-balance sheet pension or lease obligations. These findings are consistent with the notion that auditors appear to engage in conservative reporting to mitigate the risk of litigation.

Prior research indicates that financial distress, firm size, risk, financing and investment activities, reporting delay, and auditor type are associated with going-concern decisions (Geiger and Raghunandan 2002 and DeFond et al. 2002). To further examine

whether auditors use the information about off-balance sheet obligation, we estimate the following probit model.

$$GCOPN = \beta_0 + \beta_1 OBPEN + \beta_2 LMVE + \beta_3 SCORE + \beta_4 OLIAB + \beta_5 FCASH + \beta_6 LOSS + \beta_7 INVEST + \beta_8 RETURN + \beta_9 STDRET + \beta_{10} DELAY + \beta_{11} BIG4 \quad (2)$$

Where *GCOPN* is an indicator variable equal to 1 for firms receiving a going concern audit opinion, and 0 otherwise; *SCORE* is the probability of bankruptcy score (Zmijewski 1984) defined as $4.3 - 4.5 * X1 + 5.7 * X2 - 0.004 * X3$ where, *X1* is the ratio of net income to total assets, *X2* is the ratio of total liabilities to total assets and *X3* is the ratio of current assets to current liabilities; *FCASH* is the ratio of the sum of operating and investing cash flows to total assets; *INVEST* is the ratio of current assets other than inventory and accounts receivables to total assets at the end of the fiscal year; *RETURN* is the cumulative monthly stock returns cumulated over the fiscal year; *STDRET* is the standard deviation of daily stock returns over the company's fiscal year and other variables are the same as defined before.

Consistent with prior research, we expect positive coefficients on *SCORE*, *OLIAB*, *LOSS*, *STDRET*, *DELAY*, and *BIG4* and negative coefficients on *LMVE*, *FCASH*, *INVEST*, and *RETURN*. As before, we also estimate model (2) by replacing *OBPEN* with *OBLEASE* and retain the other variables in model (2).

Results of model (2) are presented in Table 7. For the pooled model all the control variables have the expected sign and are significant at the 0.05 level except *BIG4* which is not significant. However, the variable of interest, *OBPEN* is negative for all years except 2004 and is insignificant for all years. Thus, it appears that auditors do not issue a

going-concern qualification for firms with above normal off-balance sheet pension obligations.

[Insert Table 7 About Here]

[Insert Table 8 About Here]

Results for *OBLEASE* are in Table 8. As in Table 7, the log likelihood ratio is highly significant indicating that the model collectively has explanatory power in distinguishing between clients that received a going-concern opinion from clients that did not. *OBLEASE* is positive and significant at the 0.01 level in the pooled model and in yearly specifications, significant at the 0.05 level in three out of five years. We also estimate a *t*-statistics for *OBLEASE* using the approach in Fama and MacBeth (1973) and the mean coefficient is 1.087 and the *t*-statistic is 2.69 (significant at the 0.05 level for a two-tailed test). When *OBPEN* and *OBLEASE* are included in the same model, the coefficients on *OBPEN* and *OBLEASE* are (*t*-statistics are in parentheses), respectively, -2.583 (1.55) and 1.081 (3.26). *OBLEASE* is significant at the 0.001 level but *OBPEN* is not.

We also test whether *OBBOTH*, the sum of the two off-balance sheet obligations is associated with audit fees and those results are reported in Table 9. For the pooled model, *OBBOTH* is positive and significant at the 0.01 level. *OBBOTH* is positive in all but one year and significant at the 0.10 level or better in three out of five years.⁷

[Insert Table 9 About Here]

We also estimate model (2) using only financially stressed firms (Hopwood et al. 1994). We partition observations into quintiles based on *SCORE*, the probability of bankruptcy (Zmijewski 1984) and retain only the top quartile (most stressed firms). The untabulated results indicate that the coefficient on *OBLEASE* is 1.283 significant at the 0.005 level but *OBPEN* is negative and insignificant at the 0.10 level. When we replace *OBPEN* and *OBLEASE* with *OBBOTH*, the coefficient is 1.291 and significant at the 0.05 level. We also construct a matched-pair sample where 297 going-concern observations are matched with 297 observations receiving a clean opinion on size and two-digit SIC code. The results indicate that *OBPEN* is negative and significant at the 0.10 level and *OBLEASE* is 2.291 and significant at the 0.001 level. Overall, these results are consistent with the results reported in Tables 7 through 9. These findings suggest that auditors appear to use operating lease information in two ways. Operating leases are likely to impact the overall audit risk via inherent risk and auditors respond by increasing effort and thus, charge higher fees. Another response is to issue a going-concern opinion.

4.3.2 Other supplementary tests

In order to mitigate cross-correlations in our audit fee model (model 1), we test the significance of parameter estimates using *t*-statistics for the cross-temporal distributions of the five year-by-year estimates (Fama and MacBeth 1973). The mean coefficient for *OBPEN*, *OBLEASE*, and *OBBOTH* are, respectively (*t*-statistics are in parentheses), 1.524 (4.02), 0.763 (11.82), and 0.805 (10.29) and all are significant at the 0.01 level for a two-tailed test.

Next, we estimate model (1) by including dummy variables to represent two-digit SIC codes stated in Table 1 and the results are consistent with the results reported in Tables 4 through 6. We also measure *OBPEN* and *OBLEASE* at actual values rather than as deviations from industry means and once again, our results are not sensitive to how these variables are measured. To address the concern that off-balance sheet obligations might be correlated with omitted variables, we re-estimate model (1) by including three additional controls – mergers or acquisition activities during the fiscal year (0,1 variable), financing activities (0,1 variable according to whether the company issued public debt or equity during the fiscal year or not), and special items (0,1 variable according to whether the company had unusual or nonrecurring charges reported in Compustat data item 17 or not). The coefficients on *OBPEN* and *OBLEASE* (not tabulated) for the pooled model are, respectively, 1.498 and 0.868 (both are significant at the 0.001 level).

Both lease and pension obligations are influenced by the discount rates which may vary across firms. Following Sengupta and Wang (2005), we mitigate this concern by using a constant rate of 8% for all firms. The results (not tabulated) indicate that the coefficient on *OBLEASE* is 0.898 with a *t*-statistic of 10.47 for the pooled model. This is comparable to the 0.841 reported in Table 5. Similarly, we standardize pensions by first multiplying the projected benefit obligations with the ratio of the reported discount rate to the average yield on corporate bonds for the company's rating category (see Francis 1987) or use 8% if the yield is unavailable. Next, we subtract the fair value of pension plan assets from the adjusted gross projected benefit obligations to compute the unfunded pension obligations. We also subtract any recognized pension liabilities to arrive at the off-balance sheet pension obligations. Once again, we subtract the industry mean to

estimate the abnormal off-balance sheet pension obligations. For this specification, *OBPEN* is positive and significant at the 0.05 level for the pooled model. However, we recognize that this procedure though used in prior research is rather crude and may introduce measurement error in the variable of interest.

Our next test examines whether the association between audit fees and the abnormal off-balance sheet pension and lease obligations hold at the auditor level. We estimate model (1) separately for pension and lease obligations for each of the Big 5 auditors, including Arthur Andersen. The untabulated results indicate that the off-balance sheet leases are positive and significant at the 0.01 level for all the brand-name auditors except Arthur Andersen. Off-balance sheet pensions are significant for all the brand-name auditors except Andersen and KPMG. Thus, it appears that Arthur Andersen was the only brand-name auditor that did not price off-balance sheet pensions and leases.⁶

5. Conclusions

While operating leases and unfunded pension obligations have received much attention in the popular press and in academic research, there is limited empirical evidence on whether and how auditors use information about these two popular types of off-balance sheet obligations. We examine the relation between audit fees and abnormal (deviation from industry average) off-balance sheet lease obligations and off-balance sheet pension obligations. We find that both types of off-balance sheet obligations are associated with audit fees though pensions appear to have a greater impact on audit fees than leases. We also find that operating leases are associated with going-concern qualifications.

Our findings are consistent with the notion that hidden financial risks of an audit client are increasing in off-balance sheet obligations, i.e. higher risk of audit failure and auditors communicate their perceived risk to market participants via higher audit fees. The findings contribute to our understanding of how auditors regard recognized *vs.* disclosed obligations.

NOTES

1. On March 27, 2002, during a routine conference call Adelphia, a client of Deloitte & Touche revealed that the company was a cosigner for \$2.3 billion in credit, a figure that later grew to \$3.1 billion (Gallagher 2003). This revelation triggered a rapid decline of the firm and by June the stock price fell to 12 cents and the company eventually filed for bankruptcy.
2. One exception is Libby et al. (2006) who conduct an experiment involving Big 4 auditors and find that auditors are more likely to demand client firms correct misstatements involving stock options and leases that are recognized than when they are disclosed in the footnotes. Our study complements their study by examining whether disclosed information is associated with audit pricing.
3. With regard to pensions, the SEC recently had been monitoring the pension assumptions used by firms where the unfunded pension obligations are a significant portion of the market capitalization (Bear Stearns 2004). This is likely to be a concern for the auditor as well because enforcement action against the client could have negative consequences for the auditor.
4. The AICPA's Practice Alert No. 2001-2, "Audit Considerations in Times of Economic Uncertainty", cites off-balance sheet obligations as one of the factors to be considered for going-concern decisions.
5. Sengupta and Zhang (2005) report that their results are not sensitive to assuming that the lease payments occur at the end of each period as in Imhoff et al. (1991) or at the beginning of each period.

6. The number of observations for Arthur Andersen was smaller relative to other Big 4 auditors because it included only two years – 2000 and 2001. When we used only two years of data for other Big 4 auditors, operating leases are statistically significant at the 0.10 level or better for all the Big 4 auditors. However, pensions were significant for Ernst & Young and PricewaterhouseCoopers.
7. When t -statistics are estimated using cross-temporal distributions of the five year-by-year estimates (Fama and MacBeth 1973) the mean coefficient on *OBBOTH* is 0.958 and the t -statistic is 2.36 (significant at the 0.10 level).

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FIGURE 1
Capitalizing Off-Balance Sheet Debt from Operating Leases for ExxonMobil

This table reproduces data on operating leases provided by ExxonMobil in its 10-K filed for the year ended December 31, 2001 and illustrates the calculations of off-balance sheet debt arising from operating leases and postretirement benefit plans.

ExxonMobil's Operating Leases (From company 10-K, in \$millions):

	<u>Scheduled Cash Flows</u>	×	<u>6.91% Present Value Factor^a</u>	=	<u>PV of Cash Flows</u>
2002	1,327	×	0.9354	=	1,241.2
2003	1,107	×	0.8749	=	968.5
2004	801	×	0.8184	=	655.5
2005	569	×	0.7655	=	435.6
2006	433	×	0.7160	=	310.0
After 2006	447.8 ^b	×	3.4223 ^c	=	<u>1,532.5</u>
Total					5,134.3

^aPresent value factors are computed using the average bond yield at fiscal year end for ExxonMobil's rating class. Exxon's was rated AAA by Standard & Poor's and the average industrials' bond yield for AAA bonds for December 2001 was 6.91 percent.

^bLease commitments after 2006 of \$2,687 represents multiple years. We estimate the remaining years for the lease commitment after 2006 using an amount of lease commitment equal to \$447.8 (\$2,687/6) as \$2,687/433 ≈ 6 years.

^cThis factor is the present value of a 6 year annuity at 6.91% discounted to 2002.

FIGURE 2
Variable Definitions

<i>LAFEE</i> =	the log of audit fees for the current fiscal year.
<i>GCOPN</i> =	an indicator variable equal to 1 for firms with going concern audit opinions, and 0 otherwise.
<i>OBPEN</i> =	total projected benefit obligation arising from defined benefit pension plans minus fair value of plan assets held for such plans minus (plus) amount of liability (asset) recognized on the balance sheet relating to the pension plans, deflated by total assets. The variable represents the deviation from the mean value of OFFPENBEBT calculated for each two digit SIC code and year.
<i>OBLEASE</i>	$= \sum_{i=1}^5 \frac{OPLEASE_i}{(1+r_d)^i} + OPLEASE_6 \sum_{j=6}^{6+k} \frac{1}{(1+r_d)^j}$, divided by total assets.
where, $k = \text{integer} \left[\frac{OPLEASE_R}{OPLEASE_5} \right]$;	$OPLEASE_6 = \frac{OPLEASE_R}{k}$. The variable represents the deviation from the mean value of <i>OBLEASE</i> calculated for each two digit SIC code and year.
<i>OBOTH</i> =	<i>OBLEASE</i> + <i>OBPEN</i> , when <i>OBPEN</i> is positive, = <i>OBLEASE</i> , when <i>OBPEN</i> is negative. The variable represents the deviation from the mean value of <i>OBOTH</i> calculated for each two digit SIC code and year.
<i>DEBT</i> =	book value of long term debt divided by the total assets, both measured at the fiscal year end.
<i>OLIAB</i> =	total liabilities excluding long term debt, divided by total assets, both measured at the fiscal year end.
<i>LMVE</i> =	natural log of total market value of common equity (in \$ millions) at the end of the fiscal year.
<i>ROA</i> =	income before extraordinary items divided by total assets at the end of the fiscal year.
<i>LOSS</i> =	equals 1 if the company reported negative net income in the current or previous fiscal year; 0 otherwise.
<i>SGROW</i> =	the change in net sales from the previous fiscal year divided by net sales of the previous fiscal year.
<i>MKBK</i> =	ratio of market value of common equity to the book value of common equity, both measured at the end of the fiscal year.
<i>INVREC</i> =	total inventory plus accounts receivable divided by total assets all as of the end of the fiscal year.
<i>DELAY</i> =	number of days after fiscal year end that fourth quarter earnings information are released.
<i>EMPLY</i> =	the square root of the number of number of employees (measured in thousands).
<i>SEGMT</i> =	the square root of the number of segments reported by the company.
<i>FORGN</i> =	an indicator variable equal to 1 if the company has foreign operations; 0 otherwise.
<i>BIG4</i> =	an indicator variable equal to 1 if the auditor is a member of the big four accounting firms; 0 otherwise.
<i>SCORE</i> =	the probability of bankruptcy score (Zmijewski [1984]) defined as $4.3 - 4.5*X1 + 5.7*X2 - 0.004*X3$ where, X1 is the ratio of net income to total assets, X2 is the ratio of total liabilities to total assets and X3 is the ratio of current assets to current liabilities.
<i>FCASH</i> =	the ratio of the sum of operating and investing cash flows to total assets.
<i>INVEST</i> =	ratio of current assets other than inventory and accounts receivables to total assets at the end of the fiscal year.
<i>RETURN</i> =	cumulative monthly stock returns cumulated over the fiscal year.
<i>STDRET</i> =	the standard deviation of daily stock returns over the company's fiscal year.

TABLE 1
Sample Selection and Industry Distribution

Panel A: Sample Selection Screens	<i>Number of Observations</i>	
Initial sample of audit fees for the years 2000-2004	<u>52,608</u>	
Less: Observations with missing ticker symbols	(19,618)	
GVKEY or PERMNO unavailable	(9,853)	
Missing Compustat and CRSP data	<u>(10,991)</u>	
Final sample for tests of audit fees*	12,146	
Panel B: Industry Distribution	<i>Number of Observations</i>	<i>Percent</i>
<u>Industry Categories</u>		
Mining and Construction	197	1.62
Food	293	2.41
Textiles & Printing	645	5.31
Chemicals	345	2.84
Pharmaceuticals	819	6.74
Extractive	473	3.89
Durable Manufacturers	3,133	25.80
Computers	2,302	18.95
Transportation	680	5.60
Utilities	448	3.69
Retail	1,486	12.23
Services	1,197	9.86
Other	128	1.05
Total	12,146	100.00

Industry membership is determined by SIC code as follows: mining & construction (1000- 1999, excluding 1300-1399), food (2000-2111), textiles & printing/publishing (2200-2799), chemicals (2800-2824, 2840-2899), pharmaceuticals (2830-2836), extractive (2900-2999, 1300-1399), durable manufacturers (3000-3999, excluding 3570-3579 and 3670-3679), computers (7370-7379, 3570-3579, 3670-3679), transportation (4000-4899), utilities (4900-4999), retail (5000-5999), and, services (7000-8999, excluding 7370-7379). Other includes the rest and financial services (6000-6999) are excluded from our sample.

*Tests of auditors' going concern opinions are based on a sample of 12,389 observations.

TABLE 2
Descriptive Statistics

This table provides summary statistics for the variables based on a sample of 12,146 observations pooled over the years 2000-2004. Variables are defined in Figure 2.

Variable	Mean	Median	STD	Q1	Q3
LAFEE	12.858	12.695	1.265	11.928	13.649
OBBOTH	0.001	-0.008	0.075	-0.038	0.023
OBPEN	0.000	-0.001	0.024	-0.005	0.000
OBLEASE	0.001	-0.007	0.073	-0.033	0.018
DEBT	0.142	0.090	0.160	0.000	0.246
OLIAB	0.267	0.242	0.140	0.162	0.347
LMVE	5.841	5.823	2.093	4.340	7.197
ROA	-0.020	0.028	0.172	-0.034	0.064
LOSS	0.459	0.000	0.498	0.000	1.000
SGROW	0.153	0.082	0.470	-0.029	0.226
MKBK	3.352	2.062	7.877	1.256	3.489
INVREC	0.235	0.206	0.173	0.094	0.336
DELAY	47.504	43.000	21.084	30.000	58.000
EMPLY	2.003	1.153	2.552	0.536	2.398
SEGMT	1.588	1.414	0.826	1.000	2.236
FORGN	0.366	0.000	0.482	0.000	1.000
BIG4	0.872	1.000	0.334	1.000	1.000

TABLE 3
Correlation Matrix

This table reports the correlations between the key variables. The variables are defined in Figure 2. The upper diagonal of this table reports the results of Pearson Correlation between the variables. The lower diagonal of this table reports the results of Spearman Correlation between the variables. The correlation coefficients between the range of $(0.016, \infty)$ and $(-\infty, -0.016)$ at statistically significant at 0.05 level based on two tailed tests.

	LAFEE	OBPEN	OBLEASE	DEBT	OLIAB	LMVE	ROA	LOSS	MKBK
LAFEE		0.210	-0.050	0.264	0.305	0.750	0.197	-0.152	0.039
OBPEN	0.170		-0.041	0.048	0.217	0.163	0.052	-0.046	0.034
OBLEASE	-0.002	-0.038		-0.083	-0.017	-0.132	-0.134	0.121	0.043
DEBT	0.324	0.083	-0.001		-0.007	0.178	0.098	-0.065	0.082
OLIAB	0.298	0.180	0.066	0.121		0.089	0.047	-0.059	0.102
LMVE	0.730	0.179	-0.110	0.236	0.099		0.315	-0.308	0.135
ROA	0.156	0.047	-0.135	0.015	0.057	0.365		-0.438	-0.020
LOSS	-0.154	-0.082	0.101	-0.124	-0.086	-0.311	-0.509		0.022
MKBK	0.129	0.043	0.001	-0.083	0.057	0.431	0.260	-0.039	

TABLE 4
Effect of Off-Balance Sheet Debt from Pension Plans on Audit Fees

This table reports the results of OLS regressions of the natural log of total fees billed for audits of financial statements and reviews of quarterly financial statements of the current fiscal year (*LAFEE*) on off-balance sheet debt arising from underfunded pension plans (*OBPEN*) and other control variables. Variables are as defined in Figure 2. Coefficients are followed by White's heteroscedasticity adjusted t-values in parentheses. ***, **, * represents statistical significance at 0.01, 0.05 and 0.1 levels respectively.

Independent Variables	Predicted sign	Pooled data	2000	2001	2002	2003	2004
INTERCEPT	?	8.903 (187.408)***	9.209 (69.955)***	9.281 (94.510)***	9.236 (98.762)***	8.897 (92.805)***	9.024 (90.336)***
OBPEN	+	1.197 (4.727)***	2.842 (1.444)*	1.712 (2.179)**	0.862 (2.079)**	0.712 (1.930)**	1.490 (3.229)***
DEBT	+	1.018 (24.066)***	1.089 (11.932)***	1.172 (13.567)***	1.034 (12.253)***	1.126 (14.736)***	0.962 (11.361)***
OLIAB	+	1.589 (27.564)***	1.567 (12.182)***	1.475 (12.990)***	1.543 (14.405)***	1.456 (14.191)***	1.325 (11.884)***
LMVE	+	0.400 (62.214)***	0.298 (16.783)***	0.308 (22.952)***	0.346 (26.026)***	0.389 (29.922)***	0.467 (35.180)***
ROA	-	-0.249 (-5.699)***	-0.343 (-3.053)***	-0.482 (-6.438)***	-0.496 (-6.157)***	-0.146 (-1.776)**	-0.534 (-4.836)***
LOSS	+	0.274 (19.336)***	0.094 (2.627)***	0.121 (4.168)***	0.257 (9.528)***	0.312 (12.553)***	0.213 (7.810)***
SGROW	-	-0.137 (-9.250)***	-0.036 (-1.212)	-0.111 (-4.090)***	-0.129 (-3.910)***	-0.150 (-4.498)***	-0.118 (-3.884)***
MKBK	-	-0.012 (-4.892)***	-0.015 (-2.285)**	-0.009 (-4.258)***	-0.022 (-3.603)***	-0.006 (-1.982)**	-0.020 (-4.998)***
INVREC	+	0.262 (6.328)***	0.326 (3.234)***	0.413 (5.110)***	0.287 (3.645)***	0.376 (4.974)***	0.270 (3.126)***

DELAY	+	0.006 (16.102)***	0.003 (3.303)***	0.002 (2.511)***	0.003 (3.956)***	0.004 (6.372)***	0.005 (6.451)***
EMPLY	+	0.071 (10.895)***	0.091 (5.093)***	0.092 (5.470)***	0.093 (6.525)***	0.079 (5.646)***	0.048 (4.089)***
SEGMT	+	0.067 (7.988)***	0.112 (5.492)***	0.114 (7.093)***	0.108 (6.809)***	0.114 (7.060)***	0.049 (2.704)***
FORGN	+	0.389 (27.974)***	0.422 (12.602)***	0.362 (13.509)***	0.332 (12.448)***	0.343 (13.647)***	0.343 (12.833)***
BIG4	+	0.287 (14.330)***	0.249 (4.346)***	0.216 (5.298)***	0.329 (7.805)***	0.327 (8.926)***	0.540 (13.648)***
Number of obs.		12,146	1,728	2,370	2,740	2,635	2,673
Adjusted R		0.71	0.71	0.74	0.75	0.78	0.76

TABLE 5
Effect of Off Balance Sheet Debt from Operating Leases on Audit Fees

This table reports the results of OLS regressions of the natural log of total fees billed for audits of financial statements and reviews of quarterly financial statements of the current fiscal year (*LAFEE*) on off-balance sheet debt arising from operating leases (*OBLEASE*) and other control variables. Variables are as defined in Figure 2. Coefficients are followed by White's heteroscedasticity adjusted t-values in parentheses. ***, **, * represents statistical significance at 0.01, 0.05 and 0.1 levels respectively.

Independent Variables	Predicted sign	Pooled data	2000	2001	2002	2003	2004
INTERCEPT	?	8.866 (186.780)***	9.194 (69.719)***	9.251 (93.673)***	9.209 (98.074)***	8.857 (92.106)***	8.968 (90.370)***
OBLEASE	+	0.841 (9.444)***	0.654 (3.008)***	0.661 (4.055)***	0.775 (4.646)***	0.720 (4.574)***	1.006 (5.049)***
DEBT	+	1.050 (24.790)***	1.114 (12.103)***	1.189 (13.755)***	1.054 (12.551)***	1.165 (15.126)***	1.007 (11.880)***
OLIAB	+	1.632 (28.792)***	1.580 (12.402)***	1.504 (13.319)***	1.577 (15.102)***	1.510 (14.988)***	1.385 (12.682)***
LMVE	+	0.405 (62.571)***	0.301 (16.630)***	0.313 (22.991)***	0.352 (26.134)***	0.394 (30.232)**	0.475 (35.924)***
ROA	-	-0.229 (-5.238)***	-0.322 (-2.861)***	-0.458 (-6.071)***	-0.476 (-5.946)***	-0.133 (-1.641)*	-0.510 (-4.634)***
LOSS	+	0.268 (18.911)***	0.092 (2.554)***	0.121 (4.145)***	0.247 (9.204)***	0.305 (12.278)***	0.208 (7.652)***
SGROW	-	-0.136 (-9.074)***	-0.034 (-1.154)	-0.109 (-3.992)***	-0.131 (-3.921)***	-0.150 (-4.432)***	-0.112 (-3.683)***
MKBK	-	-0.013 (-4.994)***	-0.016 (-2.242)**	-0.009 (-4.243)***	-0.023 (-3.659)***	-0.006 (-2.083)**	-0.021 (-5.196)***

INVREC	+	0.277 (6.707)***	0.343 (3.393)***	0.425 (5.253)***	0.294 (3.763)***	0.395 (5.236)***	0.284 (3.302)***
DELAY	+	0.006 (16.161)***	0.003 (3.285)***	0.002 (2.571)***	0.003 (3.990)***	0.004 (6.513)***	0.005 (6.350)***
EMPLY	+	0.070 (11.092)***	0.091 (5.160)***	0.092 (5.580)***	0.093 (6.653)***	0.078 (5.677)***	0.048 (4.221)***
SEGMT	+	0.066 (7.898)***	0.110 (5.410)***	0.112 (6.965)***	0.107 (6.791)***	0.113 (6.999)***	0.049 (2.725)***
FORGN	+	0.390 (28.123)***	0.420 (12.555)***	0.365 (13.623)***	0.332 (12.534)***	0.340 (13.576)***	0.351 (13.149)***
BIG4	+	0.277 (13.895)***	0.239 (4.166)***	0.207 (5.065)***	0.317 (7.553)***	0.318 (8.710)***	0.530 (13.495)***
Number of obs.		12,146	1,728	2,370	2,740	2,635	2,673
Adjusted R		0.71	0.71	0.74	0.75	0.78	0.77

TABLE 6
Effect of Off Balance Sheet Debt from Pension Plans and Operating Leases on Audit Fees

This table reports the results of OLS regressions of the natural log of total fees billed for audits of financial statements and reviews of quarterly financial statements of the current fiscal year (*LAFEE*) on off-balance sheet debt arising from underfunded pension plans and operating leases (*OBOTH*) and other control variables. Variables are as defined in Figure 2. Coefficients are followed by White's heteroscedasticity adjusted t-values in parentheses. ***, **, * represents statistical significance at 0.01, 0.05 and 0.1 levels respectively.

Independent Variables	Predicted sign	Pooled data	2000	2001	2002	2003	2004
INTERCEPT	?	8.873 (187.730)***	9.194 (69.728)***	9.253 (94.021)***	9.217 (98.742)***	8.865 (92.810)***	8.978 (91.224)***
OBOTH	+	0.890 (10.375)***	0.675 (3.103)***	0.710 (4.365)**	0.798 (4.977)***	0.733 (4.879)***	1.107 (5.949)***
DEBT	+	1.050 (24.783)***	1.113 (12.106)***	1.190 (13.766)***	1.052 (12.519)***	1.164 (15.113)***	1.010 (11.914)***
OLIAB	+	1.601 (28.360)***	1.577 (12.391)***	1.490 (13.259)***	1.541 (14.838)***	1.477 (14.733)***	1.334 (12.195)***
LMVE	+	0.406 (62.827)***	0.301 (16.644)***	0.313 (23.069)***	0.352 (26.202)***	0.394 (30.366)***	0.476 (36.373)***
ROA	-	-0.229 (-5.249)***	-0.322 (-2.865)***	-0.458 (-6.066)***	-0.478 (-5.981)***	-0.134 (-1.659)**	-0.505 (-4.596)***
LOSS	+	0.267 (18.875)***	0.092 (2.555)***	0.120 (4.133)***	0.247 (9.218)***	0.304 (12.264)***	0.207 (7.622)***
SGROW	-	-0.135 (-9.058)***	-0.034 (-1.154)	-0.109 (-3.978)***	-0.130 (-3.899)***	-0.149 (-4.417)***	-0.110 (-3.650)***
MKBK	-	-0.013 (-4.998)***	-0.016 (-2.245)**	-0.009 (-4.237)***	-0.023 (-3.624)***	-0.006 (-2.084)**	-0.021 (-5.234)***

INVREC	+	0.287 (6.941)***	0.344 (3.402)***	0.431 (5.329)***	0.304 (3.882)***	0.405 (5.366)***	0.300 (3.484)***
DELAY	+	0.006 (16.366)***	0.003 (3.288)***	0.002 (2.599)***	0.003 (4.139)***	0.005 (6.632)***	0.005 (6.527)***
EMPLY	+	0.070 (11.052)***	0.091 (5.163)***	0.091 (5.576)***	0.092 (6.619)***	0.077 (5.651)***	0.047 (4.207)***
SEGMT	+	0.065 (7.775)***	0.110 (5.407)***	0.112 (6.974)***	0.106 (6.710)***	0.111 (6.915)***	0.046 (2.578)***
FORGN	+	0.387 (27.912)***	0.421 (12.568)***	0.363 (13.543)***	0.330 (12.444)***	0.336 (13.385)***	0.347 (13.009)***
BIG4	+	0.275 (13.785)***	0.238 (4.157)***	0.206 (5.048)***	0.315 (7.514)***	0.316 (8.679)***	0.526 (13.423)***
Number of obs.		12,146	1,728	2,370	2,740	2,635	2,673
Adjusted R		0.71	0.71	0.74	0.75	0.78	0.77

TABLE 7

Effect of Off Balance Sheet Debt from Pension Plans on the Likelihood of Receiving a Going Concern Audit Opinion

This table reports the results of Probit regressions of the probability of receiving a going concern audit opinion on off-balance sheet debt arising from underfunded pension plans (*OBPEN*) and other control variables. Variables are as defined in Figure 2. Coefficients are followed by t-values in parentheses. ***, **, * represents statistical significance at 0.01, 0.05 and 0.1 levels respectively.

Independent Variables	Predicted sign	Pooled data	2000	2001	2002	2003	2004
INTERCEPT	?	-3.897 (-16.430)***	-5.307 (-6.960)***	-3.730 (-7.050)***	-3.738 (-7.600)***	-4.244 (-7.260)***	-3.746 (-7.280)***
OBPEN	+	-2.628 (-1.580)	-71.081 (-2.570)	-2.020 (-0.390)	-5.396 (-1.490)	-3.739 (-0.970)	1.472 (0.630)
LMVE	-	-0.050 (-2.370)***	-0.027 (-0.440)	-0.081 (-1.740)**	-0.073 (-1.540)*	-0.086 (-1.610)*	0.019 (0.410)
SCORE	+	0.052 (2.340)***	0.137 (1.930)**	0.026 (0.560)	0.046 (1.000)	0.064 (1.120)	0.020 (0.370)
OLIAB	+	1.602 (8.800)***	2.354 (4.290)***	2.127 (5.400)***	1.701 (4.400)***	1.839 (4.340)***	0.488 (1.160)
FCASH	-	-0.939 (-5.730)***	-1.016 (-2.310)**	-0.758 (-2.200)**	-1.355 (-3.730)***	-0.400 (-0.930)	-0.992 (-2.740)***
LOSS	+	0.520 (6.440)***	0.533 (2.280)**	0.646 (3.820)***	0.405 (2.310)**	0.551 (2.330)***	0.431 (2.590)***
INVEST	-	-0.588 (-3.730)***	-0.620 (-1.210)	-0.261 (-0.830)	-1.370 (-3.600)***	-0.471 (-1.200)	-0.701 (-2.140)**
RETURN	-	-0.056 (-1.920)**	-0.495 (-2.180)**	-0.121 (-1.370)*	-0.141 (-1.290)*	0.024 (0.530)	-0.118 (-1.320)*

STDRET	+	10.133 (7.910)***	7.529 (1.780)**	8.158 (2.750)***	13.152 (4.320)***	9.554 (3.330)***	15.947 (5.210)***
DELAY	+	0.011 (7.800)***	0.010 (2.540)***	0.010 (3.060)***	0.008 (2.720)***	0.013 (3.560)***	0.014 (4.300)***
BIG4	+	-0.057 (-0.760)	0.397 (1.290)*	0.093 (0.520)	0.029 (0.170)	0.061 (0.360)	-0.295 (-2.010)
Number of obs.		12,389	1,766	2,452	2,853	2,767	2,551
Log Likelihood		-1005.31	-109.51	-231.58	-222.36	-171.62	-231.75

TABLE 8

Effect of Off Balance Sheet Debt from Operating Leases on the Likelihood of Receiving a Going Concern Audit Opinion

This table reports the results of Probit regressions of the probability of receiving a going concern audit opinion on off-balance sheet debt arising from operating leases (*OBLEASE*) and other control variables. Variables are as defined in Figure 2. Coefficients are followed by t-values in parentheses. ***, **, * represents statistical significance at 0.01, 0.05 and 0.1 levels respectively.

Independent Variables	Predicted sign	Pooled data	2000	2001	2002	2003	2004
INTERCEPT	?	-3.878 (-16.360)***	-5.102 (-6.780)***	-3.684 (-6.920)***	-3.685 (-7.540)***	-4.205 (-7.170)***	-3.777 (-7.380)***
OBLEASE	+	1.086 (3.270)***	2.147 (2.320)**	1.697 (2.540)***	1.265 (1.920)**	0.036 (0.040)	0.289 (0.350)
LMVE	-	-0.047 (-2.220)**	-0.022 (-0.360)	-0.077 (-1.640)*	-0.069 (-1.450)*	-0.093 (-1.750)**	0.024 (0.510)
SCORE	+	0.042 (1.860)**	0.115 (1.610)**	0.002 (0.050)	0.032 (0.690)	0.065 (1.130)	0.018 (0.330)
OLIAB	+	1.591 (8.790)***	2.360 (4.380)***	2.136 (5.460)***	1.672 (4.330)***	1.782 (4.190)***	0.546 (1.330)*
FCASH	-	-0.945 (-5.710)***	-1.064 (-2.400)***	-0.766 (-2.190)**	-1.320 (-3.580)***	-0.383 (-0.890)	-1.004 (-2.760)***
LOSS	+	0.513 (6.340)***	0.498 (2.170)**	0.651 (3.820)***	0.386 (2.200)**	0.561 (2.370)***	0.431 (2.590)***
INVEST	-	-0.535 (-3.340)***	-0.606 (-1.170)	-0.153 (-0.470)	-1.294 (-3.330)***	-0.461 (-1.170)	-0.694 (-2.120)**
RETURN	-	-0.056 (-1.930)**	-0.470 (-2.150)**	-0.111 (-1.240)	-0.139 (-1.270)	0.024 (0.530)	-0.120 (-1.330)*

STDRET	+	9.922 (7.700)***	6.307 (1.490)*	7.312 (2.420)***	13.013 (4.270)***	9.419 (3.290)***	15.865 (5.190)***
DELAY	+	0.012 (8.200)***	0.010 (2.550)***	0.011 (3.420)***	0.009 (3.020)***	0.013 (3.610)***	0.014 (4.300)***
BIG4	+	-0.077 (-1.030)	0.425 (1.340)*	0.089 (0.490)	-0.005 (-0.030)	0.056 (0.320)	-0.295 (-2.010)
Number of obs.		12,389	1,766	2,452	2,853	2,767	2,551
Adjusted R		-1001.23	-110.36	-228.55	-221.25	-172.20	-231.87

TABLE 9
Effect of Combined Off Balance Sheet Debt from Operating Leases and Pension Plans on the Likelihood of Receiving a Going Concern Audit Opinion

This table reports the results of Probit regressions of the probability of receiving a going concern audit opinion on off-balance sheet debt arising from operating leases and pension plans (*OBOTH*) and other control variables. Variables are as defined in Appendix B. Coefficients are followed by t-values in parentheses. ***, **, * represents statistical significance at 0.01, 0.05 and 0.1 levels respectively.

Independent Variables	Predicted sign	Pooled data	2000	2001	2002	2003	2004
INTERCEPT	?	-3.864 (-16.320)***	-5.113 (-6.800)***	-3.682 (-6.920)***	-3.667 (-7.520)***	-4.192 (-7.170)***	-3.769 (-7.360)***
OBOTH	+	0.897 (2.770)***	2.034 (2.190)**	1.626 (2.450)***	0.934 (1.470)*	-0.225 (-0.260)	0.422 (0.530)
LMVAL	-	-0.050 (-2.350)***	-0.022 (-0.370)	-0.078 (-1.660)**	-0.073 (-1.550)*	-0.094 (-1.770)**	0.024 (0.510)
SCORE	+	0.044 (1.940)**	0.117 (1.650)**	0.004 (0.070)	0.035 (0.750)	0.067 (1.160)	0.017 (0.320)
OLIAB	+	1.562 (8.670)***	2.348 (4.370)***	2.109 (5.400)***	1.636 (4.260)***	1.768 (4.190)***	0.528 (1.290)*
FCASH	-	-0.942 (-5.700)***	-1.059 (-2.390)***	-0.768 (-2.190)**	-1.325 (-3.610)**	-0.380 (-0.890)	-1.009 (-2.770)***
LOSS	+	0.515 (6.360)***	0.496 (2.170)**	0.648 (3.810)***	0.393 (2.250)**	0.562 (2.380)***	0.430 (2.580)***
INVEST	-	-0.542 (-3.390)***	-0.612 (-1.180)	-0.155 (-0.480)	-1.313 (-3.390)***	-0.477 (-1.210)	-0.694 (-2.120)**
RETURN	-	-0.055 (-1.900)**	-0.468 (-2.150)**	-0.110 (-1.240)	-0.137 (-1.250)	0.026 (0.560)	-0.120 (-1.330)*

STDRET	+	9.965 (7.750)***	6.466 (1.530)*	7.440 (2.470)***	13.039 (4.290)***	9.410 (3.290)***	15.877 (5.190)***
DELAY	+	0.012 (8.160)***	0.010 (2.540)***	0.011 (3.420)***	0.009 (2.980)***	0.013 (3.550)***	0.014 (4.320)***
BIG4	+	-0.076 (-1.020)	0.425 (1.340)*	0.089 (0.490)	0.001 (0.000)	0.058 (0.340)	-0.299 (-2.030)
Number of obs.		12,389	1,766	2,452	2,853	2,767	2,551
Adjusted R		-1001.23	-110.63	-228.76	-222.64	-172.16	-231.80