



RESEARCH IN ACCOUNTING REGULATION

VOLUME 20

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Editor

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LIST OF CONTRIBUTORS

<i>Lucy F. Ackert</i>	Department of Economics and Finance, Michael J. Coles College of Business, Kennesaw State University, Kennesaw, USA
<i>June Y. Aono</i>	College of Business Administration, University of Hawaii at West Oahu, Pearl City, USA
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<i>Julia Grant</i>	Weatherhead School of Management, Case Western Reserve University, Cleveland, USA
<i>Liming Guan</i>	Shidler College of Business, University of Hawaii at Manoa, Honolulu, USA
<i>Tanweer Hasan</i>	Walter E. Heller College of Business Administration, Roosevelt University, Schaumburg, USA
<i>Theresa F. Henry</i>	Stillman School of Business, Seton Hall University, South Orange, USA
<i>Rani Hoitash</i>	Department of Accountancy, Bentley College, Waltham, USA
<i>Udi Hoitash</i>	College of Business Administration, Northeastern University, Boston, USA
<i>Mark P. Holtzman</i>	Stillman School of Business, Seton Hall University, South Orange, USA
<i>Scott B. Jackson</i>	School of Accounting, Moore School of Business, University of South Carolina, Columbia, USA
<i>Gregory A. Jonas</i>	Case Western Reserve University, Cleveland, USA
<i>Waresul Karim</i>	Faculty of Commerce and Administration, Victoria University of Wellington, Wellington, New Zealand
<i>Robert K. Larson</i>	Department of Accounting, School of Business Administration, The University of Dayton, Dayton, USA
<i>Beixin Lin</i>	Department of Accounting, Law and Taxation, School of Business, Montclair State University, Montclair, USA

- Patricia Teixeira Lopes* Faculty of Economics, University of Porto, Porto, Portugal
- Stephen R. Moehrle* College of Business Administration, University of Missouri, St. Louis, USA
- Larry M. Parker* Case Western Reserve University, Cleveland, USA
- Shakil Quayes* School of Global Management and Leadership, Arizona State University, Phoenix, USA
- Jennifer A. Reynolds-Moehrle* University of Missouri, St. Louis, USA
- Lucia Lima Rodrigues* School of Economics and Management, University of Minho, Braga, Portugal
- Arnold Schneider* College of Management, Georgia Institute of Technology, Atlanta, USA
- Kenneth W. Shaw* College of Business, University of Missouri, Columbia, USA
- L. Murphy Smith* Department of Accounting, Texas A&M University, College Station, USA
- Pamela Stuerke* University of Missouri, St. Louis, USA
- Richard A. White* School of Accounting, Moore School of Business, University of South Carolina, Columbia, USA
- Yüksel Koç Yalkın* Bagdat Cad. Hatboyu, Istanbul, Turkey
- Rong Yang* Department of Business Administration and Economics, SUNY – College at Brockport, Brockport, USA
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PART I:
MAIN PAPERS

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REVISED PENSION RULES AND THE COST OF DEBT

Kenneth W. Shaw

ABSTRACT

Statement of Financial Accounting Standards No. 158 significantly changes how firms report the financial position of their defined-benefit pension plans. Under this new standard, firms must report the funded status, equal to the net of the projected benefit obligation and the fair value of their pension plan assets, on the balance sheet. As a result, prior service costs and gains or losses, previously unrecognized but disclosed in footnotes to the financial statements, are included on the balance sheet. Using a sample of firms with defined-benefit pension plans over 1999–2005, this study examines the relation between yield spreads on new debt issues and recognized or disclosed pension information. The results show that both recognized and disclosed pension information are related to yield spreads. Further, there is no significant difference in the relation between pension information and yield spreads depending on the location of pension information in the financial statements. Overall, the results suggest that bond investors utilize both recognized and disclosed pension information in their pricing decisions, suggesting little potential impact of Statement of Financial Accounting Standards No. 158 on the cost of debt.

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INTRODUCTION

Under Statement of Financial Accounting Standards No. 87, *Employers' Accounting for Pensions* (SFAS No. 87), firms net their pension liabilities and assets with certain unrecognized pension items when determining balance sheet amounts to report for their defined-benefit pension plans (FASB, 1985). These off-balance sheet items typically include unrecognized gains and losses, resulting from pension asset and liability experience different from expectations, and unrecognized prior service costs, resulting from plan amendments. In recent years, the magnitude of these unrecognized items, particularly unrecognized pension losses, grew significantly, while many plans were underfunded. As a result, under SFAS No. 87 many firms with underfunded pension plans reported a net pension asset. Though information on unrecognized pension items has long been available in footnotes, the information is complex.

To make pension information more transparent, the FASB released a revised standard for defined-benefit plans (Statement of Financial Accounting Standards No. 158, *Employers' Accounting for Defined-Benefit Pension and Other Postretirement Plans*, SFAS No. 158) (FASB, 2006).¹ Under SFAS No. 158, firms must report the funded status, which is the difference between the fair value of their pension plan assets and the projected benefit obligation (PBO) (liability), on their balance sheets. Thus, SFAS No. 158 moves information on unrecognized pension items, disclosed in footnotes under SFAS No. 87, to the balance sheet. This study uses SFAS No. 87 disclosures to examine how pension information, including recognized and unrecognized pension items, is related to the yield spread on new debt issuances. As such the study provides evidence relevant to understanding the effects of disclosure versus recognition.

Comment letters sent to the FASB when SFAS No. 158 was in the exposure draft stage suggest divergent views on the proposed standard. For example, a letter from PricewaterhouseCoopers states "we believe that recognizing these off-balance sheet amounts, which collectively are estimated at billions of dollars, represents a significant improvement in financial reporting ... financial statements will be more complete and transparent by fully recognizing these amounts rather than continuing to relegate them to the financial statement footnotes, which can be difficult to understand." Hormel Foods CFO writes "... the current standards provide for accounting and disclosure that is useful to only the most sophisticated readers." On the other hand, a comment letter from Boeing notes, "Recognizing the funded position of a pension plan will introduce volatility

to the balance sheet ... Recording such changes will not necessarily improve reporting or transparency.” Likewise, Johnson and Johnson’s Corporate Controller notes, “Conceptually, we do not believe that inclusion in the statement of financial position of items already disclosed in the notes to financial statements adds more visibility or emphasis.”²

Prior research suggests financial statement users’ judgments can be affected by the placement of items – in the financial statements or in the footnotes – in certain contexts. For example, studying a sample of banks that simultaneously hold recognized and disclosed derivative securities, Ahmed, Kilic, and Lobo (2006) find that only amounts of recognized derivatives are related to stock prices. With respect to postretirement benefits other than pensions, evidence in Davis-Friday, Folami, Liu, and Middlestaedt (1999) and Davis-Friday, Liu, and Middlestaedt (2004) suggests a stronger market reaction to recognized (under SFAS No. 106) than disclosed (under SFAS No. 74) information. Libby, Nelson, and Hunton (2006) provide a potential explanation for differential treatment of recognized versus disclosed items, namely that audit partners require greater corrections of misstated recognized amounts.

While research suggests equity market participants use SFAS No. 87 pension and postretirement benefit information (e.g., Landsman, 1986; Barth, 1991; Barth, Beaver, & Landsman, 1992; Amir, 1993; Weidman & Weir, 2004), the evidence also suggests disclosed information is underutilized (e.g., Landsman & Ohlson, 1990; Picconi, 2006), and some users do not treat pension information in a footnote as they would a reported balance sheet liability (Harper, Mister, & Strawser, 1987).

In sum, related research suggests recognition versus disclosure, or “information location,” matters, at least in some contexts. Pension accounting rules under SFAS No. 87 yields both recognized and disclosed pension items, while a major impact of SFAS No. 158 is to move previously disclosed pension items to the balance sheet. Thus, pension information reported under SFAS No. 87 can be used to provide insights on the prospective impact of implementation of SFAS No. 158 on the cost of debt. While credit rating agencies ostensibly use pension footnote information in developing their ratings (Standard and Poor’s, 2004),³ little evidence exists with respect to the relation between pension information and direct measures of the cost of debt. This study’s research question thus examines *the relation between yield spreads on new debt issuances and recognized or disclosed pension information*.

The sample spans 1999–2005.⁴ Pension plan funded status, measured by the PBO minus the fair value of pension plan assets (FVPA), deteriorated

over the sample period. Thus, most sample firms were underfunded as of 2005. However, due to sizable increases in unrecognized pension *losses*, the typical sample firm reported an on-balance sheet pension *asset* under SFAS No. 87 as of 2005. Applying SFAS No. 158 to 2005 data, only about 10 percent of the sample firms would report on-balance sheet pension plan assets, and most firms would see their on-balance pension liabilities significantly increase.

The study uses regression analysis to assess the relevance of disclosed versus recognized pension information in pricing new debt issuances. The results suggest that investors in new debt issues already incorporate the funded status of the plan in their pricing decision. For example, in regressions of yield spreads on new debt issues on recognized (on-balance sheet) and unrecognized (disclosed) pension items under SFAS No. 87, the coefficients on both pension variables are positive and statistically significant. That is, higher pension liabilities, whether reported on or off the balance sheet, are related to higher yield spreads on new debt issuances. Further, there is little statistical or economic difference on yield spreads depending on whether the pension item is recognized or simply disclosed. This suggests that the pension disclosures under SFAS No. 87 are effective in revealing the funded status of pension plans to debt investors; thus, SFAS No. 158 would arguably have little direct impact on the cost of debt for the typical sample firm.

BACKGROUND

Balance Sheet Reporting under SFAS No. 87

Balance sheet reporting of defined-benefit pension plans under SFAS No. 87 is complex. In general, firms net their PBO, FVPA, unrecognized prior service costs, unrecognized gains and losses, and unrecognized transition amounts (if any) to report one balance sheet amount. For very poorly funded plans, with accumulated benefit obligations greater than their FVPA, “minimum liability” rules apply; application of these rules impact balance sheet reporting and can also yield intangible assets and shareholders’ equity adjustments relating to pensions.⁵

Balance Sheet Reporting under SFAS No. 158

In general, the provisions of SFAS No. 158 are effective for fiscal years ending after December 15, 2006. Under SFAS No. 158, firms with

defined-benefit pension plans must recognize the difference between the plan's PBO and its FVPA as either an asset or liability on the balance sheet.⁶ As such, unrecognized prior service costs and unrecognized actuarial gains and losses, formerly disclosed in the footnotes, are included in the on-balance sheet asset or liability. The additional liability (or asset) required to transition to SFAS No. 158 is offset with a corresponding amount in accumulated other comprehensive income in shareholders' equity. The statement also eliminates the "minimum liability" rules of SFAS No. 87. This somewhat byzantine set of rules often resulted in firms recognizing intangible assets, even for poorly funded plans.

Sample Footnote Disclosure

[Appendix A](#) presents a portion of the 2005 pension and other postretirement plan footnote for The Boeing Company. Boeing's defined-benefit pension plan and other postretirement plans are underfunded as of 2005. For its pension plan, Boeing's liability (benefit obligation) of \$45.183 billion and assets (FVPA) of \$43.484 billion imply underfunding of \$1,699 billion. Under SFAS No. 87 reporting, however, Boeing's on-balance sheet pension liability is far less than its underfunded status. In fact, and not uncommon, Boeing reports an asset for its defined-benefit pension plan (\$12.668 billion) due to unrecognized actuarial losses of \$12.989 billion.⁷

DATA

Sample Selection

Sample selection begins with all firms that report pension data (FVPA and PBO) on Compustat in each year over 1999–2005. In February 1998, the [FASB \(1998\)](#) released SFAS No. 132, which changed the required pension disclosures, thus beginning sample selection in 1999 ensures that all firm-years in the sample are under the same pension reporting regime. Use of a constant set of firms across time enables analysis of how the economic status of firms' plans has changed, without introducing effects from varying sample composition.

For the sample of 1,157 firms with pension data over 1999–2005 on Compustat, I search the SDC Global New Issues Database for issuances of new debt in any of the years 2000–2005. For firms with multiple new debt

issues within a year, I include the first issue of that year in the sample. The pension variables are lagged 1 year to the debt issuance variables, such that, for example, 1999 pension (and control) variables are used to explain yield spreads on new debt issuances in 2000. After deleting observations with missing control variables, and 16 observations with studentized regression residuals above 3 in absolute value (see [Belsley, Kuh, & Welsch, 1980](#)), the final sample for the regression analyses includes 1,841 firm-year observations.

Descriptive Information on Funded Status

[Fig. 1](#) presents information on the funded status of the sample firms' pension plans over 1999–2005. The figure reports the 1st quartile, median, and 3rd quartile values, within each year, of the ratio of the PBO divided by

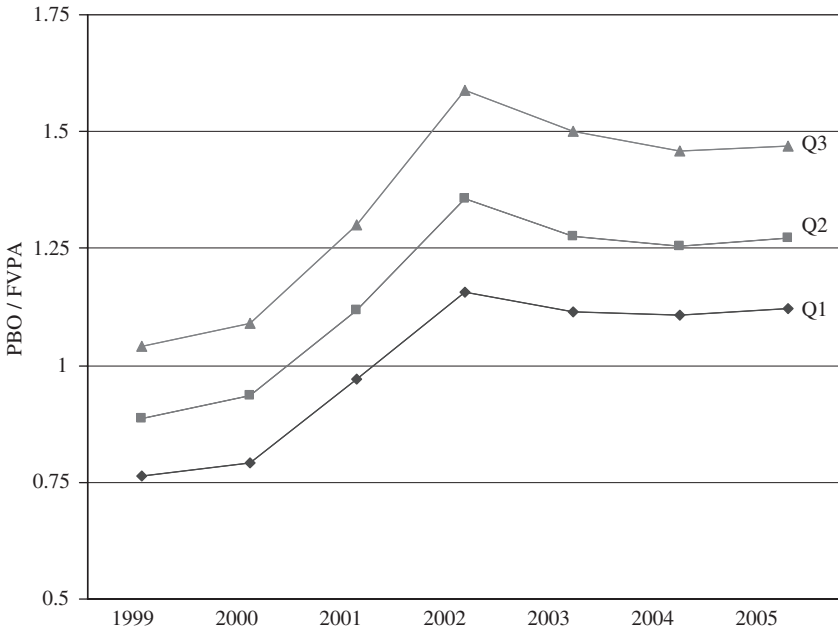


Fig. 1. Pension Plan Funded Status, 1999–2005. *Note:* This figure reports the 1st (Q1), 2nd (Q2), and 3rd (Q3) quartile values of the projected benefit obligation (PBO) divided by the fair value of pension plan assets (FVPA), for defined-benefit pension plans, for each of the years 1999–2005. The sample consists of 1,157 firms with values for both pension variables on Compustat in each of the years 1999–2005.

the FVPA. Data for both variables are from Compustat. A ratio above (below) 1 indicates an underfunded (overfunded) plan.

Fig. 1 suggests that funding status eroded for the sample firms over 1999–2005. For example, in 1999, over one-half of the sample firms were overfunded. The ratio of PBO/FVPA increased steadily through 2002, and while tapering off thereafter, is above 1 for over 75 percent of the sample firms in 2005. In sum, the evidence in Fig. 1 suggests, in an economic sense, the typical sample firm is underfunded at the end of 2005. The next section provides descriptive information that contrasts the balance sheet reporting of these plans under SFAS No. 87 with that resulting from application of SFAS No. 158.

Balance Sheet Effects of SFAS No. 158

Table 1 presents descriptive information on the potential balance sheet effects of SFAS No. 158, using end of fiscal-year 2005 data. The “SFAS No. 87” column in Table 1 shows that, under SFAS No. 87, 705 of the 1,157 sample firms (61 percent) report net pension assets, and 454 (39 percent) report net pension liabilities. The “Totals” row of Table 1, however, shows that 89 percent (1,032) of the sample firms are underfunded ($PBO > FVPA$) at the end of 2005. Of the 705 firms that report pension assets under SFAS No. 87 in 2005, only 121 (about 10.5 percent of the sample) would report pension assets under SFAS No. 158. Thus, applying SFAS No. 158 would result in the

Table 1. Balance Sheet Reporting for Defined-Benefit Pension Plans as of Fiscal Year-End 2005 under SFAS No. 87 versus SFAS No. 158.

	SFAS No. 87	SFAS No. 158	
		PBO > FVPA	FVPA > PBO
Firms with net pension assets	705	582	121
Firms with net pension liabilities	454	450	4
Totals	1,157	1,032	125

Note: Information in this table is based on 1,157 firms with pension data on Compustat in 2005. For each firm, a net pension asset or liability is computed from the Compustat variables projected benefit obligation (PBO), fair value of pension plan assets (FVPA), unrecognized prior service cost, and unrecognized gains and losses.

The “SFAS No. 87” column of the table reports the number of sample firms, using end of fiscal 2005 data, reporting net pension assets or net pension liabilities under SFAS No. 87. The “SFAS No. 158” columns of the table report the number of firms with underfunded ($PBO > FVPA$) or overfunded ($FVPA > PBO$) plans.

typical sample firm, showing a net pension asset on its 2005 balance sheet, to instead report a net pension liability. This in turn could lead certain firms to report negative shareholders' equity.⁸ This suggests that, under certain conditions, SFAS No. 87 can yield balance sheet pension items that fail to faithfully represent the plan's funded status.

Table 2 reports descriptive information on the components of unrecognized pension items. Compustat reports data on unrecognized prior service cost and "other," comprised of transition amounts and unrecognized gains and losses. As most firms no longer have transition amounts for their pension plans, the Compustat variable "other" is interpreted as unrecognized gains and losses. Not all of the sample firms report unrecognized prior service cost, thus the descriptives for this item are based on data for 968 firms.

Table 2 shows that most of the sample firms report unrecognized prior service costs (debit balance) and unrecognized actuarial losses (debit balance). Further, on average these items are sizable; unrecognized prior service costs (unrecognized gains and losses) average 8.32 (194) percent of the absolute value of the on-balance sheet amount reported for pension plans under SFAS No. 87. These unrecognized pension items average 0.1 and 2.65 percent of total assets, respectively. In sum, the evidence in Table 2 suggests that the provision under SFAS No. 87 to defer unexpected items is

Table 2. Unrecognized Pension Components at Fiscal Year-End 2005.

Pension Item	Firms with 2005 Balance of		Item Mean, Deflated by	
	Debit	Credit	ON_BS (Percent)	Assets (Percent)
Unrecognized prior service cost	811	157	8.32	0.1
Unrecognized gains and losses	1,091	66	194	2.65

Note: Information in this table is based on 1,157 firms with pension data on Compustat in 2005, 968 of which report unrecognized prior service cost. Data on unrecognized prior service costs and unrecognized pension gains and losses are collected from Compustat.

The "Firms with 2005 Balance of" columns of the table report the number of firms, using end of fiscal 2005 data, reporting unrecognized prior service costs (debit balance) or unrecognized prior service credits (credit balance) and unrecognized pension losses (debit balance) or unrecognized pension gains (credit balance).

Column 3 of the table reports the mean of each unrecognized pension item, scaled by the absolute value of the firm's on-balance sheet prepaid/accrued pension cost (ON_BS) under SFAS No. 87. Column 4 reports the mean of each unrecognized pension item, scaled by the firm's total assets (Assets).

a key contributor to the reporting of net pension assets for underfunded pension plans.

Dependent Variable

The dependent variable is **SPREAD**, the spread (in basis points) between the yield to maturity on the firm's debt issue and the yield to maturity on a US Treasury bond of similar maturity on the issuance date. This is a direct measure of the cost of debt.

Key Independent Variables

The independent variables of interest are the on- and off-balance sheet pension items. The prepaid/accrued pension cost (**ON_BS**), computed from Compustat, is the net pension amount reported on the balance sheet under SFAS No. 87. This is computed as the **PBO**, minus the sum of the **FVPA**, unrecognized prior service costs, and unrecognized pension gains and losses. The sum of the unrecognized prior service costs and unrecognized gains and losses form the off-balance sheet unrecognized pension variable (**UNREC**). Finally, the plan's funded status (**FUNDED**) equals the **PBO** minus the **FVPA**. In interpreting results, it is important to recall that a positive value of **ON_BS** indicates an on-balance sheet liability, a positive value of **UNREC** implies a debit (i.e., loss) balance in the unrecognized pension items, and a positive value of **FUNDED** indicates an underfunded pension plan. Each of these pension variables is scaled by the firm's total assets.

Control Variables

Following prior research (e.g., Fisher, 1959; Kaplan & Urwitz, 1979; Ziebart & Reiter, 1992; Bhojraj & Sengupta, 2003; Shi, 2003; Ortiz-Molina, 2006), the analyses control for characteristics of the issuer and issue. The *issuer* characteristics include:

TIMES	Times interest earned ratio, defined as net income plus interest expense, all divided by interest expense;
EBITDA	Earnings before interest, taxes, and depreciation, all divided by total assets;

LEV	Leverage, defined as total long-term debt divided by total assets;
SIZE	Firm size, defined as total assets;
MB	Market to book ratio, a proxy for growth opportunities.

The characteristics of the particular debt *issue*, computed using data from the SDC Global New Issues Database, include:

FIRST_CALL	The ratio of the number of years to the first possible call date to the maturity date of the issue;
YRS_TO_MAT	The number of years to maturity of the issue;
ISS_SIZE	The net proceeds (\$millions) of the issue;
SUB	An indicator variable that equals 1 for subordinated debt, and 0 otherwise.

To control for general economic conditions at the time of bond issuance, the regressions include MRKT, the interest rate on a 10-year Treasury bond, issued in the same month as the sample firm's debt in year t . As [Blume, Lim, and Mackinlay \(1998\)](#) show that credit ratings vary over time, the regressions also include year indicator variables. Finally, the regressions include a series of industry indicator variables, based on one-digit SIC codes.

Model Overview

Regressions of new debt issue yield spreads on pension information and control variables are estimated via ordinary least squares. [Appendix B](#) summarizes the regression models and provides variable definitions. These models test the association between pension information and the cost of debt; a positive (negative) coefficient estimate indicates the variable is associated with a higher (lower) cost of debt.

To combat skewness in their distributions, the natural logarithms of SIZE and YRS_TO_MAT are used in the regressions. These variables are labeled as LSIZE and LYRS. Since firms can appear in the regression sample in multiple years, I use [Huber \(1967\)](#) and [White \(1980\)](#) robust standard errors in computing t -statistics. These t -statistics use a by-firm cluster that yields standard errors that are robust to autocorrelation and heteroscedasticity.

Descriptive Statistics

Table 3 presents descriptive statistics on the regression variables. The typical debt issue is rated “A” by Standard and Poors and has a spread of 114 basis points above a Treasury of similar duration issued in the same month. The median issue matures in 7 years and is for \$198 million. Few of the sample issues are of subordinated debt.

The typical sample firm reports a net pension asset, indicated by the mean of -0.014 for ON_BS. This is driven in large part by unrecognized pension items, evidenced by the mean value for UNREC of 0.018. The median sample firm reports times interest earned of 2.37, earnings before interest, taxes, and depreciation of 6.7 percent of total assets, long-term debt of 22.7 percent of total assets, assets over \$20 billion, and a market-book ratio just above 2. In general, the sample appears similar to those employed in related studies.

Table 3. Descriptive Statistics.

Variable	Mean	SD	99th	Quartiles			1st
				Third	Median	First	
SPREAD	132	82.3	426	168	114	78	-30
ON_BS	-0.014	0.031	0.027	0.000	-0.002	-0.020	-0.107
FUNDED	0.003	0.048	0.134	0.022	0.001	-0.002	-0.201
UNREC	0.018	0.051	0.219	0.035	0.003	-0.000	-0.127
TIMES	4.50	5.51	24.95	5.18	2.37	1.26	0
EBITDA	0.084	0.065	0.286	0.114	0.067	0.044	-0.044
LEV	0.246	0.134	0.624	0.319	0.227	0.135	0.017
SIZE	111,402	212,504	1,097,190	65,458	20,469	6,441	1,028
MB	3.33	3.58	19.56	3.84	2.07	1.61	0.706
FIRST_CALL	0.549	0.481	1	1	1	0	0
YRS_TO_MAT	8.73	6.20	30	10	7	5	1
MRKT	4.96	0.728	6.44	5.54	5	4.29	3.57
SUB	0.021	0.142	1	0	0	0	0
ISS_SIZE	269	340	1,749	359	198	20	1

Note: The table reports the mean, standard deviation, 99th percentile value, third quartile value, median, 1st quartile value, and 1st percentile value for the sample of $N=1,841$ firm-year observations. The sample is based on firms with pension data on Compustat in each of the years 1999–2004 and that issue debt in any of the years 2000–2005. All variables except SIZE and YRS_TO_MAT are defined in Appendix B. SIZE is total assets (\$millions) and YRS_TO_MAT is the number of years to maturity of the debt issue.

Data to compute SPREAD, FIRST_CALL, YRS_TO_MAT, and ISS_SIZE are obtained from the SDC Global New Issues Database. Data to compute ON_BS, FUNDED, UNREC, TIMES, EBITDA, SIZE, and MB are obtained from Compustat. MRKT is obtained from the Federal Reserve Economic Database.

REGRESSION RESULTS

Relation between SFAS No. 87 Net Balance Sheet Amount and Yield Spreads on New Debt Issuances

Results of ordinary least squares estimation of Models 1–3 in [Appendix B](#) are reported in [Table 4](#). For brevity, the results on the year and indicator variables are not tabulated. The results show that new debt issue yield spreads are lower for firms with higher TIMES and EBITDA, larger firms,

Table 4. Ordinary Least Squares Regression Results on the Relation between Yield Spreads and Recognized and Disclosed Pension Items Reported under SFAS No. 87.

Independent Variable (Predicted Sign)	Model 1		Model 2		Model 3	
	Coefficient	<i>t</i> -Statistic	Coefficient	<i>t</i> -Statistic	Coefficient	<i>t</i> -Statistic
Intercept	319.10	7.57***	319.65	7.93***	320.64	7.85***
Test variables						
ON_BS (+)	188.81	1.46*			273.23	2.34***
FUNDED (+)			239.40	3.42***		
UNREC (+)					199.08	2.71***
Control variables						
TIMES (–)	–2.04	–1.93*	–2.42	–2.53**	–2.26	–2.13**
EBITDA (–)	–163.28	–1.78*	–155.95	–1.77*	–161.04	–1.80*
LEV (+)	98.92	1.87*	93.73	1.92*	93.85	1.86*
LSIZE (–)	–7.27	–2.24**	–7.14	–2.25**	–7.24	–2.26**
MB (–)	–2.69	–2.71***	–2.83	–2.87***	–2.76	–2.83***
FIRST_CALL (–)	–17.34	–2.49**	–14.84	–2.30**	–15.68	–2.38**
LYRS (+)	22.54	4.83***	23.65	4.59***	23.55	5.12***
MRKT (–)	–29.14	–5.96***	–28.52	–5.97***	–28.56	–5.97***
SUB (+)	28.23	1.56	28.76	1.63	33.55	1.84*
ISS_SIZE (–)	–0.15	–0.07	–0.05	–0.02	–0.13	–0.06
Adjusted R^2	0.347		0.356		0.355	

Note: The table reports coefficient estimates, robust *t*-statistics, and adjusted R^2 's from ordinary least squares regressions. The *t*-statistics employ a by-firm cluster, which renders them robust to autocorrelation and heteroscedasticity-consistent. The dependent variable is SPREAD. All variables are as defined in [Appendix B](#). Each regression includes a set of year and industry indicator variables, which are not tabulated for brevity.

***, **, and * indicate that the coefficient estimate differs from 0 at less than the 0.01, 0.05, and 0.10 level, one-tailed tests (with the exception of the intercept and control variables).

and firms with more growth opportunities. Yield spreads are also lower for debt issuances with a longer time to the first call date. These coefficients are all significant at better than the 0.10 level, using two-tailed tests of statistical significance. Conversely, yield spreads are higher for more leveraged firms, for debt with longer time to maturity, and (weakly) for subordinated debt.

Of greater interest, the results also show that, without considering unrecognized pension items, yield spreads are only weakly related to the on-balance sheet pension item reported under SFAS No. 87. From the “Model 1” column of Table 4, the coefficient on ON_BS equals 188.81, and it is marginally significant at $p < 0.08$ (one-tailed test). These marginal results on the on-balance pension item recognized under SFAS No. 87 are perhaps not surprising, since the independent variables in this specification do not fully capture the funded status of the plan, disclosed in the pension footnotes. The next section reports the results of regressions that use footnote data to incorporate pension plan funded status.

Relation between SFAS No. 158 Funded Status and Yield Spreads on New Debt Issuances

The “Model 2” columns of Table 4 report results using FUNDED, the required balance sheet item under SFAS No. 158, instead of ON_BS. Results with this independent variable provide evidence on whether the funded status, currently disclosed under SFAS No. 87, is related to new debt issue yield spreads, even though it is not completely recognized on the balance sheet. The results suggest that pension plans’ funded status is significantly related to yield spreads on new debt issuances. The coefficient on FUNDED equals 239.40, and it is significant at $p < 0.01$. In contrast to the weak evidence presented with respect to the on-balance sheet net pension item reported under SFAS No. 87, this evidence suggests that the funded status, currently disclosed in the footnotes under SFAS No. 87, is significantly related to the yield spread on new issues.

To provide further evidence on the relation between on- and off-balance sheet pension items on the cost of debt, the “Model 3” columns report results using ON_BS and UNREC as independent variables. In this estimation, ON_BS captures the on-balance sheet pension item reported on the balance sheet under SFAS No. 87, and UNREC captures the aggregate unrecognized pension items, disclosed in the footnotes under SFAS No. 87. Comparing the estimated regression coefficients on these two independent variables provides evidence on the differential pricing

implications, if any, of recognized versus disclosed pension information on the cost of new debt issues.

As expected, both recognized and disclosed pension items are relevant in pricing new debt issues. From the “Model 3” section of Table 4, the coefficient on ON_BS equals 273.23, and it is significant at $p < 0.01$. Similarly, the coefficient on UNREC is also positive (199.08) and significant at $p < 0.01$. Although larger in magnitude, the coefficient estimate on ON_BS is not statistically larger than that on UNREC.

In sum, the evidence in this section suggests that debt investors use both recognized and disclosed pension information in pricing new debt issues. No statistical difference is found in the estimated associations of on-balance sheet versus off-balance sheet pension items with yield spreads on new debt issues. Thus, this evidence is consistent with the notion that pension reporting under SFAS No. 87 provides information on pension plan funded status useful in pricing new debt issues. As pension plans’ funded status is already available in the footnotes under SFAS No. 87, the results suggest that recognizing the funded status on the balance sheet under SFAS No. 158 will unlikely have a significant impact on the cost of debt.

Additional Tests

While the results suggest bond investors employ recognized and disclosed pension information in their pricing decisions, it is possible instead the results are driven by credit ratings on the new debt issuances. That is, credit raters use pension information in developing their ratings (Standard and Poor’s, 2004), and credit ratings in turn are related to market yield spreads. To examine whether recognized and disclosed pension information has incremental explanatory power for yield spreads, beyond that captured in credit ratings, the credit rating (RATE) on the new issue is added as an independent variable to the previous models to yield Models 4–6. RATE equals 1 for debt rated “AAA” or “AA,” 2 for debt rated “BBB,” etc. Thus, higher values of RATE correspond to worse credit ratings. Results are shown in Table 5.

As expected, the coefficient estimates on the credit rating variable are positive and significant in all three estimations. Worse credit ratings are related to higher yield spreads and thus more costly debt. Further, including the credit rating variable usurps some of the explanatory power of some of the control variables. More importantly, the results on pension variables

Table 5. Ordinary Least Squares Regression Results on the Relation between Yield Spreads and Recognized and Disclosed Pension Items Reported under SFAS No. 87, Controlling for the New Issue Credit Rating.

Independent Variable (Predicted Sign)	Model 4		Model 5		Model 6	
	Coefficient	<i>t</i> -Statistic	Coefficient	<i>t</i> -Statistic	Coefficient	<i>t</i> -Statistic
Intercept	192.24	4.62***	193.27	4.87***	192.78	4.80***
Test variables						
ON_BS (+)	110.98	1.05			181.77	2.03**
FUNDED (+)			178.36	2.71***		
UNREC (+)					159.65	2.13**
Control variables						
TIMES (-)	-1.43	-1.84*	-1.64	-2.29**	-1.59	-2.03**
EBITDA (-)	-26.20	-0.36	-22.42	-0.31	-23.43	-0.33
LEV (+)	-5.17	-0.16	-6.15	-0.20	-6.17	-0.20
LSIZE (-)	-3.10	-1.16	-2.98	-1.14	-2.99	-1.14
MB (-)	-0.92	-1.38	-1.06	-1.65*	-1.04	-1.61
FIRST_CALL (-)	-9.91	-1.82*	-8.27	-1.61	-8.39	-1.63
LYRS (+)	24.72	6.21***	25.54	6.23***	25.54	6.20***
MRKT (-)	-33.18	-6.00***	-32.64	-6.18***	-32.70	-6.16***
SUB (+)	18.83	1.33	19.57	1.39	19.42	1.38
ISS_SIZE (-)	1.06	0.66	1.11	0.67	1.12	0.68
RATE (+)	44.63	7.94***	43.94	8.20***	44.06	8.18***
Adjusted R^2	0.443		0.449		0.448	

Note: The table reports coefficient estimates, robust *t*-statistics, and adjusted R^2 's from ordinary least squares regressions. The *t*-statistics employ a by-firm cluster, which renders them robust to autocorrelation and heteroscedasticity-consistent. The dependent variable is SPREAD. All variables are as defined in Appendix B. Each regression includes a set of year and industry indicator variables, which are not tabulated for brevity.

***, **, and * indicate that the coefficient estimate differs from 0 at less than the 0.01, 0.05, and 0.10 level, one-tailed tests (with the exception of the intercept and control variables).

in Table 5 are consistent with those in Table 4. From the “Model 6” column of Table 5, the coefficients on ON_BS and UNREC are positive and significant at $p < 0.05$. Once again, the coefficient estimates on these variables do not statistically differ from one another. This suggests bond investors incorporate recognized and disclosed pension information in their pricing decisions, beyond the information captured in credit ratings.

CONCLUSION

This paper offers evidence on the effects of recognized versus disclosed pension information on the cost of debt. SFAS No. 158, designed to enhance the transparency of reporting for defined-benefit and other postretirement plans, requires balance sheet recognition of previously unrecognized (but disclosed) items. In recent years, these undisclosed items, particularly unrecognized actuarial gains and losses, have increased dramatically in magnitude.

The study uses a sample of 1,157 firms with pension data on Compustat over 1999–2005. The study first shows that pension plan funded status, measured by the PBO minus the FVPA, deteriorated over the sample period. Most sample firms were underfunded as of 2005. However, due to sizable increases in unrecognized *losses*, the typical sample firm reported an on-balance sheet pension *asset* under SFAS No. 87 in 2005. Applying SFAS No. 158 to 2005 data, only about 10 percent of the sample firms would be expected to report on-balance sheet pension *assets*; most firms instead would see their on-balance pension liabilities significantly increase.

To examine how the location of pension information is related to the cost of debt, yield spreads on new debt issues are regressed on recognized and unrecognized (under SFAS No. 87) pension items and a battery of controls. The results suggest that under SFAS No. 87, both recognized and disclosed pension items are related to yield spreads. In particular, larger pension liabilities, whether recognized or just disclosed, are associated with higher yield spreads on new debt issues. Further, there is no significant difference in the estimated effects of recognized or disclosed pension information on yield spreads. In sum, the results suggest that SFAS No. 87 footnote disclosures are sufficiently transparent for debt investors when pricing new issues.

NOTES

1. Though SFAS No. 158 also applies to postretirement plans other than pensions, data constraints limit this study's analyses to defined-benefit pension plans.

2. These comment letters are from the Financial Accounting Standards Board website (<http://www.fasb.org/oc/fasb-getletters.php?project=1025-300>).

3. While their precise methodologies are proprietary and detailed, evidence suggests rating agencies consider “unfunded liabilities relating to defined-benefit pension plans as debt-like in nature” and “plan assets as a percentage of the PBO a simple, basic measure of plan solvency” (Standard and Poor's, 2004).

4. Compustat data to complete this study were updated through 2005 at the time this study was completed.

5. The projected benefit obligation factors in an expected level of salary increases while the accumulated benefit obligation assumes zero future salary increases.

6. SFAS No. 158 does not change the computation of periodic pension cost nor the reporting of net income.

7. [Appendix A](#) also reveals that, in addition to a prepaid pension asset, Boeing reports a pension liability of \$2.948 billion (offset by a similar amount of accumulated other comprehensive income) under the minimum liability rules of SFAS No. 87. Thus, through the minimum liability rules, the company has already indirectly recognized a portion of the off-balance unrecognized pension items that require recognition under SFAS No. 158. Compustat does not provide complete information on pension minimum liabilities.

8. For example, Credit Suisse analyst David Zion estimates SFAS No. 158 would result in removal of about 6 percent of the overall shareholders' equity of S&P 500 firms.

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REFERENCES

- Ahmed, A., Kilic, E., & Lobo, G. (2006). Does recognition versus disclosure matter? Evidence from value-relevance of banks' recognized and disclosed derivative financial instruments. *The Accounting Review*, 81(3), 567–588.
- Amir, E. (1993). The market valuation of accounting information: The case of postretirement benefits other than pensions. *The Accounting Review*, 68(4), 703–724.
- Barth, M. (1991). Relative measurement errors among alternative pension asset and liability measures. *The Accounting Review*, 66(3), 433–463.
- Barth, M., Beaver, W., & Landsman, W. (1992). The market valuation implications of net periodic pension cost components. *Journal of Accounting and Economics*, 15(1), 27–62.
- Belsley, D. A., Kuh, E., & Welsch, R. E. (1980). *Regression diagnostics*. New York, NY: Wiley.
- Bhojraj, S., & Sengupta, P. (2003). Effect of corporate governance on bond ratings and yields: The role of institutional owners and outside directors. *Journal of Business*, 76(3), 455–475.
- Blume, M., Lim, F., & Mackinlay, C. (1998). The declining credit quality of US corporate debt: Myth or reality. *Journal of Finance*, 53(4), 1389–1413.
- Davis-Friday, P., Folami, L., Liu, C., & Middlestaedt, H. F. (1999). The value relevance of financial statement recognition versus disclosure: Evidence from SFAS No. 106. *The Accounting Review*, 74(4), 403–423.
- Davis-Friday, P., Liu, C., & Middlestaedt, H. F. (2004). Recognition and disclosure reliability: Evidence from SFAS No. 106. *Contemporary Accounting Research*, 21(2), 399–430.

- Financial Accounting Standards Board (FASB). (1985). *Employers' accounting for pensions*. Statement of Financial Accounting Standards No. 87. FASB, Stamford, CT.
- Financial Accounting Standards Board (FASB). (1998). *Employers' disclosures about pensions and other postretirement benefits*. Statement of Financial Accounting Standards No. 132. FASB, Norwalk, CT.
- Financial Accounting Standards Board (FASB). (2006). *Employers' accounting for defined-benefit pension and other postretirement plans*. Statement of Financial Accounting Standards No. 158. FASB, Norwalk, CT.
- Fisher, L. (1959). Determinants of risk premiums on corporate bonds. *Journal of Political Economy*, 67(3), 217–237.
- Harper, R., Mister, W., & Strawser, J. (1987). The impact of new pension disclosure rules on perceptions of debt. *Journal of Accounting Research*, 25(2), 327–330.
- Huber, P. (1967). The behavior of maximum likelihood estimates under non-standard conditions. In: L. M. LeCam & J. Neyman (Eds), *Proceedings of the fifth Berkeley symposium on mathematical statistics and probability*, University of California Press, Berkeley, CA (pp. 221–233).
- Kaplan, R., & Urwitz, G. (1979). Statistical models of bond ratings: A methodological inquiry. *Journal of Business*, 52(2), 231–261.
- Landsman, W. (1986). An empirical investigation of pension fund property rights. *The Accounting Review*, 61(4), 661–691.
- Landsman, W., & Ohlson, J. (1990). Evaluation of market efficiency for supplementary accounting disclosures: The case of pension assets and liabilities. *Contemporary Accounting Research*, 7(1), 185–198.
- Libby, R., Nelson, M., & Hunton, J. (2006). Recognition v. disclosure, auditor tolerance for misstatement, and the reliability of stock-compensation and lease information. *Journal of Accounting Research*, 44(3), 533–560.
- Ortiz-Molina, H. (2006). Top-management incentives and the pricing of corporate public debt. *Journal of Financial and Quantitative Analysis*, 41(2), 317–340.
- Picconi, M. (2006). The perils of pensions: Does pension accounting lead investors and analysts astray? *The Accounting Review*, 81(4), 925–955.
- Shi, C. (2003). On the trade-off between the future benefits and riskiness of R&D: A bondholders' perspective. *Journal of Accounting and Economics*, 35(2), 227–254.
- Standard and Poor's. (2004). Corporate ratings criteria: Postretirement obligations. Commentary. (October 28) Available at: www.fasb.org/oc/1025-300/50068.pdf
- Weidman, C. L., & Weir, H. A. (2004). The market value implications of post-retirement benefit plans and plan surpluses – Canadian evidence. *Canadian Journal of Administrative Studies*, 21(3), 229–241.
- White, H. (1980). A heteroscedasticity-consistent covariance matrix estimator and a direct test for heteroscedasticity. *Econometrica*, 48(4), 817–838.
- Ziebart, D., & Reiter, R. (1992). Bond ratings, bond yields and financial information. *Contemporary Accounting Research*, 9(1), 252–282.

APPENDIX A. SAMPLE PENSION FOOTNOTE

At September 30	Pensions		Other postretirement Benefits	
	2005	2004	2005	2004
<i>Change in benefit obligation</i>				
Beginning balance	\$42,781	\$39,931	\$8,135	\$8,617
Service cost	910	831	147	162
Interest cost	2,457	2,378	454	492
Impact of Medicare Prescription Drug, Improvement and Modernization Act of 2003				(439)
Plan participants' contributions	12	13		
Amendments	270	190		(119)
Actuarial loss/gain	2,778	1,656	326	(57)
Settlement/curtailment/acquisitions/dispositions, net	(1,774)	(14)	(503)	(8)
Benefits paid	(2,251)	(2,204)	(502)	(513)
Ending balance	\$45,183	\$42,781	\$8,057	\$8,135
<i>Change in plan assets</i>				
Beginning balance at fair value	\$38,977	\$33,209	\$72	\$58
Actual return on plan assets	5,460	4,296	7	6
Company contribution	2,604	3,645	16	16
Plan participants' contributions	12	13		1
Settlement/curtailment/acquisitions/dispositions, net	(1,393)	(43)		
Benefits paid	(2,208)	(2,163)	(13)	(9)
Exchange rate adjustment	32	20		
Ending balance at fair value	\$43,484	\$38,977	\$82	\$72

APPENDIX A. (Continued)

At September 30	Pensions		Other postretirement Benefits	
	2005	2004	2005	2004
<i>Reconciliation of funded status to net amounts recognized</i>				
Funded status-plan assets less than projected benefit obligation	\$(1,699)	\$(3,804)	\$(7,976)	\$(8,063)
Unrecognized net actuarial loss	12,989	13,756	2,333	2,676
Unrecognized prior service costs	1,368	1,365	(557)	(762)
Adjustment for fourth quarter contributions	10	752	141	135
Net amount recognized	\$12,668	\$12,069	\$(6,059)	\$(6,014)
<i>Amounts recognized in statement of financial position consist of</i>				
Prepaid benefit cost	\$13,251	\$12,588		
Intangible asset	66	225		
Accumulated other comprehensive loss	2,948	3,169		
Accounts payable and other liabilities	(649)	(744)	\$(70)	\$(55)
Accrued retiree health care			(5,989)	(5,959)
Accrued pension plan liability	(2,948)	(3,169)		
Net amount recognized	\$12,668	\$12,069	\$(6,059)	\$(6,014)

Source: The Boeing Company Form 10-K, filed with the SEC on February 28, 2006.

APPENDIX B. MODELS AND VARIABLES

The following models are estimated using ordinary least squares:

Model 1:

$$\begin{aligned}
 \text{SPREAD}_{i,t} = & \alpha_0 + \alpha_1 \text{ON_BS}_{i,t-1} + \alpha_2 \text{TIMES}_{i,t-1} + \alpha_3 \text{EBITDA}_{i,t-1} \\
 & + \alpha_4 \text{LEV}_{i,t-1} + \alpha_5 \text{LSIZE}_{i,t-1} + \alpha_6 \text{MB}_{i,t-1} \\
 & + \alpha_7 \text{FIRST_CALL}_{i,t} + \alpha_8 \text{LYRS}_{i,t} \\
 & + \alpha_9 \text{MRKT}_{i,t} + \alpha_{10} \text{SUB}_{i,t} + \alpha_{11} \text{ISS_SIZE}_{i,t} \\
 & + \sum_{j=1}^8 \gamma_0 \text{IND}_{i,t,j} + \sum_{t=1}^5 \gamma_0 \text{YR}_{i,t} + \varepsilon_{i,t}
 \end{aligned}$$

Model 2:

$$\begin{aligned}
 \text{SPREAD}_{i,t} = & \beta_0 + \beta_1 \text{FUNDED}_{i,t-1} + \beta_2 \text{TIMES}_{i,t-1} \\
 & + \beta_3 \text{EBITDA}_{i,t-1} + \beta_4 \text{LEV}_{i,t-1} + \beta_5 \text{LSIZE}_{i,t-1} \\
 & + \beta_6 \text{MB}_{i,t-1} + \beta_7 \text{FIRST_CALL}_{i,t} + \beta_8 \text{LYRS}_{i,t} \\
 & + \beta_9 \text{MRKT}_{i,t} + \beta_{10} \text{SUB}_{i,t} + \beta_{11} \text{ISS_SIZE}_{i,t} \\
 & + \sum_{j=1}^8 \gamma_0 \text{IND}_{i,t,j} + \sum_{t=1}^5 \gamma_0 \text{YR}_{i,t} + \varepsilon_{i,t}
 \end{aligned}$$

Model 3:

$$\begin{aligned}
 \text{SPREAD}_{i,t} = & \chi_0 + \chi_1 \text{ON_BS}_{i,t-1} + \chi_2 \text{UNREC}_{i,t-1} + \chi_3 \text{TIMES}_{i,t-1} \\
 & + \chi_4 \text{EBITDA}_{i,t-1} + \chi_5 \text{LEV}_{i,t-1} + \chi_6 \text{LSIZE}_{i,t-1} \\
 & + \chi_7 \text{MB}_{i,t-1} + \chi_8 \text{FIRST_CALL}_{i,t} + \chi_9 \text{LYRS}_{i,t} \\
 & + \chi_{10} \text{MRKT}_{i,t} + \chi_{11} \text{SUB}_{i,t} + \chi_{12} \text{ISS_SIZE}_{i,t} \\
 & + \sum_{j=1}^8 \gamma_0 \text{IND}_{i,t,j} + \sum_{t=1}^5 \gamma_0 \text{YR}_{i,t} + \varepsilon_{i,t}
 \end{aligned}$$

Models 4–6 are Models 1–3 above with the inclusion of $\text{RATE}_{i,t}$ as an additional independent variable.

Description	Variable	Measurement
Yield spread on new debt issue	$SPREAD_{i,t}$	Yield to maturity on a new debt issue minus the yield to maturity on a US Treasury bond of similar maturity, in basis points
Balance sheet pension amount under SFAS No. 87	$ON_BS_{i,t-1}$	Net of projected benefit obligation, fair value of pension plan assets, and unrecognized pension items, all divided by total assets
Balance sheet pension amount under SFAS No. 158	$FUNDED_{i,t-1}$	Net of projected benefit obligation and fair value of pension plan assets, all divided by total assets
Unrecognized pension items under SFAS No. 87	$UNREC_{i,t-1}$	Unrecognized prior service cost and unrecognized gains or losses, all divided by total assets
Times interest earned	$TIMES_{i,t-1}$	Net income plus interest expense, all divided by interest expense. Negative values are set equal to 0.
Earnings before interest, taxes, and depreciation	$EBITDA_{i,t-1}$	Earnings before interest, taxes, and depreciation, all divided by total assets
Leverage	$LEV_{i,t-1}$	Total long-term debt divided by total assets
Firm size	$LSIZE_{i,t-1}$	Natural logarithm of total assets
Growth opportunities	$MB_{i,t-1}$	Market value to book value per share ratio
Time to first call date	$FIRST_CALL_{i,t}$	Number of years to first possible call date of the debt issue, divided by the number of years to maturity of the debt issue
Years to maturity	$LYRS_{i,t}$	Natural logarithm of the number of years to maturity of the debt issue

(Continued)

Description	Variable	Measurement
Economic conditions	$MRKT_{i,t}$	Interest rate on a 10-year Treasury bond, issued in the same month as firm i 's issue
Debt issue size	$ISS_SIZE_{i,t}$	Net proceeds of the debt issue, in \$millions
Subordinated debt	$SUB_{i,t}$	Indicator variable that equals 1 if the debt is subordinated, else 0
Industry	$IND_{i,t}$	Indicator variable that equals 1 if the observation is in that one-digit SIC code industry, else 0
Year	$YR_{i,t}$	Indicator variable that equals 1 if the observation is in that year, else 0
Credit rating	$RATE_{i,t}$	Standard and Poor's credit rating on firm i 's debt issue, expressed in ordinal form. Higher values of $RATE_{i,t}$ indicate a lower (worse) credit rating

Note: Subscript i refers to firm, t refers to year, and j refers to industry.

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AN EXAMINATION OF COMMENT LETTERS TO THE IASC: SPECIAL PURPOSE ENTITIES

Robert K. Larson

ABSTRACT

While major strides toward the convergence of accounting standards have occurred, concern exists that self-interested political pressures, if effective, may create international accounting standards that are not always in the best interest of investors and others. This case study examines comment letters generated by an important accounting topic, Special Purpose Entities (SPEs), in order to gain further insight into whether concerns of political pressure in the development of international accounting standards have merit. Famous since Enron, SPEs are used in off-balance sheet financing vehicles that now involve trillions of dollars annually. During the period when the International Accounting Standards Committee (IASC) was trying to earn the support of the International Organization of Securities Commissions (IOSCO), the IASC's Standing Interpretations Committee (SIC) issued Draft Interpretation 12 (DI-12), Consolidation of Special Purpose Entities. DI-12 required SPEs to be consolidated more frequently than under US GAAP.

Although most respondents, including IOSCO, supported DI-12, about 25% adamantly opposed it. Opposition came from those in countries with more flexible rules on the consolidation of SPEs, including the staff of the Financial Accounting Standards Board and all other US letter writers.

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It is also possible that political considerations may have influenced some as Arthur Andersen and all banking interests opposed to DI-12 were heavily involved with SPEs. However, with the support of IOSCO and many others, the SIC's final SPE standard was even stricter than originally proposed.

1. INTRODUCTION

The development of solid accounting standards is the key requirement for strong global capital markets. Creating accounting standards may be viewed as a technical process, a political process, or both (Cooper & Robson, 2006; Whittington, 2005; Gilfedder & Ó hÓgartaigh, 2001). The American Institute of Certified Public Accountants, the International Federation of Accountants, and others believe the accounting profession must put the public interest before personal interest (Walker, 2005). However, Zeff (2002, 2006) is concerned that some may use self-interested considerations and pleadings in the standard setting process to the detriment of the interests of investors and other users. Given past examples of this behavior in many countries, Zeff (2002) suggests that political pressures may challenge the International Accounting Standards Board (IASB) as it seeks to establish high-quality International Financial Reporting Standards (IFRS). This issue is important because the US Securities and Exchange Commission (SEC) stresses that high-quality standards are key to full US acceptance of IFRS (Nicolaisen, 2005).

The purpose of this case study is to investigate whether political pressures and other concerns, rather than technical issues alone, may have affected the development of the international accounting rule for an important accounting issue, Special Purpose Entities (SPEs). SPEs are used in off-balance sheet financing vehicles that now involve trillions of dollars annually. The use of SPEs grew enormously during the 1990s around the world. SPEs were also ripe for abuse, as Enron, Dynegy, and others proved.

In order to increase its legitimacy in the 1990s, the IASB's predecessor, the International Accounting Standards Committee (IASC), wanted the International Organization of Securities Commissions (IOSCO) to endorse its standards. Before giving its endorsement, IOSCO wanted the IASC to have a comprehensive core of standards. IOSCO specifically suggested SPEs as a possible topic.

In this context, the IASC's Standing Interpretations Committee (SIC) issued Draft Interpretation 12 (DI-12), *Consolidation of Special Purpose*

Entities, in 1998. This proposal to establish international accounting rules specifically for SPEs required the consolidation of SPEs more often than under existing US rules. DI-12 proposed that firms should consolidate a SPE when, in substance, the company is able to control the SPE and obtain a majority of the benefits from the SPE's activities.

The analysis of DI-12 comment letters found that while most letters supported DI-12, seven letters were adamant in their opposition. Opposition came from respondents in countries with accounting rules that did not require SPEs to be consolidated as frequently as proposed by DI-12. All US respondents opposed DI-12, including the staff of the Financial Accounting Standards Board (FASB). The only public accounting firm opposing DI-12 was the main US office of Arthur Andersen (Andersen), the auditor for Enron and Dynegy. All banking interests opposed to DI-12 were actively involved in the marketing of SPEs, including Chase Manhattan (Chase) who participated with Enron in SPEs.

Common arguments DI-12 opponents use include: what is the proper definition of control; how and should a risk and reward approach be used; will DI-12 effectively require the consolidation of securitized instruments and leases; will DI-12 distort financial statements; will DI-12 have a negative economic impact; and should the IASB itself decide SPE accounting. These points often relate to the idea that DI-12 will force firms to consolidate SPEs that were specifically set up so that firms could avoid consolidating these activities.

Most respondents, including IOSCO, supported efforts for transparency and desired solid accounting rules that would be useful to investors and other users. After considering all input, the SIC ignored the negative comments and, if anything, issued an even stricter SPE standard (SIC 12) than DI-12.

2. THE DEVELOPMENT OF INTERNATIONAL ACCOUNTING STANDARDS FOR SPEs

The IASC and now the IASB (created in 2001) lead in the convergence of international accounting and reporting standards (Cox, 2007; Douplik & Perera, 2007; Nicolaisen, 2005). IFRS, previously known as International Accounting Standards (IASs), are the standards, or basis for standards, in dozens of countries (Deloitte, 2007a). The European Union (EU) requires IFRS, with minor exceptions, for use in their consolidated accounts by listed corporations. While IFRS now has greater legitimacy and acceptance, the

US SEC still requires non-domestic companies listed on US exchanges to reconcile IFRS financial statements to US GAAP. While supporting convergence, the SEC states that high-quality standards which provide transparency and full disclosure will be cornerstone in its decision whether to accept IFRS without reconciliation (Cox, 2007; Doupnik & Perera, 2007; Nicolaisen, 2005).

The IASC created the SIC in 1997 to address the SEC's requirement that IASs must be rigorously interpreted and applied in order to be accepted. The SIC's mission was to "consider, on a timely basis, accounting issues that are likely to receive divergent or unacceptable treatment in the absence of authoritative guidance" and "to enhance the rigorous application" of IAS (IASB, 1999, p. 16, 1159). The SIC's due process was similar to that of IASC's and FASB's. DIs were issued and all interested parties were invited to respond.¹

SPEs began in 1970 when Ginnie Mae (the Government National Mortgage Association) securitized government-insured mortgages (Ketz, 2003, p. 126). The term "securitization" comes from the original purpose of converting receivables into cash by converting them into a set of securities. What started as a way to monetize, through off-balance-sheet securitizations, substantial amounts of consumer receivables on balance sheets, became a vehicle for many other transactions, including the acquisition of plant and equipment through long-term leases, the funding of research and development activities, and the facilitation of other forms of off-balance-sheet financing (Hartgraves & Benston, 2002, p. 246). SPEs are also commonly used in synthetic leases, which were developed to provide the tax benefits of capital leases while allowing firms to have the financial reporting benefits of operating leases by removing liabilities from balance sheets (Ketz, 2003).

Although use of SPEs increased in the US during the 1980s, it accelerated rapidly in the early 1990s after a SEC staff interpretation of EITF 90-15, which in effect, only required SPE consolidation when there was not a minimum of 3%-of-assets of independent ownership. Continued attention led to three more US accounting rules in 1996: FASB 125, EITF 96-20, and EITF 96-21.² The value of securities using SPEs in the US grew to an estimated \$170 billion in 1997 (Reinebach, 1997) and \$6 trillion in the early 2000s (Ketz, 2003).

Europe saw increased interest in securitizations and synthetic leases in the mid-1990s as laws and regulations began to allow their use. Mortgage loan securitizations became common in the Netherlands in 1996 (Veenman, 1999). In 1997, German banks were allowed to securitize their loans and total European securitizations were estimated at \$30 billion (Reinebach, 1997). Early in its existence, the SIC was made aware of European utilization of SPEs.

While IAS 27 required consolidation of entities controlled by the reporting entity, it did not directly discuss SPEs nor provide explicit guidance on when to consolidate SPEs. In 1994, IOSCO's "Shiratori Letters" suggested that the IASC consider providing guidance for transactions involving SPEs (US SEC, 1997). Upon its inception, the SIC almost immediately began to discuss SPEs (IASC, 1997a, 1997b). In January 1998, SPEs were officially added to the agenda and the SIC tentatively concluded that control does not require voting power or equity participation (IASC, 1998a). The SIC issued DI-12 in July 1998 (IASC, 1998c) and requested that comment letters arrive by the end of August 1998.

DI-12 required consolidation of SPEs more frequently than under US GAAP due to the SIC's broader definition of control. DI-12 (para 7) stated that a SPE should be consolidated when, in substance, it is controlled by the reporting enterprise. DI-12 took a broader "risks and rewards" approach to control, and noted that control could occur regardless of whether a SPE was operating on "autopilot." DI-12 focused on four areas to determine control: activities, decision-making, benefits, and risks. Circumstances that indicate that an enterprise should consolidate a SPE include (1) when a SPE "is structured in a way that its activities are being conducted on behalf of the enterprise;" (2) when an enterprise "has the decision-making powers to obtain control of the SPE or its assets;" (3) the enterprise "has rights to obtain the majority of the benefits of the SPE;" or (4) the enterprise "bears significant residual risks related to the SPE" (DI-12, para 9). DI-12 required SPEs to be consolidated more often than rules then used in several countries, including France, Germany, Japan, Switzerland, and the US.

3. PREVIOUS LITERATURE AND RESEARCH QUESTIONS

While many studies examine the lobbying or comment letter writing done during the formation of US and other national accounting standards, few focus on these activities during the development of standards under the IASC or IASB (Durocher, Fortin, & Cote, 2007; Cooper & Robson, 2006; Johnston & Jones, 2006; Georgiou, 2005; Kwok, 1999; Walker & Robinson, 1993; Watts & Zimmerman, 1986). Barth (2000) suggests it is important to understand how international accounting standard setters make decisions. Cooper and Robson (2006, p. 430) believe that the IASB is "worthy of further serious and sustained study."

The IASC and IASB are different from national accounting standard setters in that international accounting standard setters have a much more diverse set of constituents and issues to confront (Tokar, 2005). Wallace (1990) thought that investors, international professional accounting firms, trade unions, preparers, creditors, suppliers, the public, and the international community (e.g. World Bank) might all seek to influence the development of international accounting standards. Wallace (1990) stated that for the IASC to be a legitimate organization, it needed to be acceptable to its constituents.

While Kenny and Larson (1995) and Larson (2002) used institutional theory to suggest that constituent involvement during standard setting should increase the IASC's legitimacy, both studies found limited participation. Combining studies, 53 respondents wrote 70% of the 1,340 comments letters for the IASC Exposure Drafts (EDs) and the SIC DIs examined. Standish (2003) sees major participation in the international accounting standard setting process as requiring significant costs of intellectual and technical resources.

While participation (or lack thereof) may have affected the IASC's legitimacy, it also shaped the accounting standards issued. For several IASC issues from 1989 to 1992, Larson and Brown (2001), Guenther and Hussein (1995), and Kenny and Larson (1993) found comment letter writers to commonly oppose EDs that did not allow accounting or tax rules which were allowed or required in their own home country. Development of the IASC's SPE accounting rules is an opportunity to further explore constituents' comment letters in an area now widely acknowledged to be susceptible to accounting manipulation.

Research Question 1 (RQ1): Did comment letter writers support (oppose) DI-12 if their home country's accounting standards were as strict (more flexible) in their requirements to consolidate SPEs?

Research has identified economic incentives for corporations to lobby FASB on various accounting rules, particularly when they affect debt positions, broaden or limit management's ability to manage reported earnings, or affect management compensation (Johnston & Jones, 2006; Georgiou, 2005; Watts & Zimmerman, 1986). Incentives to lobby are related to two contrasting views on the nature of the accounting standard setting process: the technical view and the political view (Gilfedder & Ó hÓgartaigh, 2001). The technical view sees standard setting essentially as one of identifying the best accounting practice for a particular issue. In the political view, "policy decisions represent choices between conflicting

interests that might be better served by different practices” (2001, p. 96). The political view and the economic incentives approach are consistent with a corporate political information strategy where firms inform decision makers of their policy preferences as well as the costs and benefits of different policies (Hillman & Hitt, 1999).

While Cooper and Robson (2006, p. 426) suggest that “perhaps we have gone too far in neglecting to study the overt use of power in standard setting ...,” interest is increasing over the influence of politics in shaping IFRS. In part, this may be due to the strong opposition to IASB rules for financial instruments (Zeff, 2006; Whittington, 2005; Walton, 2004). Whittington (2005, p. 144) bluntly states that “accounting has become explicitly a political issue.” Kwok (1999) explores the relative power of four key stakeholder groups – accountants, preparers, regulators, and users – to affect two mid-1990s IASC proposals and finds that while a mixed power model appears to prevail, it is difficult to issue a rule adverse to preparers’ preferences.

While constituent participation from an institutional perspective is usually seen as advantageous, Zeff (2002, p. 43) believes that the IASB may trigger political pressures when it tries “to prescribe specific accounting treatments, eliminate alternative treatments, impose additional disclosure requirements, or tighten the allowed interpretations.” Zeff (2002, 2006) cites examples where industry and other affected parties moved aggressively to prevent a standard setter from imposing an objectionable rule. While Zeff (2006) notes that “political lobbying” must be more than writing comment letters, he and Georgiou (2004) agree that this activity is often part of it.

Research Question 2 (RQ2): Are there any indications that comment letter writers might be opposing DI-12 due to self-interest considerations?

4. METHODOLOGY

While preparers and others can affect the development of accounting standards through various channels and at various stages during due process, this paper focuses on involvement through the writing of comment letters (Walker & Robinson, 1993). SIC DI-12 comment letters were obtained directly from the IASC. Data on respondents’ home country SPE accounting rules were gathered from *GAAP 2000* (Nobes, 2000) and *GAAP 2001* (Nobes, 2001).

Content analysis was used to analyze all 29 DI-12 comment letters.³ Responses were categorized based on their overall position, specific points, and tone of comments on various aspects of DI-12. All comment letters were read by two people. Letters were closely reexamined if the readers disagreed on a point. Most letters were quite clear in their position. Only three letters were fairly neutral in that their comments were brief and mostly technical in nature. Some interpret neutral comment letters as supportive of a proposal.

The 29 responses were derived from 28 physical letters. A joint response was submitted by the Australian Accounting Standards Board with the Public Sector Accounting Standards Board of the Australian Accounting Research Foundation.

For RQ2, respondents opposing DI-12 and the arguments employed against DI-12 were closely examined. Corporations and auditor ties to corporations were explored because research suggests that “some corporations may not bother to expend time and money on the preparation of written submissions if they believe that their auditors will be making submission ‘in their interests’” (Walker & Robinson, 1993, p. 21). Research finds that many corporations often ask and expect their auditors to represent their interests before accounting standard setters, and that auditors’ views presented to standard setters often correspond to their clients (Georgiou, 2002, 2004; Van Lent, 1997).

5. ANALYSIS AND DISCUSSION

5.1. Overview of Type of Respondents and Their Positions

Table 1 lists all respondents and their overall position on DI-12. Most respondents were professional accountancy bodies (11, 38%), accounting standard setters (5, 17%), public accounting firms (4, 14%), or banking interests (4, 14%). While only five respondents were not frequent SIC responders (Larson, 2002), four of the seven letters opposing DI-12 were submitted by infrequent responders. Research indicates that occasional lobbyists respond when they oppose proposed changes (Johnston & Jones, 2006).

Overall, 19 respondents supported DI-12, 3 were neutral, and 7 opposed it. Most IASC members, public accounting firms, and accounting standard setters supported DI-12. IOSCO, which has an active member in the SEC, commended “the SIC for its efforts to develop more explicit guidance in this difficult and complex area” (IASCO, 1998b, p. 65). IOSCO’s letter came from

Table 1. Respondents and Their Overall Position Regarding SIC Draft Interpretation 12, *Consolidation of Special Purpose Entities*, by Type of Respondent.

Overall Position	Type of Respondent
	<i>IASC Member Bodies:</i>
Supported	The Institute of Chartered Accountants in Australia ^a
Opposed	The Canadian Institute of Chartered Accountants (CICA) ^a
Supported	Certified General Accountants' Association of Canada (CGA) ^a
Supported	Foreningen af Statsautoriserede Revisorer (FSR) (Danish Accounting Standards Committee) ^a
Neutral ^b	Institut der Wirtschaftsprüfer (IDW) (Germany) ^a
Opposed	Japanese Institute of Certified Public Accountants (JICPA) ^a
Supported	Institute of Chartered Accountants of New Zealand (ICANZ) ^a
Supported	The South African Institute of Chartered Accountants (SAICA) ^a
Supported	Foreningen Auktoriserede Revisorer (FAR) (Swedish Institute of Authorized Public Accts) ^a
Supported	Association of Chartered Certified Accountants (ACCA) (UK) ^a
Neutral ^b	The Institute of Chartered Accountants in England & Wales ^a
	<i>Accounting Standard Setting Bodies:</i>
Supported	Australian Accounting Standards Board – Joint Response with PSASB ^a
Supported	Public Sector Actg Standards Board of the Australian Accounting Research Foundation ^a
Supported	Conseil Nationale de la Comptabilité (CNC) (France) ^a
Supported	Raad voor de Jaarverslaggeving (Netherlands' Council for Annual Reporting) ^a
Opposed	Financial Accounting Standards Board (FASB), staff, (US)
	<i>Other Accounting Organizations:</i>
Neutral ^b	Federation des Experts Comptables Europeens (FEE) (European) ^a
Supported	London Society of Chartered Accountants (UK) ^a
	<i>Public Accounting Firms:</i>
	Arthur Andersen ^a (two different branches):
Supported	Bernard Jaudeau (France)
Opposed	Arthur Andersen (US)
Supported	KPMG ^a (London Office)
Supported	PricewaterhouseCoopers ^a (London Office)
	<i>Banking Interests:</i>
Supported	Commission Bancaire – General Secretary of Banking Commission (Financial Regulator) (France)
Opposed	Nederlandse Vereniging van Banken (NVB) (Netherlands Bankers' Association)
Opposed	UBS (Bank) (Switzerland) ^a
Opposed	Chase Manhattan Corp (now part of J. P. Morgan) (Bank) (US)
	<i>Other:</i>
Supported	Group of 100 (Association of senior corporate and govt actg and financial executives) (Australia) ^a
Supported	International Organization of Securities Commissions (IOSCO) ^a
	Leaseurope – European Federation of Equipment Leasing Company Associations (Brussels)
Supported	Letter Dated Sept. 10, 1998 (before Comment Letter Deadline)
Opposed	Letter Dated Oct. 27, 1998 (after SIC made their final decision) ^c

^aReported by Larson (2002) as responding to over 30% of all SIC DIs examined.

^bWhile categorized as neutral, all three made only technical comments that indirectly may indicate overall support of DI-12.

^cListed for information purposes, not included in most of the analysis.

its Working Party No. 1, which carefully evaluated all IASs to determine whether IOSCO should endorse them, and which sent comment letters to alert the IASC and SIC to IOSCO's views on important matters while the "core standards work program" was in progress (IOSCO, 2000). IOSCO was a member of the IASC's Consultative Group and a non-voting observer at SIC meetings.

Seven opposed DI-12, including all three US respondents, the Canadian Institute of Chartered Accountants (CICA), and the Japanese Institute of Certified Public Accountants (JICPA). The only standard setter opposed was the FASB's staff, whose long letter strongly disagreed with DI-12. The only accounting firm opposed was Andersen's main US office. While more banking entities (four) responded than to any other of the first 23 SIC DIs (Larson, 2002), UBS, Chase, and the Netherlands Bankers' Association opposed it.

A contradictory respondent was leaseurope – European Federation of Equipment Leasing Company Associations. Their first letter is polite, positive, and diplomatically suggests some simple clarifications. Their second letter, sent soon after SIC 12 was approved, details strong opposition to DI-12.

5.2. Positions of Respondents by Home Country SPE Accounting Rules

Respondents were classified by home country and their responses were compared with their home country's rules regarding SPEs in order to investigate RQ1 (see Table 2). Twenty-six respondents had an identifiable home country. Ten of the seventeen respondents supporting DI-12 came from places with accounting rules similar to DI-12. Conversely, only one of the seven respondents opposing DI-12 came from a country with standards not materially different from DI-12. Test results show a significant difference in position based on their home country's rules.⁴ Interestingly, while the CICA's opposition letter wants the SIC to consider FASB's views regarding SPEs, the Canadian Certified General Accountants Association noted that DI-12 is consistent with Canadian GAAP.

Respondents opposing DI-12 due to differences from their home country's rules formulated two basic arguments. One point was to maintain the status quo. For example, the Netherlands Bankers' Association stated that DI-12 was not consistent with Dutch rules. Conversely, while FASB's staff opposed DI-12 on a more conceptual level, issues often related to the fact that DI-12 required consolidation of SPEs that would not need to be

Table 2. Respondents' Position by Home Country Regarding SIC Draft Interpretation 12 (DI-12), *Consolidation of Special Purpose Entities*, and whether DI-12 Would Require Consolidation of Special Purpose Entities (SPEs) More Often than under Their Home Country's Accounting Rules.

Panel A: Detailed analysis

Country	Supported	Neutral	Opposed	DI-12 Required More Consolidation of SPEs than Under Home Country's Rules ^b
Australia	4			No
Canada	1		1	No
Denmark	1			Yes, due to more lenient rules than IAS 27. ^c
European	1	1		–
France	3			Yes, different SPE rules, must be a shareholder to consolidate an SPE.
Germany		1		Yes, no rules exist for SPEs; also due to more lenient rules than IAS 27.
International	1			–
Japan			1	Yes, due to more lenient rules than IAS 27.
Netherlands	1		1	Yes, no rules exist for SPEs; also due to more lenient rules than IAS 27. ^d
New Zealand	1			Yes, due to more lenient rules than IAS 27.
South Africa	1			No
Sweden	1			Yes, due to more lenient rules than IAS 27.
Switzerland			1	Yes, due to more lenient rules than IAS 27.
United Kingdom	4	1		No
United States	–	–	3	Yes, different rules exist for SPEs; also due to more lenient rules than IAS 27.
Total	19	3 ^a	7	

Panel B: Summary of respondents' positions

Home Country's Rules Regarding SPEs	Supported	Neutral	Opposed	Total
Standards similar to DI-12	10	1	1	12
Standards different from DI-12 and would not require SPEs to be consolidated as frequently	7	1	6	14
Total ^c	17	2	7	26

^aWhile categorized as neutral, all three made only technical comments that may indicate overall support of DI-12.

^bData Source: *GAAP 2000 Nobes (2000)*, except Switzerland, where more accurate data from *GAAP 2001 Nobes (2001)* was utilized.

^c*GAAP 2001* reports that in 2001 at least one share of stock must be owned before an SPE can be consolidated.

^d*GAAP 2001* reports that in 2001 the Netherlands adopted rules for SPEs consistent with SIC 12.

^ePanel B totals do not match Panel A totals because three respondents are not from one particular country.

consolidated under US GAAP. The FASB staff letter notes several parts of DI-12 that go beyond the US view of control and that were considered and rejected by them, the EITF, and FASB.

5.3. Common Arguments Stated against DI-12

Many arguments against DI-12 were related to each other and frequently technical in nature, but often centered on the idea that DI-12 will force companies to consolidate SPEs that were set up so that firms could avoid consolidating these activities. The arguments can be stated as a series of questions (Table 3 summarizes the arguments of those opposing DI-12).

What is the proper definition of control? Concerns about the definition of control range from a desire for clearer definitions and better examples, to disagreeing with the fact that DI-12 did not require majority ownership as a prerequisite for control. A frequent comment was that DI-12 might require one SPE to be consolidated by two or more different corporations.

Should a risk and reward approach be used to consolidate SPEs? If yes, how? Beyond strictly disagreeing with this approach, one concern was how to appropriately and consistently determine when to consolidate under a risk and rewards approach. Some strongly objected to the idea that DI-12 might effectively undo the securitization process set up by some firms using SPEs.

Will DI-12's consolidation of securitized instruments have a negative economic impact? It was noted that if the US adopted rules similar to DI-12, then major economic consequences would occur, as large numbers of SPEs with billions of dollars of transactions would have to be consolidated with their parent corporations. UBS states that DI-12 penalizes those that establish SPEs "in order to derecognize assets to be funded by outside investors" (IASB, 1998b, p. 103). UBS further believes that those following DI-12 would be at a significant business disadvantage as compared to those using other standards.

Will DI-12 distort financial statements? This more theoretical argument centers on the idea that requiring consolidation of these SPEs would create a situation where the financial statements are not representationally faithful to the economic substance of the underlying transactions involving the SPEs.

Will DI-12 effectively require the consolidation of synthetic leases? Three opponents cite the negative impact on leasing. Leaseurope's second letter was the most detailed in explaining DI-12's flaws, including the issues of autopilot, control, risk and rewards, the effect on lease accounting, and the

Table 3. Summary of Major Issues Cited by Respondents Opposing DI-12.

Respondent (Order by Country)	Domestic GAAP: DI-12 is Inconsistent with Respondent's Home Country GAAP.	Control: Control Needs a Clearer, Better, or Different Definition. Ex. Multiple Firms Might End Up Consolidating the Same SPE.	Risk & Rewards; Securitization: Concerns about Risk & Reward Approach for Consolidating SPEs. Ex. Conflicts with Securitization Process (E62).	Economic Impact: DI-12 Would Negatively Impact Companies, Financial Markets, &/or Worldwide Economies.	Misleading Financial Statements: Accounting Results Required by DI-12 Consolidations Not Representationally Faithful to Economic Substance of Transactions Involving the SPE.	Leases: DI-12 Might Require Leases Set Up Through SPEs to Be Consolidated.	Too Important for IFRIC: Issue Should Not Be Decided by IFRIC. SPEs Should Be Addressed by the IASB Itself.
Canada: The Canadian Institute of Chartered Accountants (CICA)	X ^a	X					X
Japan: Japanese Institute of Certified Public Accountants (JICPA)			X				X
Netherlands: Nederlandse Vereniging van Banken (NVB) (Netherlands Bankers' Association)	X		X		X	X	
Switzerland: UBS (Bank)		X	X	X			X
United States: Arthur Andersen		X	X			X	X
Chase Manhattan Corp (now part of J. P. Morgan) (Bank)				X	X		
Financial Accounting Standards Board (FASB), Staff	X	X	X				
European: Leaseurope – European Federation of Equipment Leasing Company Associations		X	X			X	X
Oct. 27, 1998 letter (after SIC made final decision)							
Total:	3 (4)	6	7	2	2	3	5

^aWhile DI-12 was consistent with Canadian GAAP, the CICA notes that DI-12 was not consistent with US GAAP.

possible multiple consolidations of SPEs. Overall, common arguments against DI-12 are used to show the negative impact on leases.

Should the IASC itself determine SPE accounting? Andersen, the CICA, the JICPA, and UBS believed this issue too important for the SIC. They wanted the IASC itself to approve any SPE rule. Given the importance of SPEs, this view may have merit. Alternatively, it could be seen as a tactic to delay approval of any SPE standard. Interestingly, all wanting deferral of the SPE issue to the IASC also opposed DI-12 on other grounds (see Table 3).⁵

Each argument may have merit and many issues are mentioned by multiple respondents, including some that supported DI-12. However, in light of RQ2, the long list of possible reasons to reject DI-12 is reminiscent of Watts and Zimmerman's (1979, p. 300) notion that the purpose of practical and theoretical arguments against a proposed standard may essentially just be supplying "excuses which satisfy the demand created by the political process."

5.4. DI-12 Opposition and Ties to SPEs

While not known how positions were specifically derived, evidence indicates that Andersen, Chase, UBS, and the Dutch banks were all heavily involved with SPEs at that time. A major client of Andersen was Enron, which in 2000 paid it \$25 million for audit work and \$23 million for other services (Kahn, 2002). Enron used many SPEs. As documented, there is little doubt that Andersen knew of Enron's SPEs and whether they met US rules for consolidation (Benston & Hartgraves, 2002). Also, the SEC fined Houston-based Dynegy \$3 million for improper use of SPEs which had been approved by their auditor, Andersen (Barboza, 2002). Andersen's strong opposition to DI-12 is clear. Beyond general opposition, they directly mention DI-12's implications for financial instruments, securitization, and leases. Their letter suggests that Andersen knew of widespread SPE use: "The use of SPE's to accomplish business, economic and financial statement objectives have grown significantly in the recent past. We expect that trend to continue ..." (IASC, 1998b, p. 85).

Chase was deeply involved with SPEs and securitizations in 1997 and 1998 (Reinebach, 1997; Dennis, 1998). A Chase accounting manager in 1998 admitted that the bank often used SPEs to "create extremely complicated transactions to accommodate a particular customer's needs" (Dennis, 1998, p. 78). Chase participated in several SPEs involving Enron, including the creation of Mahonia which helped Enron to overstate its cash flow and

decrease its debt (WSJ, 2003, p. A10). Copies of e-mails suggest that Chase was acutely aware that Enron found transactions involving SPEs to be highly desirable (Beckett & Cohen, 2003). J. P. Morgan Chase & Co. (Chase's identity after a merger) took a \$1.3 billion write-off due to Mahonia (Oster & Smith, 2003). Chase strongly opposed DI-12, noted its conflict with US GAAP, and listed a long string of arguments against consolidating SPEs, including the "impact to the financial markets and the worldwide economies" (IASC, 1998b, p. 112).⁶

European banking interests opposed to DI-12 were also involved with SPEs. In 1997, UBS (formerly Union Bank of Switzerland) was actively pursuing European securitization business (Reinebach, 1997) and all major Dutch banks were deeply involved in mortgage loan securitizations (Veenman, 1999).

5.5. Response of SIC to Comment Letters

A careful comparison between DI-12 and SIC 12 found that the SIC made wording changes in about three dozen places. Most were fairly minor wording changes or added language that clarified the meaning intended in DI-12. The most common changes were to clarify the meaning of control and control indicators. Words were also added to clarify the issue of "autopilot" mechanisms. A few changes better aligned SIC 12 with IAS 27. Two changes better indicated the intentions of the appendix. Overall, the changes made the rules clearer, improved their understandability, and increased their consistency both internally and with existing IAS. Collectively, the changes strengthened SIC 12's rules to require the consolidation of many SPEs. For example, SIC 12 (para 9) was strengthened to state that "control may exist even in cases where an enterprise owns little or none of the SPE's equity." The SIC ignored requests to eliminate or significantly weaken DI-12, and instead used many suggestions from IOSCO and other DI-12 supporters.

Studies of earlier issues going through the IASC's deliberative process found harmonization slowed by decisions to allow more accounting alternatives when faced with significant opposition (Larson & Brown, 2001; Kwok, 1999; Guenther & Hussein, 1995; Kenny & Larson, 1993). Conversely, the SIC stood firm with DI-12 and, despite some strong opposition, approved SIC 12 in 1998. The SIC's resolve to maintain a strong accounting position with regard to SPEs supports the view that the IASC's due process matured over time (Roberts, Weetman, & Gordon, 2002). This

is also consistent with the idea that the IASC tried to meet IOSCO's expectations (Doupnik & Perera, 2007; Roberts et al., 2002).

After Enron, the press reported that the IASB's chair, David Tweedie, said that Enron's accounting for SPEs "couldn't have happened" if IASs were used (Herdman, 2002). While all parties backed away from that idea, it supports the notion that the SIC's SPE rules were seen as tougher than US GAAP.⁷

6. SUMMARY

The growing global convergence of accounting standards suggests that the development of international accounting standards deserves closer attention (Barth, 2000). The study examines the comment letters associated with the development of an international accounting rule for SPEs, an important topic. Most respondents against DI-12 came from countries with rules not requiring the consolidation of SPEs as often as under DI-12. Conversely, most DI-12 supporters' home countries had similar SPE accounting rules. The case finds that resistance to change from one's own GAAP still exists. The EU's initial refusal to endorse the IASB's new segment reporting standard illustrates that point.

Most respondents, including IOSCO and a majority of public accounting firms, accounting standard setters, and professional accountancy bodies, supported the SIC's efforts to create a good SPE accounting standard, which is consistent with a technical view of standard setting. RQ2 asked whether self-interest considerations could have encouraged affected organizations to oppose DI-12. The case's small sample size is a major limitation that precludes any generalizable conclusions. What can be suggested is that in this particular case, opposition by banking interests actively marketing SPEs and Andersen with clients using SPEs might be interpreted as resulting from political considerations to support the interests of themselves or their major clients. Further research needs to explore the factors influencing convergence and concerns regarding possible political pressure in the development of international accounting standards.

By examining DI-12, this paper provides better understanding of the evolving influences on the IASC. In the late 1990s, the IASC worked hard to gain acceptance by IOSCO and the SEC. SIC approval of a strong SPE standard, even with some opposition, supports observations that the IASC changed and matured over time. The topic is also important because the IASB plans to issue a discussion paper on consolidation (including SPEs) in

the second half of 2007 and an ED for a new standard in 2008 (IASB, 2007). This analysis is relevant to it as the IASB is revisiting many of the same issues the SIC confronted.

NOTES

1. For further information on the SIC, see Larson (2002). He examines the SIC's due process, membership, constituents' statements to the SEC about the SIC, and the letter writers commenting on its first 23 Draft Interpretations.

2. For a more complete discussion of US accounting rules on SPEs, see Benston and Hartgraves (2002), Hartgraves and Benston (2002), and Holtzman, Venuti, and Fonfeder (2003). Ketz (2003) provides an excellent overview of how SPEs work in Ch. 6: How to Hide Debt with Special-Purpose Entities.

3. If the second letter from leaseurope is not counted, the 29 comment letters for DI-12 tie with DI-3 and DI-8 for the most of comment letters of any SIC DI. However, this response level is much lower than almost all IASC EDs since IASC comment letters were made available to the public in 1989.

4. A χ^2 test was performed on data from Table 2, Panel B (excluding the neutral column). The χ^2 was significant at $p=0.047$, but more than 20% of the cells had an expected value of less than 5. Therefore, Fisher's exact test was done and the results were significant at $p=0.059$ (one-sided) and $p=0.078$ (two-sided).

5. The issue of when a main accounting standard setting body or its interpretation affiliate should set GAAP deserves further future research.

6. While unrelated to this study, J. P. Morgan Chase & Co. was accused of using its seat on the US EITF to block accounting rules that may have significantly affected its financial position (Weil, 2002).

7. Since SIC 12 was issued, the only change was the 2004 decision to remove the exclusion of equity compensation plans. However, many changes occurred for SPE accounting in the US due to the issuance of FAS 140 and FIN 46(R). FIN 46 introduced the variable interest entity (VIE) model. An SPE may or may not be considered a VIE, and vice versa. There are also different criteria for consolidation. These differences mean that an SPE required to be consolidated under SIC 12 may not be required to do so under US GAAP, and vice versa. In 2003, the IASB added SPEs to its agenda. Since then, the IASB has discussed SPEs several times and noted the significant differences with US GAAP. The IASB plans to issue a discussion paper on SPEs in late 2007 and hopes for major progress in 2008 (Deloitte, 2007b, 2007c; IASB, 2007).

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REFERENCES

- Barboza, D. (2002). Dynegy to pay \$3 million in settlement with S.E.C. *The New York Times* (September 25), p. 6.
- Barth, M. E. (2000). Valuation-based accounting research: Implications for financial reporting and opportunities for future research. *Accounting and Finance*, 40(1), 7–31.
- Beckett, P., & Cohen, L. P. (2003). J. P. Morgan is still shadowed by Enron links. *Wall Street Journal*, (January 16), p. C1, C3.
- Benston, G. J., & Hartgraves, A. L. (2002). Enron: What happened and what we can learn from it. *Journal of Accounting and Public Policy*, 21, 105–127.
- Cooper, D. J., & Robson, K. (2006). Accounting, professions and regulation: Locating the sites of professionalism. *Accounting, Organizations and Society*, 31, 415–444.
- Cox, C. (2007). Speech by SEC Chairman: Chairman's Address to the SEC Roundtable on International Financial Reporting Standards. (March 6) Available at: www.sec.gov/news/speech/2007/spch030607cc.htm (accessed May 31, 2007).
- Deloitte. (2007a). Country and regional accounting standards updates. Available at: <http://www.iasplus.com> (accessed May 31, 2007).
- Deloitte. (2007b). IASB Agenda Project: Control, consolidation including special purpose entities. Available at: <http://www.iasplus.com/agenda/consol.htm> (accessed May 31, 2007).
- Deloitte. (2007c). Interpretations: SIC 12. Available at: <http://www.iasplus.com/interps/sic012.htm> (accessed May 31, 2007).
- Dennis, A. (1998). Decoding the standards. *Journal of Accountancy*, 185(2), 77–79.
- Doupnik, T., & Perera, H. (2007). *International accounting*. Boston: McGraw-Hill Irwin.
- Durocher, S., Fortin, A., & Cote, L. (2007). Users' participation in the accounting standard-setting process: A theory-building study. *Accounting, Organizations and Society*, 32, 29–59.
- Georgiou, G. (2002). Corporate non-participation in the ASB standard-setting process. *European Accounting Review*, 11(4), 699–722.
- Georgiou, G. (2004). Corporate lobbying on accounting standards: Methods, timing and perceived effectiveness. *Abacus*, 40(2), 219–237.
- Georgiou, G. (2005). Investigating corporate management lobbying in the U.K. accounting standard-setting process: A multi-issue/multi-period approach. *Abacus*, 41(3), 323–347.
- Gilfedder, D., & Ó hÓgartaigh, C. (2001). Participation and non-participation in the standard setting process. In: S. McLeay & A. Riccaboni (Eds), *Contemporary issues in accounting regulation*. Boston: Kluwer Academic Publishers.
- Guenther, D. A., & Hussein, M. E. A. (1995). Accounting standards and national tax laws: The IASC and the ban on LIFO. *Journal of Accounting and Public Policy*, 14, 115–141.

- Hartgraves, A. L., & Benston, G. J. (2002). The evolving accounting standards for special purpose entities and consolidations. *Accounting Horizons*, 16(3), 245–258.
- Herdman, R. K. (2002). Speech by SEC Staff: Moving toward the globalization of accounting standards (Cologne, Germany, April 18). Available at: www.sec.gov/news/speech/spch554.htm (accessed May 31, 2007).
- Hillman, A. J., & Hitt, M. A. (1999). Corporate political strategy formulation: A model of approach, participation, and strategy decision. *The Academy of Management Review*, 24(4), 825–842.
- Holtzman, M. P., Venuti, E., & Fonfeder, R. (2003). Enron and the raptors. *The CPA Journal*, 73(April), 24–33.
- International Accounting Standards Board (IASB). (2007). IASB work plan. Available at: <http://www.iasb.org> (accessed May 31, 2007).
- International Accounting Standards Committee (IASC). (1997a). Further items discussed. *News From the SIC* (1), July, p. 2.
- IASC. (1997b). Further items discussed. *News From the SIC* (2), November, p. 2.
- IASC. (1998a). New agenda items. *News From the SIC* (3), January, p. 2.
- IASC. (1998b). *Comment Letters on Draft Interpretations: SIC-D12 consolidation of special purpose entities, SIC-D13 jointly controlled entities – Non-monetary contributions by venturers, SIC-D14 property, plant and equipment – Compensation for the impairment or loss of items, SIC-D15 incentives in an operating lease, SIC-D16 presentation of treasury shares*. London: IASC.
- IASC. (1998c). *Draft Interpretation SIC – D12, consolidation of special purpose entities*. London: IASC.
- IASC. (1999). *International accounting standards 1999*. London: IASC.
- International Organization of Securities Commissions (IOSCO). (2000). *IASC Standards – Assessment Report*. Available at: www.iosco.org (accessed May 31, 2007).
- Johnston, D., & Jones, D. A. (2006). How does accounting fit into a firm's political strategy. *Journal of Accounting and Public Policy*, 25, 195–228.
- Kahn, J. (2002). One plus one make what? *Fortune (Europe)*, 145(1), 54–56.
- Kenny, S. Y., & Larson, R. K. (1993). Lobbying behavior and the development of international accounting standards: The case of the IASC's joint venture project. *European Accounting Review*, 2(3), 531–554.
- Kenny, S. Y., & Larson, R. K. (1995). The development of international accounting standards: An analysis of constituent participation in standard-setting. *The International Journal of Accounting*, 30(4), 283–301.
- Ketz, J. E. (2003). *Hidden financial risk: Understanding off-balance sheet accounting*. Hoboken, NJ: Wiley.
- Kwok, W. C. C. (1999). *Development of international accounting standards: An analysis of power and policy-making*. Ph.D. dissertation, University of Western Ontario.
- Larson, R. K. (2002). The IASC's search of legitimacy: An analysis of the IASC's Standing Interpretations Committee. *Advances in International Accounting*, 15, 79–120.
- Larson, R. K., & Brown, K. L. (2001). Lobbying of the International Accounting Standards Committee: The case of construction contracts. *Advances in International Accounting*, 14, 47–73.
- Nicolaisen, D. T. (2005). Statement by SEC Staff: A securities regulator looks at convergence. (April) Available at: www.sec.gov/news/speech/spch040605dtn.htm (accessed June 28, 2006).

- Nobes, C. W. (Ed.) (2000). *GAAP 2000, a survey of National Accounting Rules in 53 countries*, with support from Andersen, BDO, Deloitte Touche Tohmatsu, Ernst & Young International, Grant Thornton, KPMG, and PricewaterhouseCoopers.
- Nobes, C. W. (Ed.) (2001). *GAAP 2001, a survey of National Accounting Rules benchmarked against international accounting standards*, with support from Andersen, BDO, Deloitte Touche Tohmatsu, Ernst & Young, Grant Thornton, KPMG, and PricewaterhouseCoopers.
- Oster, C., & Smith, R. (2003). Enron deals cost J. P. Morgan; Bank takes \$1.3 billion charge. *Wall Street Journal*, 241(January 3), p. A1, A3.
- Reinebach, A. (1997). Securitizing Europe. *Investment Dealers' Digest*, 63(49), 14–18.
- Roberts, C., Weetman, P., & Gordon, P. (2002). *International financial accounting: A comparative approach* (2nd ed.). Harlow: Pearson Education Ltd.
- Standish, P. (2003). Evaluating national capacity for direct participation in international accounting harmonization: France as a test case. *Abacus*, 39(2), 186–210.
- Tokar, M. (2005). Convergence and the implementation of a single set of global standards: The real-life challenge. *Accounting in Europe*, 2, 47–68.
- U.S. Securities and Exchange Commission (SEC). (1997). *Report on promoting global preeminence of American Securities Market*. Washington, DC: US SEC.
- Van Lent, L. (1997). Pressure and politics in financial accounting regulation: The case of the financial conglomerates in the Netherlands. *Abacus*, 33(1), 88–114.
- Veenman, F. (1999). Securitization of Dutch residential mortgages. *Euromoney Guide to The Netherlands Supplement* (June), 11–13.
- Walker, D. M. (2005). The state of the accountability profession. *Journal of Accountancy*, 200(4), 26–27.
- Walker, R. G., & Robinson, P. (1993). A critical assessment of the literature on political activity and accounting regulation. *Research in Accounting Regulation*, 7, 3–40.
- Wall Street Journal (WSJ). (2003). Morgan's costly virtue. *Wall Street Journal*, 241(January 3), p. A10.
- Wallace, R. S. O. (1990). Survival strategies of a global organization: The case of the International Accounting Standards Committee. *Accounting Horizons*, 4, 1–22.
- Walton, P. (2004). IAS 39: Where different accounting models collide. *Accounting in Europe*, 1, 5–16.
- Watts, R. L., & Zimmerman, J. L. (1979). The demand for and supply of accounting theories: The market for excuses. *The Accounting Review*, 54(2), 273–305.
- Watts, R. L., & Zimmerman, J. L. (1986). *Positive accounting theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Weil, J. (2002). Should J. P. Morgan set rules for J. P. Morgan? *Wall Street Journal*, 240(October 8), p. C1, C3.
- Whittington, G. (2005). The adoption of international accounting standards in the European Union. *European Accounting Review*, 14(1), 127–153.
- Zeff, S. A. (2002). “Political” lobbying on proposed standards: A challenge to the IASB. *Accounting Horizons*, 16(1), 43–54.
- Zeff, S. A. (2006). Political lobbying on Accounting Standards – National and international experience. In: C. Nobes & R. Parker (Eds), *Comparative international accounting* (9th ed., pp. 189–218). Harlow, UK: Prentice Hall Financial Times.

DEMOGRAPHIC CHALLENGES FACING THE CPA PROFESSION

Julia Grant

ABSTRACT

Prior research (Young, 1995) using AICPA and census data illustrated a level of maturity in the accountancy profession, with numbers of CPAs increasing dramatically within the population from the early 20th century. This work also illustrated strong growth in AICPA membership, and reported a shift in the activities of the AICPA members. Corporate practice was growing more quickly and public practice growing only very slowly, sometimes shrinking. The current paper examines 10 additional years of AICPA data and gathers further economic and demographic U.S. census data to explore these patterns and related issues. The professional membership of the AICPA continues to have relatively flat growth overall, and public practice has continued to decline relative to other pursuits of AICPA members. When the data are split into gender and age cohorts, different patterns are detected and challenges identified for continued involvement in the profession as defined by AICPA membership.

In 1995, published research (Young, 1995) using AICPA and census data illustrated a level of maturity in the accountancy profession, with numbers

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of certified public accountants (CPAs) per U.S. population increasing dramatically from the early 20th century, as the profession became established. This work also illustrated a dramatic growth in the AICPA membership, and reported a shift in the activities of the AICPA membership. Corporate practice was growing more quickly and public practice growing only very slowly and sometimes shrinking. An increased proportion of women in the younger age groups of the AICPA was noted, signaling a shift toward larger numbers of women in the profession.

The current paper expands and builds upon Young's data. Ten years of additional data from the AICPA have been appended, and additional economic and demographic data have been collected to expand these analyses. The decline in AICPA membership has not abated, though census data are inadequate to determine whether that tracks a similar decline in total CPAs. The shift away from public practice has continued within AICPA membership, with more members in corporate practice and more members retired. The causes of this shift cannot yet be determined; it could be related to the changing technologies in the profession or to the changing regulatory environment, as well as other factors of professional feasibility. The gender shift has continued, with women actually outnumbering men in the AICPA membership professional entry age cohort. However, the early decline of the numbers of women in a critical career age cohort points to possible problems in keeping women engaged and helping them advance in the profession.

THE CPA PROFESSION

The profession of CPA has some unique characteristics that have driven its demographics and its economic position. The number and status of CPAs in the United States grew dramatically over the course of the 20th century, along with the growth of the capital markets and resulting mandates surrounding the provision of financial information. Over that same time period, other factors affected the members within the profession. As audits became commoditized in the latter part of the century, consulting activities grew, both within and outside of traditional accounting firms. As more women entered the work force, the gender makeup of the profession shifted. As the baby boom generation enters the 21st century, its members near retirement, further shifting the makeup of the nation's work force. These factors, along with technological changes, have the potential to alter the provision of professional accountancy services.

Young (1995) tracked the growth of the CPA profession across much of the 20th century. The growth during the first half of the century occurred in concert with growth in U.S. capital markets and corresponding mandates for regulated and audited financial information. Young documented a dramatic increase in the number of CPAs per thousand population as the profession became established (*op. cit.*, Table 4 and Fig. 3). This figure also compared CPAs to other professions, illustrating a dramatic growth in the AICPA membership compared to census data on other professions including engineers, lawyers, and physicians, with a flattening in the CPA profession’s numbers as the growth period ended. Extending these data through the 2000 census reflects a continuation of the same trends. Over the period 1970–1994 (for which data were available), Young (1995) also documented a shift in the reported activities of the AICPA membership. The category of members involved in corporate practice grew more quickly, with the numbers involved in public practice growing only very slowly, sometimes shrinking toward the end of this 24-year period (*op. cit.*, Table 2).

PROFESSIONAL POPULATION

Fig. 1, net membership change in the AICPA, replicates Young’s Fig. 1, adding additional years of data (provided by the AICPA), illustrating the continuing decline in membership. Updating the information on number of professionals (in accountancy, law, medicine, and engineering) compared to population, Fig. 2 presents these relationships as logarithms (to accommodate differing data scales) of the ratios of U.S. population to each professional membership. This figure replicates the pattern previously

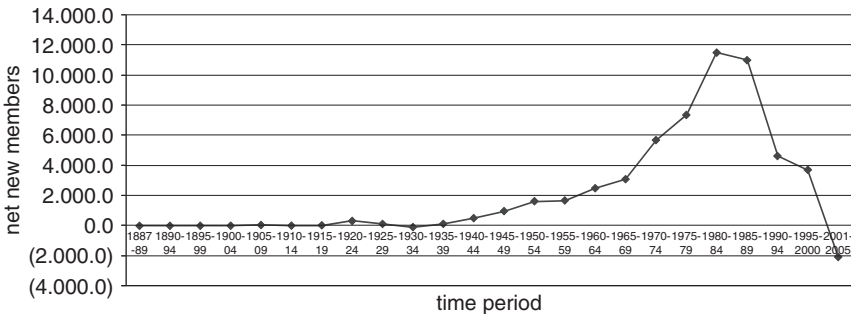


Fig. 1. Net Membership Change in AICPA.

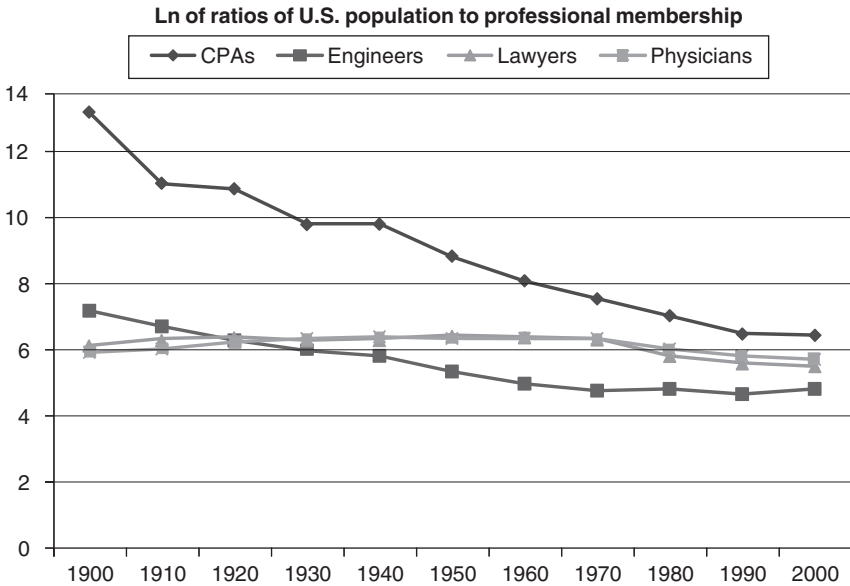


Fig. 2. U.S. Population/Professional Membership (Logarithmic Scale).

documented by Young, the U.S. population per CPA declining over the 20th century, even as the population itself grew. This trend leveled out by the year 2000, becoming more similar to the other three professions. The rapid growth in number of CPAs across the century reflects a natural progression as the professional numbers grew, rather than any causal relationships with raw population numbers.

An important data complication with this work is the reliance on AICPA membership as the proxy for professional membership due to the manner in which census data are collected and reported. The census reports people practicing accounting, auditing, and bookkeeping, making no distinction for certification or other professional designation. For example, the [U.S. Department of Labor, Bureau of Labor Statistics](http://www.bls.gov/emp/emptab3.htm), estimates that there were 1,176,000 accountants and auditors (bachelor's degree education level) employed in 2004 (<http://www.bls.gov/emp/emptab3.htm>), without distinction as to certification. The AICPA reported 334,635 members in the same year. It is not possible to determine the proportion of the difference, more than 800,000 individuals, who are CPAs who do not join the AICPA, in contrast to self-reported accountants and bookkeepers who are not CPAs. It is also possible that AICPA membership is more attractive to particular

segments of the profession, regardless of certification. Consistent with Young (1995), this paper uses the AICPA data as a proxy for certified professionals to further address trends previously examined.¹

Even with this professional assumption for CPAs, measuring the saturation of the different professions by the same general population measure does not take into account how the general population might or might not utilize each of these professions. Most individuals in the United States, regardless of income level, see a physician at some time during their life span. So number of physicians should have some correlation to number of people because of this general usage. Attorneys are not as generally used by all, but there are many arenas of life in which specific sorts of attorneys may play roles for the people who do require their services. Thus, one might observe a greater number of attorneys, apparently tracking population growth but, perhaps, simply reflecting growth in areas of legal specialization for those parties who do require legal advice. Attorneys, unlike physicians, are also used by corporations as well as by individuals.

CPAs, in contrast, have neither the wide variety of specializations observed in the legal field, nor are their services required by every member of society in the same way that medicine is generally used by individuals. However, CPAs are more commonly used by business entities, similar to attorneys but dissimilar to physicians. And at the personal level, the services of a CPA would more frequently be utilized by households, rather than by individual persons. Therefore, this paper looks at AICPA membership relative to other potential measures of users to address its value as a proxy.

Figs. 3 and 4 examine some possible relationships. Fig. 3 graphs scaled number of households, household mean income, and scaled AICPA membership over the period 1975–2004 to allow comparison of the slopes.² Over this 30-year period, the slope of the AICPA membership is steeper than the number of households until around 1990, when it levels off, illustrating the fast growth of the profession in the 1975–1990 period, with the subsequent slowdown previously noted. The additional trends on this graph, number of households and household mean income, both have an overall upward trend, though that of mean income has more volatility, lacking the monotonic slope illustrated in the other two measures. Statistically, neither of these trends can be detected as a driver of demand for CPAs.

Continuing alternative comparison measures for businesses, in Fig. 4 AICPA membership is graphed over the period 1970–2004, with four other variables as the data are available³. These include the consumer price index to incorporate an overall economic measure, total corporate income,

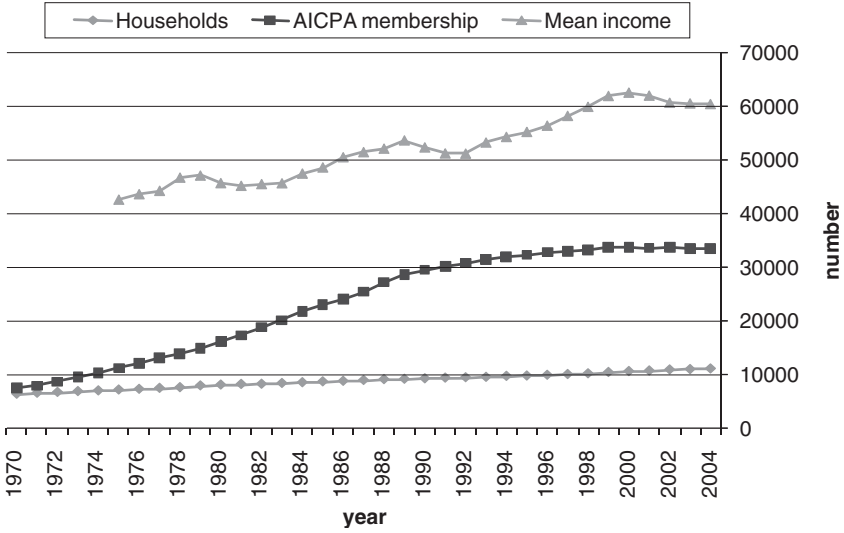


Fig. 3. Number of U.S. Households, Mean Household Income, and AICPA Membership across Time. Sources: U.S. Census Bureau; AICPA.

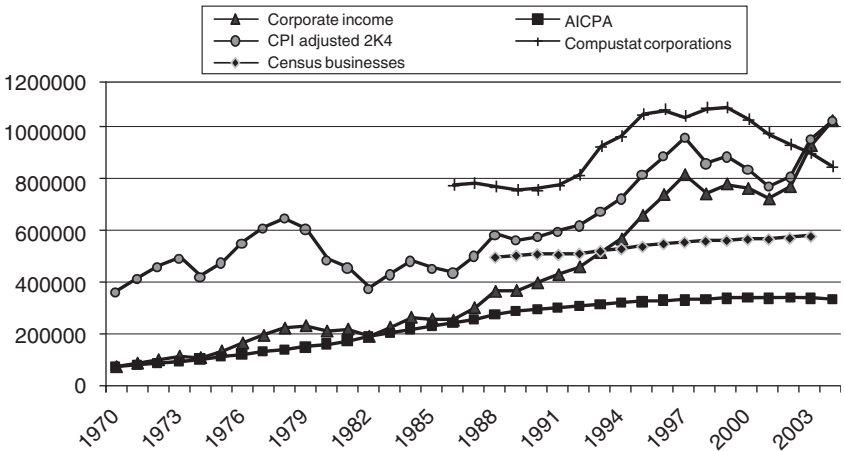


Fig. 4. Corporate Income, CPI Data, Census Businesses, Corporations Reporting in Compustat, and AICPA Membership across Time. Sources: U.S. Census Bureau; AICPA; Compustat.

number of businesses reported in census data⁴ (divided by 10 to fit the scale of the graph), and number of firms reporting in Compustat (multiplied by 100 to fit the scale of the graph) as a proxy for publicly reporting corporations.⁵ The number of business entities, available for the period 1988–2002, demonstrates a similar slope to the AICPA membership line (and to that of households in the previous graph). The corporate income line, like the household income line, has higher volatility, as does the CPI. This volatility is somewhat mirrored in the shape of the time series of companies reported in Compustat data, the trend for which does not match the relatively flat line of AICPA membership over the same time period. Again, it is not possible to detect causal relationships. Due to time series correlation, the household and business variables show statistical relationships with each other and with the AICPA membership; but at the macro level of the data herein, these relationships cannot be linked in any causal sense, other than an inference of a growing economy across the time periods represented. The lack of clear relationships between AICPA members and number of firms is consistent with the large numbers of census-reported accountants and bookkeepers who, presumably, are providing needed professional services.

PROFESSIONAL ACTIVITIES REPORTED BY CPAs

Fig. 5 presents the percentage breakdown of professional activities reported by AICPA members over the years 1994–2005.⁶ This graph also includes a line for total AICPA members (measured in 10,000s for scaling) to allow comparison of slopes. Since 1994 corporate practice has moved ahead of the public practice of accounting, though a notable drop occurred in 2004, followed by a subsequent upturn. The number of retirees showed a drop in the late 1990s, but increased again rather sharply in 2003. Both of these changes occurred subsequent to the passage of the Sarbanes-Oxley Act of 2002. The specific effects of this act and its subsequent enforcement on professional membership cannot yet be determined. It is possible that persons near retirement or a job change may have opted to avoid the learning curve that would be presented by these new regulations, while the same regulations could make the profession more interesting and challenging to newer members. The AICPA members in government and in education have remained relatively very low and constant components of the professional group over these 11 years.

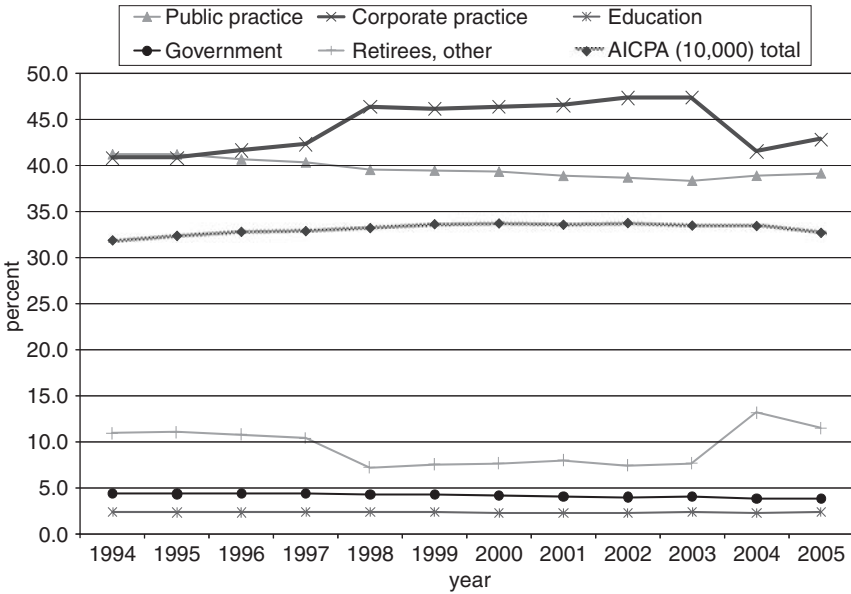


Fig. 5. Professional Activities Reported by AICPA Members (AICPA (10,000) Membership Reported on Same Graph to Allow Slope Comparison).

While the public face of accountancy arguably remains that of the auditor, it is clear from these data that, as represented by the AICPA membership, membership in this segment of professional activities has been declining over this period. If AICPA members provide a reasonable proxy for CPAs providing the attestation service, then the relative number of auditors appears to be declining. Alternative explanations could be that fewer auditors are deciding to join the AICPA, or fewer auditors are needed. It is also possible that the AICPA membership numbers have been affected by SOX, as discussed above, or by some of the discussions in 2000–2001 about creation of a new global credential.

Since the number of reporting companies has not declined, then a change in the way that audits are done may also be a contributing factor. It is becoming apparent that technology has an increasing role to play in the audits of financial information of the future, both in the tools that auditors will use and in the data to be audited (e.g., XBRL reporting). That fact may point to a reduced need for individual CPAs who are in public practice, but an increased need for CPAs well-trained in using the technology tools that are so rapidly proliferating. That is, maintenance of capital markets

integrity may rest on the redeployment of lower numbers of auditors who are expert in using the available new tools. This situation demonstrates the potential for a “ceiling” on the number of CPAs needed for the financial audit role if technology facilitates audits of much larger amounts of information by fewer people. In this case, the profession as represented by the AICPA must enrich practice and growth opportunities in other arenas if it is to remain attractive.

GENDER MAKEUP OF THE PROFESSION

Fig. 6 presents the percentage of AICPA membership by gender and age in 1994 (Panel A) and 2004 (Panel B). AICPA data reflect the percentage of women entering the profession (the youngest age cohort) increasing to essentially the same number as men. However, that entrance equality quickly changes. In 1994, women had not been in the professional ranks long enough, so Panel A shows what would be expected – women had not yet “grown old” in the profession.⁷ Panel B shows that by 2004 more women than men were in the AICPA youngest age cohort, and the female percentage is much closer to that of males in the 26–35 cohort as well. Again, we see that women have not had enough time to increase their proportions in the older cohorts (though the raw numbers presented in Fig. 7 will examine this issue further).

Fig. 7 and Table 1 present the numbers of men and women in the AICPA by same age cohorts in 1994 and 2004. Tracking totals across these two time periods illustrates the aging of the profession. In 1994, the age cohorts, 26–35 and 36–45, constituted close to 67% of the membership. By 2004, these two 1994 cohorts had aged into the next cohorts, without full replacement in the younger groups. In 2004, 62% of the membership was in the 36–45 and 46–55 cohorts, the 55–65 cohort had increased from near 7 to 15.5% of the total, and the 26–35 cohort showed a significant reduction of its share from 30% in 1994 to around 15%.

By 2004, the numbers of men and women entering the profession are almost the same and remain close through the 26–35 cohort. However, tracking men and women separately over the 10-year period provides further insight. The greater numbers (by slightly over 21,000) of men in the 1994 26–35 cohort have continued to increase as this group became the 36–45 cohort in 2004; the difference between men and women has grown to slightly over 22,500 over this 10-year period, indicating that in this key career development age group, women are not initiating or retaining their

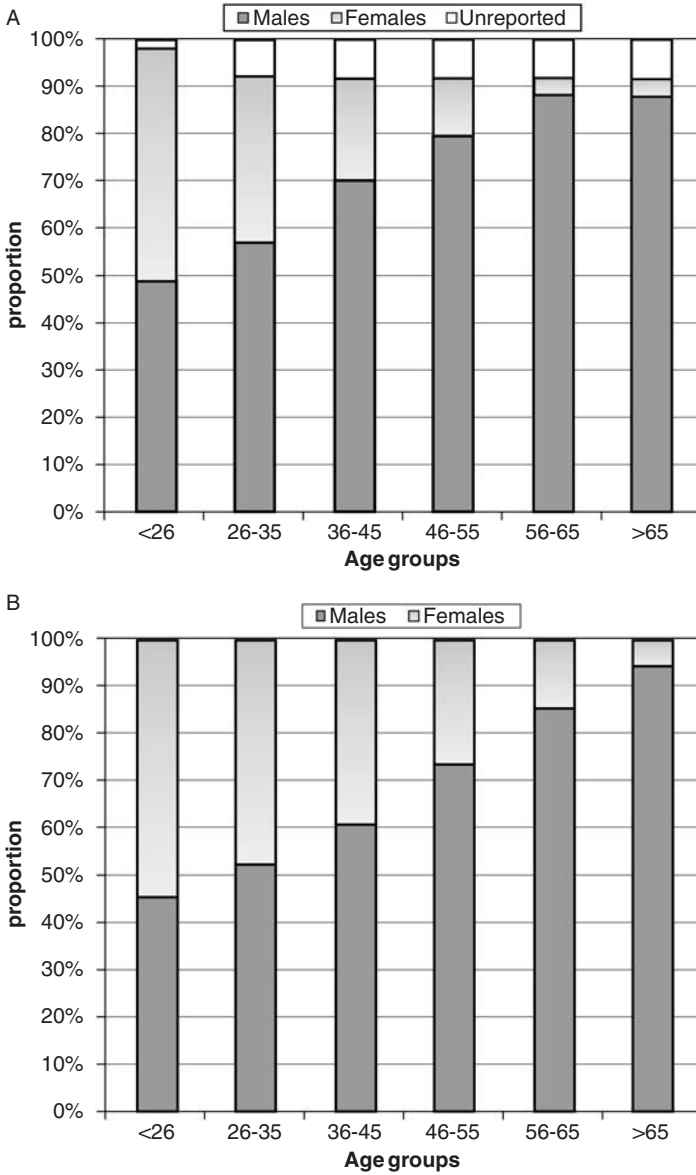


Fig. 6. Percentage Membership of AICPA by Gender, Age Cohorts (Panel A, 1994; Panel B, 2004).

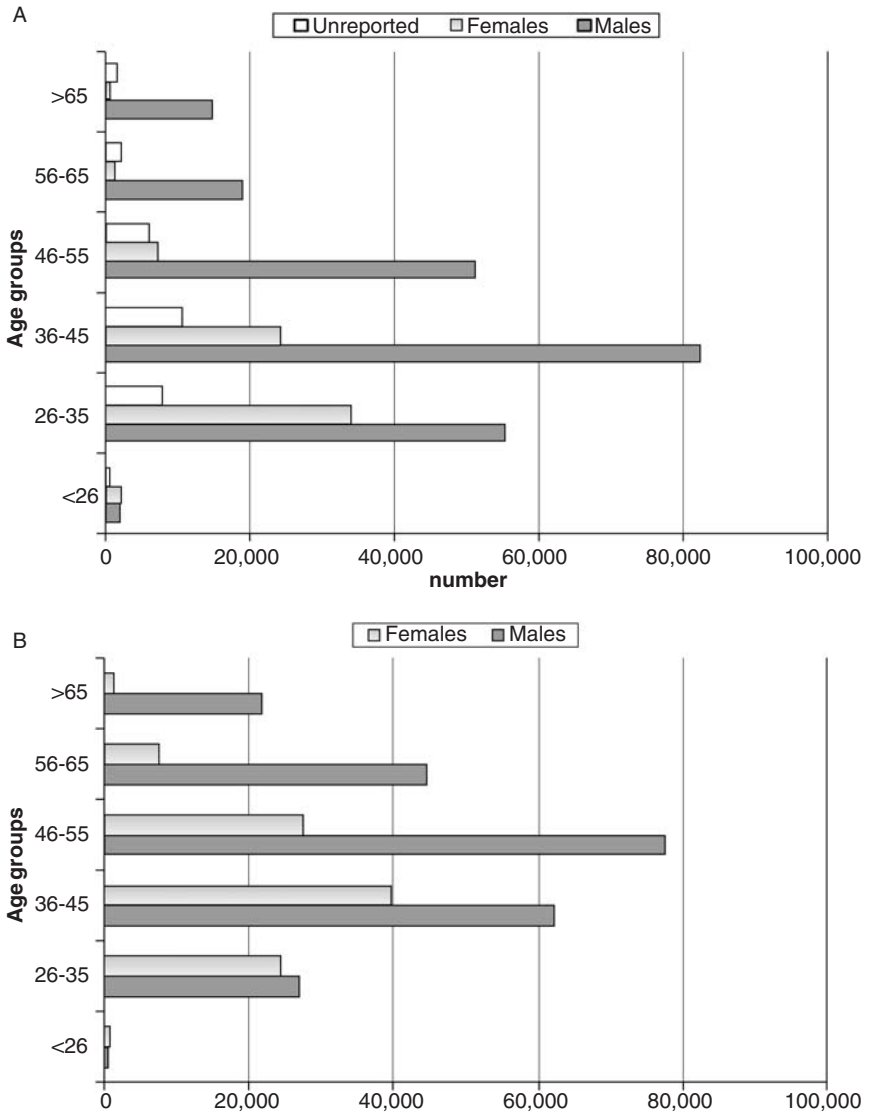


Fig. 7. AICPA Membership by Gender, Age Cohorts (Panel A, 1994; Panel B, 2004).

Table 1. AICPA Membership by Gender, Age Cohorts.

Panel A, 1994								
Age Group	Male		Female		Not Reported		Totals by Group	
	Number	Percent of group	Number	Percent of group	Number	Percent of group	Number	Percent of group
<26	2,049	48.88	2,089	49.84	54	1.28	4,192	1.30
26–35	55,246	56.96	34,127	35.18	7,628	7.86	97,001	30.20
36–45	82,392	70.33	24,240	20.69	10,525	8.98	117,157	36.48
46–55	51,127	79.61	7,291	11.35	5,809	9.04	64,227	19.99
56–65	18,863	86.31	1,294	5.92	1,699	7.77	21,856	6.81
> 65	<u>14,818</u>	88.41	<u>440</u>	2.62	<u>1,504</u>	8.97	<u>16,762</u>	<u>5.22</u>
Totals	224,495	69.89	69,481	21.63	27,219	8.47	321,195	100.00

Panel B, 2004							
Age Group	Male		Female		Totals by Group		
	Number	Percent of group	Number	Percent of group	Number	Percent of group	
<26	582	45.57	695	54.43	1,276	0.38	
26–35	26,884	52.57	24,254	47.43	51,138	15.28	
36–45	62,301	61.07	39,712	38.93	102,013	30.48	
46–55	77,483	73.74	27,593	26.26	105,076	31.40	
56–65	44,547	85.61	7,487	14.39	52,035	15.55	
> 65	<u>21,800</u>	94.39	<u>1,297</u>	5.61	<u>23,097</u>	<u>6.90</u>	
Totals	233,596	69.81	101,039	30.19	334,635	100.00	

Source: For panel A: AICPA Membership Demographics Report (unpublished, dated March 14, 1994); for panel B: AICPA Membership Demographics Report (unpublished, dated July 31, 2004).

AICPA membership at the same rate as men, even though their numbers do continue to increase. (The data are not adequate to determine whether women are leaving the profession or just the professional membership.) This trend needs to be followed to determine whether this 10-year comparison is part of a larger picture since the loss of women during these prime career development years can hamper their progress in the profession overall.

The comparisons from the 1994 (36–45) to the 2004 (46–55) cohort and from the 1994 (46–55) to the 2004 (56–65) cohort show the reverse, that is, in these age groups between 1994 and 2004, more women than men appear to have continued their AICPA membership, indicating that the women who do remain in the profession over the years may remain relatively active in

the association. This underscores the need for the profession to address retention of women as they move from their 20s to their 30s. By 2004, the raw numbers of women are increasing in the older cohorts as would be expected. Women in the 36–45 (46–55) cohort have gone from around 24,000 (7,000) to close to 40,000 (28,000). This further underscores the desirability of trying to encourage more women to remain involved professionally from the earlier age groups.

These differences reverse in the move from 56–65 to older than 65. More men have remained in the AICPA (likely as retirees given the earlier self-reported activities in Fig. 5) as they have moved into the oldest cohort. At least over the next 20 years, these trends are likely to continue as baby boomers continue to retire. Women are likely to continue to be under-represented in the retirement age groups for at least this same period, until they have had adequate time in the profession. A study published by the Bureau of Labor Statistics in 2000 (Dohm, 2000) reports that the impact of baby boomer retirements will increase beyond 2008. This same study includes the occupational areas of bookkeeping, accounting, and auditing among those with a “greater-than average number of workers” over 45 in the decade 1998–2008 (Dohm, 2000, Table 5), and among those occupations with the greatest replacement needs during the same time (Dohm, 2000, Table 2). As those workers over 45 retire beyond 2008, these distinctions will become more pronounced without significant influx of new professionals.

The AICPA is already addressing issues related to women in the professional ranks. Its ongoing *AICPA Work/Life and Women’s Initiatives 2004 Research (2004)* provides many details about women’s specific work experiences in different firm and job settings. The related concerns, needs, and other findings identified by these initiatives must take a primary position in the profession’s agenda as it addresses upcoming demographic challenges.

SUMMARY

This paper describes demographic characteristics of the CPA profession, specifically as represented by the AICPA membership. The data document some societal trends as they are reflected in this particular professional group. Evidence is consistent with the static overall numbers of professional members, the shift from the practice of public accounting to corporate practice, the coming retirement of the baby boomer generation, and the continued entrance of women into the accountancy profession, combined with relatively lower numbers in older age cohorts. Each of these

demographic or career shifts points to challenges that must be met if the AICPA is to remain an attractive professional alternative. The decreasing number of auditors potentially points to the increasing role of technology, as well as the importance of professionals suitably trained to use technology to provide services to the capital markets. A related challenge lies in concerns about adequate numbers of PhD qualified professors to staff the requisite educational programs (Plumlee, Kachelmeier, Madeo, Pratt, & Krull, 2006). Retirements from that subset of the profession, combined with reduced numbers of entering PhD students and apparent declining interest in those studies, will hamper efforts to increase entering cohorts into the CPA profession.

Though women make up an increasingly higher proportion of the membership of the profession and of all accounting graduates (Sanders & Romeo, 2004), their numbers as AICPA members do not increase on the same trajectory as men during critical professional development years. This differential pattern may indicate that the profession is losing an important segment of membership prior to the benefits of their involvement being realized by either those individuals or the profession.

The age cohort that encompasses those nearing or already in retirement continues to increase more rapidly than the youngest age cohort that includes those entering the profession. The situation underscores the need to encourage new entrants to prepare themselves for the apparent changes in the profession including the need to be familiar with emerging technology tools, as well as the need to develop strategies that will help women build and maintain their professional careers.

NOTES

1. As Young also noted, the professional organizations of law and medicine, the American Bar Association and the American Medical Association, are more widely subscribed to by the individual professional members.

2. Number of households scaled by 1,000, AICPA membership scaled by 10, to accommodate slopes on same graph.

3. Number of businesses reported in the census data, scaled to accommodate slopes on same graph.

4. <http://www.census.gov/compendia/statab/tables/>

5. The Compustat files are used as a proxy for publicly traded companies reporting each year. A company is counted as reporting if its Compustat record includes total assets. Companies reporting in Compustat are surely publicly reporting companies, though certainly there are more businesses having to meet SEC filing requirements than are in the Compustat database.

6. Young's comparable information (*op. cit.*, Table 2) ended in 1994 when public practice had declined and corporate practice had increased to approximately equal status. This work also documented that the increase in retirees began in the later 1980s.

7. These 1994 data are accompanied by category "other," in addition to the expected ones, male and female, since gender was not reported for all individuals in these data. This category is ignored in the discussion due to lack of further information on its makeup.

ACKNOWLEDGMENT

I express my appreciation to anonymous reviewers whose suggestions have greatly improved this work.

REFERENCES

- AICPA Annual Reports 1970–2005.
- AICPA Membership Demographics Report (unpublished, dated July 31, 2004).
- AICPA Membership Demographics Report (unpublished, dated March 14, 1994).
- AICPA Work/Life and Women's Initiatives 2004 Research. (2004). Work/Life and Women's Initiatives Executive Committee, AICPA.
- Dohm, A. (2000). Gauging the labor force effects of retiring baby-boomers. *Monthly Labor Review*, 23(7).
http://www.census.gov/compendia/statab/income_expenditures_wealth/household_income/ (household and income data).
- Plumlee, R. D., Kachelmeier, S. J., Madeo, S. A., Pratt, J., & Krull, G. (2006). Assessing the shortage of accounting faculty. *Issues in Accounting Education*, 21(2).
- Sanders, B., & Romeo, L. (2004). *The supply of accounting graduates and the demand for public accounting recruits*. American Institute of Certified Public Accountants.
- U.S. Census Bureau. <http://www.census.gov/compendia/statab/tables/> (population and firm data).
- U.S. Department of Labor, Bureau of Labor Statistics <http://www.bls.gov/emp/emptabapp.htm> (numerical and percent change by detailed occupation) <http://www.bls.gov/emp/emptab3.htm> (occupations with most new jobs through 2014) <http://www.bls.gov/emp/emplab05.htm> (civilian labor force participation rates).
- Young, S. J. (1995). The changing profile of the AICPA: Demographics of a maturing profession. *Research in Accounting Regulation*, 9.

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THE EFFECT OF TAX REFUNDS ON TAXPAYERS' WILLINGNESS TO PAY HIGHER TAX RETURN PREPARATION FEES[☆]

Scott B. Jackson and Richard A. White

ABSTRACT

This study examines the historical profile of tax refunds and reports the results of an experiment which helps to explain an economic consequence that tax refunds may engender. Analysis of historical tax refund data reveals that the incidence and magnitude of tax refunds have increased significantly over the past half-century, which suggests that legislative efforts aimed at reducing tax refunds have been largely ineffective. The results of the experiment reveal that taxpayers who receive tax refunds from the IRS tend to frame tax return preparation fees as a cost, while taxpayers who owe the IRS additional taxes tend to frame tax return preparation fees as a loss. In turn, the manner in which taxpayers frame tax return preparation fees influences the perceived benefits that taxpayers ascribe to the tax return preparation service, which, in turn, influences taxpayers' willingness to pay higher tax return preparation fees. Importantly, when the results of this study are considered in conjunction with the results of extant research, which reveals that tax

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professionals bill taxpayers for larger fractions of billable fees when taxpayers receive tax refunds than when taxpayers owe additional taxes (Hatfield et al., 2007), it seems reasonable to conclude that higher equilibrium tax return preparation fees are likely to evolve when taxpayers receive tax refunds than when they owe additional taxes.

1. INTRODUCTION

The Economic Recovery Act of 1981 amended the Internal Revenue Code (IRC) to provide additional withholding allowances for estimated itemized deductions, tax credits, and other deductions which were not reflected in the income tax withholding calculations.¹ The major reason for this amendment was “to make the withholding requirements flexible enough to permit taxpayers to adjust their withholding in order to match tax liability as closely as possible and, thus, reduce the possibility of over withholding.”² Nonetheless, over withholding continues to be a prevalent tendency among taxpayers despite the fact that such behavior has real economic consequences (i.e., foregone investment income and interest charges on consumer debt that could be avoided).³ From a wealth maximization perspective, taxpayers should remit the minimum amount of interim taxes required by the IRC without incurring interest or penalties and then satisfy any deficiencies in the subsequent year.⁴

Tax professionals not only help taxpayers minimize their tax liabilities (Christian, Gupta, Weber, & Willis, 1994) but they potentially also help taxpayers avoid overpaying their interim taxes. However, Christian et al. (1994) and Jackson, Shoemaker, Barrick, and Burton (2005) find that professionally prepared tax returns frequently result in substantial tax refunds. This is a significant concern because evidence in Hatfield, Jackson, and Kahle (2007) suggests that tax professionals bill taxpayers for larger fractions of billable fees when taxpayers receive tax refunds than when taxpayers owe the IRS additional taxes. Because Hatfield et al. (2007) focus on tax professionals rather than taxpayers, their study is silent about whether taxpayers who receive tax refunds are willing to pay higher tax return preparation fees than taxpayers who owe additional taxes.⁵

The first objective of this study is to examine the historical profile of tax refunds to gain insights into whether the incidence and magnitude of tax refunds have changed since the adoption of the present structure of the income tax withholding system in 1944. The second objective of this study is

to experimentally examine *whether* and *why* taxpayers who receive tax refunds are willing to pay higher tax return preparation fees than taxpayers who owe additional taxes. The results of this study potentially provide evidence that further reinforces the need to adopt regulatory policies that achieve a closer match between taxpayers' interim payments and their actual tax liabilities.

Examination of the historical profile of tax refunds provides some striking evidence concerning growth in the incidence and magnitude of tax refunds. Specifically, the percentage of tax returns that result in refunds has grown from approximately 60 percent in the 1940s to approximately 80 percent in the early 2000s. Similarly, *inflation-adjusted* average tax refunds have grown from approximately \$550 in the 1940s to almost \$2,500 in 2005. Formal statistical tests reveal that growth in the incidence and magnitude of tax refunds is highly significant.

Anecdotal evidence indicates that taxpayers evaluate the performance of tax professionals based upon the size of their tax refunds (Christian et al., 1994; Jackson et al., 2005), and research on mental accounting (Thaler, 1999; Tversky & Kahneman, 1981) provides an intuitively appealing theory that helps to explain this behavior. To test this theory, an experiment is conducted using 88 experienced taxpayers. Taxpayers' tax refund/tax due position is manipulated between subjects and all other factors are held constant. The results indicate that taxpayers who receive tax refunds from the IRS tend to frame tax return preparation fees as a cost, while taxpayers who owe the IRS additional taxes tend to frame tax return preparation fees as a loss. In turn, the manner in which taxpayers frame tax return preparation fees influences the perceived benefits that taxpayers ascribe to the tax return preparation service, which, in turn, influences taxpayers' willingness to pay higher tax return preparation fees.

When the experimental results of this study are considered in conjunction with the results of Hatfield et al. (2007), it is logical to conclude that higher equilibrium tax return preparation fees are likely to evolve when taxpayers receive tax refunds than when they owe additional taxes. Further, the evidence suggests that there is a previously unforeseen implicit cost of tax refunds (i.e., higher tax return preparation fees), which adds to a known explicit cost of tax refunds (i.e., foregone investment income and interest charges on consumer debt that could be avoided). In light of this inference and the increasing incidence and magnitude of tax refunds, Section 7 discusses a feasible regulatory change that could reduce the incidence and magnitude of tax refunds, thereby reducing the economic burden of taxation on individuals.

Finally, it is worth noting that IRS Circular 230 (see Section 10.27(b)) and Rule 302 of the AICPA Code of Professional Conduct prohibit contingent fee arrangements in connection with preparing an original tax return. However, the apparent willingness of taxpayers to pay higher tax return preparation fees when they receive tax refunds may subtly (and perhaps unknowingly) prompt tax professionals to adopt billing practices that are tantamount to a contingent fee arrangement. Thus, the results of this study, when considered in conjunction with the results of [Hatfield et al. \(2007\)](#), suggest that contingent fee arrangements may arise in an indirect and subtle manner despite prohibitions against such arrangements.

The remainder of this study is organized as follows. [Section 2](#) provides some historical perspectives on the incidence and magnitude of tax refunds, while [Section 3](#) discusses research relevant to the experiment. [Section 4](#) draws upon research in psychology to formulate testable hypotheses. This section also develops and motivates a three-path mediation model. [Section 5](#) describes the subjects and the experiment, while [Section 6](#) discusses the experimental results. [Section 7](#) summarizes the results and provides a regulatory recommendation.

2. HISTORICAL PERSPECTIVES ON TAX REFUNDS

Prior to 1944, taxpayers in the United States were expected to save enough money over the course of a year to pay their tax liability when it came due in the next calendar year. The onset of World War II spurred Treasury officials to advocate the adoption of a broad-based, progressive income tax system, which was enacted into law in 1943. The present structure of the income tax withholding system in the United States dates back to that legislation, which required taxpayers to remit income taxes on an interim basis starting in 1944.

Since 1944, Congress has made periodic attempts to achieve a closer match between taxpayers' interim tax payments and their actual tax liabilities. For example, the Economic Recovery Act of 1981 provided additional withholding allowances for estimated itemized deductions, tax credits, and other deductions which were not reflected in the income tax withholding calculations.⁶ Some political leaders have even expressed the view that it is "vital to the integrity of the tax system that the amount withheld from wages closely matches the taxpayer's ultimate tax liability" ([United States Senate, 1986, para. 4111](#)).⁷

To gain insights into whether the incidence and magnitude of tax refunds have changed over time, an examination of the historical profile of tax refunds using data reported in the Statistics of Income Bulletins from the IRS is performed (IRS, 2007). Panel A of Fig. 1 shows the percentage of tax returns resulting in refunds from 1944 through 2005, which reveals that this percentage has grown from about 60 percent in the 1940s to about 80 percent in the early 2000s. Panel B of Fig. 1 shows inflation-adjusted average tax refunds for the years 1944 through 2005 (*inflation-adjusted* to 2005 dollars using the Consumer Price Index), which reveals that the average refund per tax return has grown from approximately \$550 in the 1940s to approximately \$2,500 by 2005. Thus, Fig. 1 suggests that the incidence and magnitude of tax refunds have increased over time.

To formally evaluate whether the variables in Fig. 1 have increased significantly over the past half-century, the following linear trend regression model is estimated:⁸

$$\text{DEP_VAR}_t = \alpha_0 + \alpha_1 \text{TIME}_t + \varepsilon_t \quad (1)$$

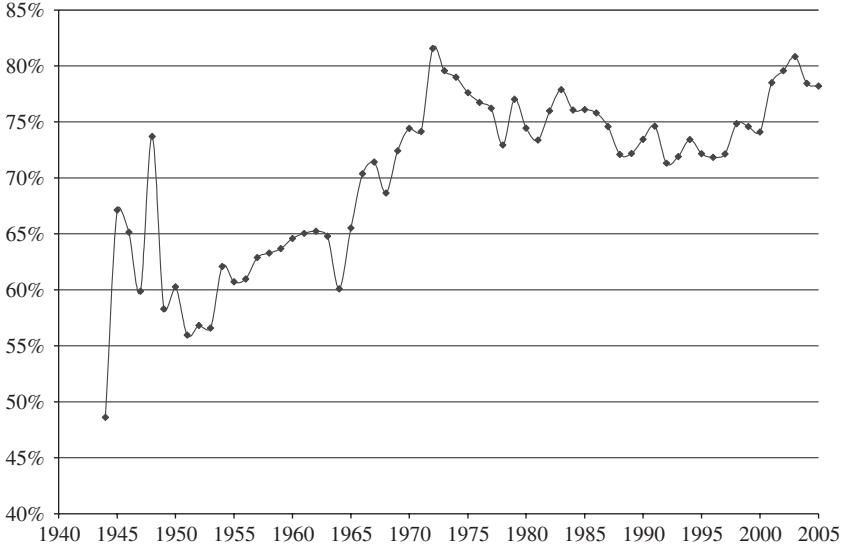
where DEP_VAR is the dependent variable, defined either as (i) the percent of tax returns resulting in refunds or as (ii) inflation-adjusted average tax refunds; TIME is defined as 1 in 1944, 2 in 1945, ..., and 62 in 2005.⁹ If DEP_VAR has increased significantly over time then the coefficient on TIME should be positive and significant.

Table 1 reports the regression results.¹⁰ DEP_VAR in the first regression is the percent of tax returns resulting in refunds. The independent variable (TIME) is positive and significant (t -statistic = 5.69, $p < 0.001$). Also, notice that TIME explains approximately 35 percent of the temporal variation in the incidence of tax refunds. DEP_VAR in the second regression is inflation-adjusted average tax refunds. The independent variable (TIME) is again positive and significant (t -statistic = 8.70, $p < 0.001$). Also, notice that TIME explains approximately 56 percent of the temporal variation in the magnitude of tax refunds. Together, Fig. 1 and the regression results in Table 1 suggest that legislative efforts (i.e., The Economic Recovery Act of 1981) to reduce the incidence and magnitude of tax refunds have been largely ineffective.

3. RELEVANT PRIOR LITERATURE

Jackson et al. (2005) draw upon research on mental accounting and prospect theory to formulate predictions about the relation between taxpayers' tax

Panel A



Panel B

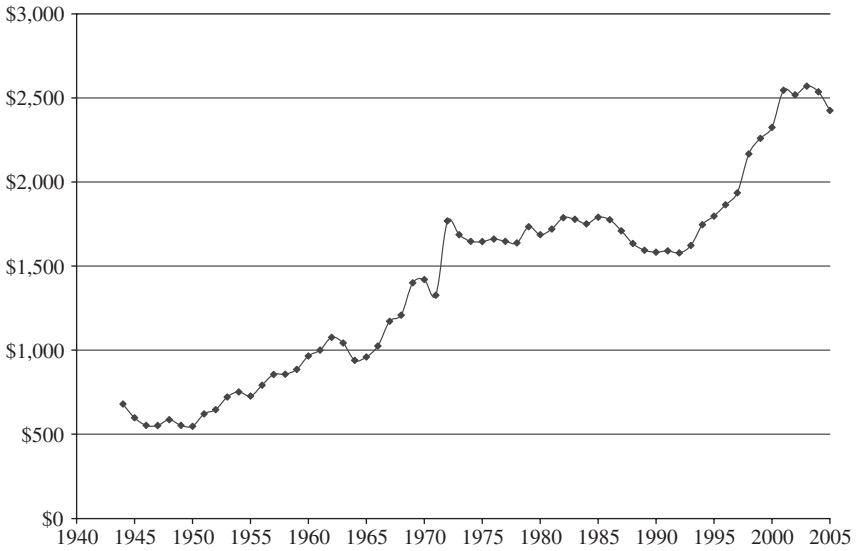


Fig. 1. Historical Profile of Tax Refunds. Note: Panel A: Percent of tax returns resulting in refunds for the years 1944 through 2005. Panel B: Inflation-adjusted average tax refunds for the years 1944 through 2005.

Table 1. Regressions of Refund-Related Variables on Time ($n = 62$).

Variable	DEP_VAR is Percent of Tax Returns Resulting Refunds			DEP_VAR is Inflation Adjusted Average Tax Refunds		
	Coefficient	<i>t</i> -Statistics	<i>p</i> -Value	Coefficient	<i>t</i> -Statistics	<i>p</i> -Value
Intercept	0.597	28.05	<0.001	502.034	3.84	<0.001
TIME	0.003	5.69	<0.001	29.894	8.70	<0.001
R^2			35.44			56.22

Regressions are specified as follows: $DEP_VAR_t = \alpha_0 + \alpha_1 TIME_t + \varepsilon_t$, where DEP_VAR is the dependent variable, defined as either (i) the percent of tax returns resulting in refunds or (ii) inflation-adjusted average tax refunds; TIME is defined as 1 in 1944, 2 in 1945, ..., and 62 in 2005. The Durbin–Watson statistic indicates that the error terms are serially correlated. As a result, regressions are estimated using generalized least squares. The average refund per tax return and foregone investment income per tax return are inflation-adjusted to 2005 dollars using the Consumer Price Index.

refund/tax due positions and tax return preparation fees. They contend that a positive relation between these variables should arise if (i) tax professionals bill taxpayers for larger fractions of the costs incurred to complete tax returns when taxpayers receive tax refunds than when taxpayers owe additional taxes, and (ii) taxpayers are willing to pay higher tax return preparation fees when they receive tax refunds than when they owe additional taxes. Using archival tax data, [Jackson et al. \(2005\)](#) find a positive relation between taxpayers' tax refund/tax due positions and tax return preparation fees. They acknowledge that the use of archival tax data precludes them from making statements about whether taxpayers' tax refund/tax due positions *cause* higher/lower tax return preparation fees.

[Hatfield et al. \(2007\)](#) experimentally examine several issues related to the behavior of tax professionals. They hypothesize that tax professionals advise taxpayers to make larger interim tax payments when they believe that tax refunds positively influence (i) the benefits taxpayers ascribe to having their tax returns professionally prepared and (ii) taxpayers' willingness to pay higher tax return preparation fees. [Hatfield et al. \(2007\)](#) also hypothesize that tax professionals bill taxpayers for larger fractions of billable fees when taxpayers receive tax refunds than when they owe the IRS additional taxes. The results of two experiments using tax partners and managers provide support for these hypotheses.

Taxpayers' tax refund/tax due position has also been associated with the level of taxpayer aggressiveness. [Chang and Schultz \(1990\)](#) find that

taxpayers in a tax refund position are significantly more compliant than taxpayers in a tax due position. White, Harrison, and Harrell (1993) find that taxpayers in a tax refund position are less likely than taxpayers in a tax due position to claim business travel and transportation expenses which were actually incurred but for which the documentation was incomplete. Similarly, Jackson and Hatfield (2005) find that taxpayers who expect to receive a tax refund tend to assign a lower fair market value to property donated to charity than taxpayers who expect to owe additional taxes.

The studies by Chang and Schultz (1990), Jackson and Hatfield (2005), and White et al. (1993) suggest that taxpayers' tax refund/tax due position exerts a considerable influence over their tax-related decision processes. One implication of that research is that taxpayers may "leave money on the table" when they are in a tax refund position by taking conservative tax positions when more aggressive tax positions may be justified. This finding is consistent with research that reveals that minor variations in the way that situations are described can have a large influence on the decisions that individuals make in a variety of settings (Belsky & Gilovich, 1999).

Two additional studies are indirectly related to the present study. Ayers, Kachelmeier, and Robinson (1999) experimentally examine whether taxpayers express preferences to overpay interim taxes in the absence of various sources of complexity. They find that many taxpayers prefer to pay more than the minimum amount of taxes, and that uncertainty about actual tax liabilities increase taxpayers' propensity to overpay. Ayers et al. (1999) contend that these results arise because taxpayers (i) find tax liabilities to be cognitively unattractive/painful and/or (ii) taxpayers use excess interim withholdings as a form of forced savings. Christian et al. (1994) examine the effect of tax professionals on taxpayers' (i) tax refund/tax due positions and (ii) interim tax payments. They find that professionally prepared tax returns, relative to self-prepared tax returns, have larger tax refunds and smaller total payments.

4. HYPOTHESES DEVELOPMENT

Individuals, like businesses, maintain accounting systems such as checking accounts, household budgets, and envelopes containing cash for specific purposes. Research suggests that individuals also maintain mental accounting systems (Henderson & Peterson, 1992; Linville & Fischer, 1991; Prelec & Loewenstein, 1998; Thaler, 1999; Tversky & Kahneman, 1981) or categories

(Henderson & Peterson, 1992) that capture the advantages and disadvantages of transactions and events. The grouping of related elements (events) within mental accounts or categories is spontaneous and may occur with minimal effort (Kahneman & Tversky, 1984).

Outcomes that are logically related are likely to be captured within the same mental account and evaluated jointly, while outcomes that have no logical relation are likely to be maintained in separate mental accounts. The overall value of a mental account is the net balance of its advantages and disadvantages in relation to a neutral reference point (Kahneman & Tversky, 1984; Prelec & Loewenstein, 1998). With respect to taxes, the outcomes relevant to taxpayers include, among other things, their tax refund/tax due position and tax return preparation fees. These outcomes are logically related and categorically linked so taxpayers are likely to capture them in the same mental account.¹¹

Research suggests that consumers find it cognitively satisfying (painful) to close mental accounts at a gain (loss) (Kahneman & Tversky, 1984; Thaler, 1999). Taxpayers who owe tax return preparation fees and who also owe the IRS additional taxes are likely to find the prospect of paying higher fees cognitively painful because there is no mental benefit to match with the additional fees. On the other hand, taxpayers who owe tax return preparation fees but who are due a tax refund are likely to find the prospect of paying additional fees only mildly painful because there is a mental benefit to match with the additional fees. Thus, research on mental accounting suggests that taxpayers who receive tax refunds may be more willing to pay higher tax return preparation fees than taxpayers who owe additional taxes. Hypothesis 1, stated in alternative form, is as follows (see path labeled as "Hypothesis 1" in Fig. 2):

Hypothesis 1. Taxpayers in a tax refund position are more willing to pay higher tax return preparation fees than taxpayers in a tax due position.

Kahneman and Tversky (1984, p. 349) state that "an individual's subjective state can be improved by framing negative outcomes as costs rather than as losses." When taxpayers receive a tax refund, the tax return preparation fee is likely to be framed as more of a cost (less of a loss) because there is a tax refund to psychologically match with the fee. On the other hand, when taxpayers owe additional taxes, the tax return preparation fee is likely to be framed as more of a loss (less of a cost) because there is no tax refund to match with the fee (indeed, there is an outflow to the IRS in addition to the tax return preparation fee).¹² Hypothesis 2, stated in alternative form, is as follows (see path labeled as "Hypothesis 2" in Fig. 2):

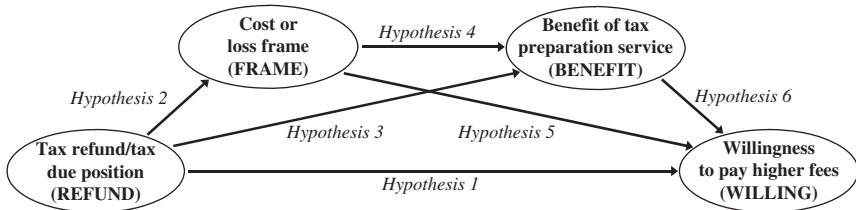


Fig. 2. Summary of Hypothesized Relations. *Note:* The variables are defined as follows: REFUND, categorical variable coded as 1 for subjects in the tax refund condition, and 0 for subjects in the tax due condition; FRAME, subjects' response to the frame question as shown in the [appendix](#) (Question 3); BENEFIT, subjects' response to the benefit question as shown in the [appendix](#) (Question 2); WILLING, subjects' response to the willingness to pay question shown in the [appendix](#) (Question 4).

Hypothesis 2. Taxpayers in a tax refund position tend to frame tax return preparation fees as more of a cost (less of a loss), while taxpayers in a tax due position tend to frame tax return preparation fees as more of a loss (less of a cost).

While tax refunds are economically inefficient (i.e., they represent an interest-free loan), most taxpayers have a limited amount of knowledge about the IRC and tax-related matters. As a result, taxpayers are likely to rely on rules of thumb (or heuristics) to evaluate the performance of tax professionals. Research in psychology reveals that individuals strive to conserve their cognitive resources, often through the use of heuristics (Smith & Kida, 1991; Payne, Bettman, & Johnson, 1988, 1993), which suggests that taxpayers may use their tax refund/tax due position to evaluate whether a benefit has been obtained from the tax return preparation service. Thus, whether taxpayers perceive that a benefit has arisen from hiring a tax professional is likely to be influenced by the outcome of the tax return preparation service. Taxpayers in a tax refund position are likely to perceive that there are greater benefits associated with the tax return preparation service than taxpayers in a tax due position.¹³ Hypothesis 3, stated in alternative form, is as follows (see path labeled as "Hypothesis 3" in [Fig. 2](#)):

Hypothesis 3. Taxpayers in a tax refund position perceive that there are greater benefits associated with tax return preparation services than taxpayers in a tax due position.

Taxpayers who frame tax return preparation fees as being more of a cost (less of a loss) (i.e., a relatively favorable psychological state compared to the alternative state in which taxpayers frame tax return preparation fees as being more of a loss (less of a cost)) are likely to (i) perceive greater benefits from tax return preparation services and (ii) be more willing to pay higher tax return preparation fees. These expectations are broadly consistent with the conclusions of [Prelec and Loewenstein \(1998\)](#) who state that consumers find payments to be painful to the extent that they are not adequately covered by benefits. Hypotheses 4 and 5, stated in alternative form, are as follows (see paths labeled as “Hypothesis 4” and “Hypothesis 5” in [Fig. 2](#)):

Hypothesis 4. Taxpayers who frame fees as being more of a cost or less of a loss (more of a loss or less of a cost) ascribe greater (lesser) benefits to the tax return preparation service.

Hypothesis 5. Taxpayers who frame fees as being more of a cost or less of a loss (more of a loss or less of a cost) are more (less) willing to pay higher tax return preparation fees.

If taxpayers believe that they are in an improved (inferior) economic position because they are due a tax refund (owe additional taxes), the negative emotional impact of bearing higher tax return preparation fees is likely to be mitigated (accentuated). Thus, taxpayers who ascribe greater (lesser) benefits to the tax return preparation service may be more (less) willing to pay higher tax return preparation fees because there are greater (lesser) perceived benefits to match with the fees. Hypothesis 6, stated in alternative form, is as follows (see path labeled as “Hypothesis 6” in [Fig. 2](#)):

Hypothesis 6. Taxpayers who perceive that there are greater (lesser) benefits associated with the tax return preparation service are more (less) willing to pay higher tax return preparation fees.

[Fig. 2](#) summarizes the hypothesized relations and indicates that the direct effect of taxpayers' tax refund/tax due position on taxpayers' willingness to pay higher tax return preparation fees may be mediated by perceptual variables. Mediator variables are of significant interest in many research settings because they help illuminate the internal cognitive processes that underlie individual behavior. According to [Baron and Kenny \(1986, p. 1173\)](#), a mediator variable “represents the generative mechanism through which the focal independent variable is able to influence the dependent variable of interest.” Similarly, [Judd and Kenny \(1981, p. 603\)](#) state that “by specifying and examining the causal mechanisms that produce some

outcomes, we gain knowledge about the genesis of the outcome behavior of interest. Through a process model we not only examine treatment effects but we also build and test a theory regarding the more general causal mechanisms responsible for the outcome behavior.” Thus, in addition to testing Hypotheses 1–6, it is necessary to test whether the indirect paths depicted in Fig. 2 have a significant effect on taxpayer behavior. Hypothesis 7, stated in alternative form, is as follows:

Hypothesis 7. The indirect paths depicted in Fig. 2 mediate the relation between taxpayers’ tax refund/tax due position and taxpayers’ willingness to pay higher tax return preparation fees.

In order to test the hypotheses developed in this section, an experiment using experienced taxpayers is conducted.

5. EXPERIMENT

5.1. Subjects

Subjects participating in the experiment consisted of MBA and executive MBA students attending a large public university. Table 2 summarizes subject characteristics. Of the 88 subjects, 17 percent have filed a tax return for 0–5 years, 19 percent have filed a tax return for 6–10 years, and 64 percent have filed a tax return for over 10 years. Sixty-nine percent of the subjects are over age 30, and 60 percent of the subjects have had their tax return professionally prepared at least once.¹⁴ Household income is above \$50,000 for 58 percent of the subjects and above \$100,000 for 28 percent of the subjects.

Table 2. Subject Characteristics ($n = 88$).

Tax returns filed	
0–5 returns	17%
6–10 returns	19%
11 or more returns	64%
Over age 30	69%
Hired a tax professional	60%
Household income	
Above \$50,000	58%
Above \$100,000	28%

5.2. *Experimental Materials*

Taxpayers' current year tax refund/tax due position is experimentally manipulated between subjects at two levels (\$3,000 tax refund or \$3,000 tax due).¹⁵ Materials for the experiment consist of detailed instructions, subject response forms, background information, a transmittal letter, demographic questions, and a manipulation check. Subjects were instructed to place themselves in the position of a hypothetical taxpayer and read the background information sheet, which, among other things, provided them with an estimate of the fee for the tax return preparation service and included the following statements about the tax professional.

Pat Colvin has prepared your tax return for each of the last four years. Pat is a Certified Public Accountant (CPA) and works as a tax manager at the accounting firm of Alford, Crane, and Preston, CPAs. Pat renders tax-related advice and completes your tax return such that your tax liability is minimized.

This information communicates to subjects that Pat is a highly qualified professional and that efforts to minimize their tax liability have been delivered. Taxpayers may otherwise assume that the existence of a tax refund (an additional tax due) is the result of the tax professional's superior (inferior) expertise and effort level to find legitimate tax deductions. Further, since all subjects are informed that their tax liability has been minimized, they have no reason to believe that their tax refund/tax due position arose for any reason other than overpaying/underpaying their interim taxes (i.e., withholdings from salaries/wages and quarterly estimated tax payments). Because this statement is included in the experimental materials, it is appropriate to attribute differences between the experimental conditions to the manner in which taxpayers mentally account for tax return preparation fees.

After reading the background information sheet, subjects were instructed to respond to four initial questions (see [appendix](#)), which are discussed further below. In responding to these questions, subjects know their estimated tax return preparation fee and their prior year tax refund/tax due position, but not their current tax refund/tax due position.¹⁶ Subjects were then instructed to read the transmittal letter from their tax professional, which contained the experimental manipulation (i.e., a tax refund or an additional tax liability). This document also (i) indicated that the tax return had been completed, (ii) indicated the amount of the tax refund/tax due, and (iii) requested payment for the tax return preparation service. After reading the transmittal letter, subjects were instructed to

respond to four questions, which are identical to the four questions answered previously. Lastly, subjects were instructed to complete a post-experimental questionnaire containing demographic questions and manipulation checks.¹⁷

5.3. Manipulated Variable and Measured Variables

Fig. 2 summarizes the relations between the manipulated variable (REFUND) and the measured variables (FRAME, BENEFIT, and WILLING). REFUND is coded as 1 for subjects in the tax refund condition, and 0 for subjects in the tax due condition. Subjects provide their responses to the measured variables twice at different points during the experiment (on scales ranging from 0 to 100). The first time subjects answered these questions, they were aware of the estimated fee but not their tax refund/tax due position. The second time subjects answered these questions, they were aware of the final fee (which was the same as the estimated fee) and their tax refund/tax due position.

The variable FRAME measures whether the tax return preparation fee is viewed as a cost or a loss. Question 3 in the [appendix](#) states “When you think about the tax return preparation fee (\$1,500), do you tend to think about it as a COST or as a LOSS?” The left endpoint of the FRAME scale is labeled as “LOSS” while the right endpoint of that scale is labeled as “COST.” The variable BENEFIT measures the perceived benefit from the tax return preparation service. Question 2 in the [appendix](#) states “When you think about the tax return preparation fee (\$1,500), do you feel that you received a benefit from the tax return preparation service?” The left endpoint of the BENEFIT scale is labeled as “There is clearly no benefit” while the right endpoint of that scale is labeled as “There is clearly a substantial benefit.”

The variable WILLING elicits subjects’ willingness to pay additional fees. Question 4 in the [appendix](#) states “Hypothetically speaking, suppose that Pat incurred extra time this year to prepare your tax return due to changes in your business activities and investments. As a result, Pat requested that you pay \$300 in addition to the estimated fee of \$1,500 for the extra time that was devoted to preparing your tax return. Indicate your willingness to pay the additional fee of \$300.” The left endpoint of the WILLING scale is labeled as “Would not pay the additional fee” while the right endpoint of that scale is labeled as “Would pay the additional fee.”

6. RESULTS

6.1. Descriptive Statistics

Table 3 reports the correlations between the manipulated variable (REFUND) and the measured variables (FRAME, BENEFIT, and WILLING). The correlations above the diagonal are non-parametric Spearman correlations, while the correlations below the diagonal are Pearson correlations. All correlations are positive and significant ($p < 0.01$), which is consistent with the direction of the relationships predicted by Hypotheses 1–6.

Table 4 provides descriptive statistics for subjects' first and second responses to the measured variables in both the tax refund and tax due conditions. Mean and median values for subjects' *first responses* to BENEFIT, FRAME, and WILLING in the *tax refund* condition are statistically indistinguishable from subjects' *first responses* to BENEFIT, FRAME, and WILLING in the *tax due* condition ($p \geq 0.10$ at both the means and medians), which is expected because subjects have not been exposed to the manipulation. Mean and median values for subjects' *second responses* to BENEFIT, FRAME, and WILLING in the *tax refund* condition are significantly greater than subjects' *second responses* to BENEFIT, FRAME, and WILLING in the *tax due* condition ($p \leq 0.001$ at both the mean and median), which is consistent with expectations.

Table 3. Correlations among Variables ($n = 88$).

	REFUND	FRAME	BENEFIT	WILLING
REFUND		0.38	0.45	0.52
FRAME	0.34		0.64	0.58
BENEFIT	0.45	0.66		0.76
WILLING	0.51	0.60	0.79	

Correlations above the diagonal report Spearman correlations, while correlations below the diagonal report Pearson correlations. All correlations are significant ($p < 0.01$). The variables are defined as follows: REFUND, categorical variable coded as 1 for subjects in the tax refund condition, and 0 for subjects in the tax due condition; FRAME, subjects' response to the frame question as shown in the [appendix](#) (Question 3); BENEFIT, subjects' response to the benefit question as shown in the [appendix](#) (Question 2); WILLING, subjects' response to the willingness to pay question shown in the [appendix](#) (Question 4).

Table 4. Descriptive Statistics.

Variable	First Response		Second Response	
	Tax refund condition (<i>n</i> = 43)	Tax due condition (<i>n</i> = 45)	Tax refund condition (<i>n</i> = 43)	Tax due condition (<i>n</i> = 45)
FRAME				
Mean	69.07	67.00	74.27	55.27
Median	80.00	70.00	80.00	60.00
SD	28.84	24.69	25.90	27.24
BENEFIT				
Mean	57.21	55.44	66.23	42.40
Median	60.00	50.00	70.00	40.00
SD	26.06	22.46	22.81	24.61
WILLING				
Mean	61.14	52.62	67.45	38.27
Median	70.00	50.00	75.00	40.00
SD	29.00	24.17	25.11	25.01

The variables are defined as follows: FRAME, subjects' response to the frame question as shown in the [appendix](#) (Question 3); BENEFIT, subjects' response to the benefit question as shown in the [appendix](#) (Question 2); WILLING, subjects' response to the willingness to pay question shown in the [appendix](#) (Question 4).

6.2. Tests of Hypotheses

To test Hypotheses 1–6 and to test for the mediated effect that these hypotheses collectively predict in Hypothesis 7, the procedures in [Taylor, Mackinnon, and Tein \(2006\)](#) are followed, which involve estimating the following regressions:¹⁸

$$\text{WILLING} = \delta_1 + \beta_1 \text{REFUND} + \varepsilon \quad (2)$$

$$\text{FRAME} = \delta_2 + \beta_2 \text{REFUND} + \varepsilon \quad (3)$$

$$\text{BENEFIT} = \delta_3 + \beta_3 \text{REFUND} + \beta_4 \text{FRAME} + \varepsilon \quad (4)$$

$$\text{WILLING} = \delta_4 + \beta_5 \text{REFUND} + \beta_6 \text{FRAME} + \beta_7 \text{BENEFIT} + \varepsilon \quad (5)$$

where WILLING is the subjects' second response to the willingness to pay question (Question 4 in the [appendix](#)); REFUND the categorical variable coded as 1 for subjects in the refund condition and 0 otherwise; FRAME the

subjects' second response to the cost or loss frame question (Question 3 in the appendix); BENEFIT the subjects' second response to the benefit question (Question 2 in the appendix).

Table 5 reports the regression results for Eqs. (2)–(5) and Fig. 3 summarizes those results. Hypothesis 1 predicts that taxpayers in a tax refund position are more willing to pay higher tax return preparation fees than taxpayers in a tax due position. The results of estimating Eq. (2) reveal that REFUND has a positive and significant influence on WILLING (t -statistic = 5.46, $p < 0.001$). Thus, Hypothesis 1 is supported. Hypothesis 2 predicts that taxpayers in a tax refund position tend to frame tax return preparation fees as more of a cost (less of a loss), while taxpayers in a tax due position tend to frame tax return preparation fees as more of a loss (less of a cost). The results of estimating Eq. (3) reveal that REFUND has a positive and significant influence on FRAME (t -statistic = 3.36, $p < 0.001$). Thus, Hypothesis 2 is supported.

Hypothesis 3 predicts that taxpayers in a tax refund position perceive that there are greater benefits associated with tax return preparation services than taxpayers in a tax due position. The results of estimating Eq. (4) reveal that REFUND has a positive and significant influence on BENEFIT (t -statistic = 3.13, $p = 0.001$). Thus, Hypothesis 3 is supported. Hypothesis 4 predicts that taxpayers who frame fees as being more of a cost or less of a loss (more of a loss or less of a cost) ascribe greater (lesser) benefits to the

Table 5. Regressions to Test Hypotheses 1–6 ($n = 88$).

Equation Number	Dependent Variable	Coefficient (t -Statistic) [p -Value]				Model F	R^2
		Intercept	REFUND	FRAME	BENEFIT		
Eq. (2)	WILLING	38.27 (10.25) [<0.001]	29.18 (5.46) [<0.001]			29.81	25.74
Eq. (3)	FRAME	55.27 (13.99) [< 0.001]	19.01 (3.36) [< 0.001]			11.32	10.60
Eq. (4)	BENEFIT	12.43 (2.42) [0.018]	13.52 (3.13) [0.001]	0.54 (7.01) [<0.001]		41.80	49.59
Eq. (5)	WILLING	2.01 (0.42) [0.673]	10.30 (2.54) [0.007]	0.13 (1.47) [0.073]	0.69 (7.11) [<0.001]	56.03	66.68

Note: Regressions are estimated using ordinary least squares and are specified as Eqs. (2)–(5).

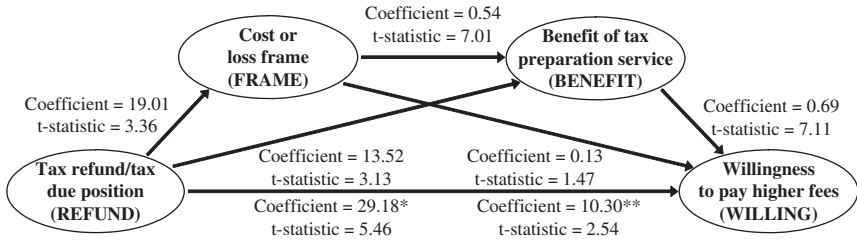


Fig. 3. Summary of Results. *Note:* The variables are defined as follows: REFUND, categorical variable coded as 1 for subjects in the tax refund condition, and 0 for subjects in the tax due condition; FRAME, subjects’ response to the frame question as shown in the appendix (Question 3); BENEFIT, subjects’ response to the benefit question as shown in the appendix (Question 2); WILLING, subjects’ response to the willingness to pay question shown in the appendix (Question 4). *This is the path coefficient in the regression containing REFUND only (Eq. (2) in Table 5); **This is the path coefficient in the regression containing FRAME, BENEFIT, and WILLING (Eq. (5) in Table 5).

tax return preparation service. The results of estimating Eq. (4) reveal that FRAME has a positive and significant influence on BENEFIT (t -statistic = 7.01, $p < 0.001$). Thus, Hypothesis 4 is supported.

Hypothesis 5 predicts that taxpayers who frame fees as being more of a cost or less of a loss (more of a loss or less of a cost) are more (less) willing to pay higher tax return preparation fees. The results of estimating Eq. (5) reveal that FRAME has a positive and marginally significant influence on WILLING (t -statistic = 1.47, $p = 0.073$). Thus, Hypothesis 5 is weakly supported. Hypothesis 6 predicts that taxpayers who perceive that there are greater (lesser) benefits associated with the tax return preparation service are willing to pay higher (lower) tax return preparation fees. The results of estimating Eq. (5) reveal that BENEFIT has a positive and significant influence on WILLING (t -statistic = 7.11, $p < 0.001$). Thus, Hypothesis 6 is supported.

Hypothesis 7 predicts that the indirect paths depicted in Fig. 2 mediate the relation between taxpayers’ tax refund/tax due position and taxpayers’ willingness to pay higher tax return preparation fees. The test statistic from Taylor et al. (2006) is significant ($p < 0.001$). Thus, Hypothesis 7 is supported. However, the direct effect of REFUND on WILLING remains significant in Eq. (5), which indicates that there is partial rather than full mediation. According to Baron and Kenny (1986), when a dependent variable has multiple causes, which is likely to be the case for WILLING,

it may be unrealistic to expect full mediation. Moreover, the mediating variables in this study are internal psychological variables that are neither directly observable nor precisely measurable, which reduces the likelihood of finding full mediation.

The regression results in [Table 5](#) also allow for the estimation of the total effect, direct effect, and mediated effect. The total effect is 29.18 (as shown in Eq. (2) in [Table 5](#)) which means that taxpayers who receive tax refunds are 29.18 increments to the right of taxpayers who owe the IRS additional taxes on the response scale for Question 4 shown in the [appendix](#). The direct effect is 10.30 (as shown in Eq. (5) in [Table 5](#)), and the mediated effect is 18.88 (this is computed as the sum of the products comprising all indirect paths or as the difference between the total effect and the direct effect, which is $29.18 - 10.30$). The portion of the total effect that is mediated is approximately 65 percent ($18.88/29.18$).

6.3. Sensitivity Tests

Subjects' second responses to the questions in the [appendix](#) are used to estimate Eqs. (2)–(5). There are two other specification options. First, the change in subjects' responses (i.e., the second response minus the first response) could have been the dependent variable rather than subjects' second response. This alternative specification produces results that are similar to those reported in [Table 5](#) (all the p -values remain significant at ≤ 0.01) with the exception of the relation between WILLING and FRAME which is insignificant ($p = 0.264$) in Eq. (5).¹⁹ Second, subjects' first responses could have been used as covariates in Eqs. (2)–(5). Again, this alternative specification produces results that are similar to those reported in [Table 5](#) (all the p -values remain significant at ≤ 0.01) with the exception of the relation between WILLING and FRAME which is insignificant ($p = 0.147$) in Eq. (5).

Finally, instead of using simple regression to test the hypotheses in the manner described in [Taylor et al. \(2006\)](#), it is possible to use path analysis with manifest variables ([Hatcher, 1994](#)). This approach was used to estimate the relations among the variables shown in [Fig. 2](#). The results of using this alternative approach produce very similar results (i.e., the paths that are significant in [Fig. 3](#) remain significant using path analysis with manifest variables and the one path this is marginally significant remains marginally significant using path analysis with manifest variables).

7. SUMMARY AND REGULATORY RECOMMENDATION

This study first examines the historical profile of tax refunds to gain insights into whether the incidence and magnitude of tax refunds have grown since the adoption of the present structure of the income tax withholding system in 1944. The results reveal significant growth in the incidence and magnitude of tax refunds over the past half-century, which suggest that legislative efforts aimed at reducing the incidence and magnitude of tax refunds have been largely ineffective.

This paper also reports an experiment which examines whether and why taxpayers who receive tax refunds are willing to pay higher tax return preparation fees than taxpayers who owe additional taxes. The results indicate that taxpayers who receive tax refunds from the IRS tend to frame tax return preparation fees as a cost, while taxpayers who owe the IRS additional taxes tend to frame tax return preparation fees as a loss. In turn, the manner in which taxpayers frame tax return preparation fees influences the perceived benefits that taxpayers ascribe to the tax return preparation service, which, in turn, influences taxpayers' willingness to pay higher tax return preparation fees.

When the experimental results of this study are considered in conjunction with the results of [Hatfield et al. \(2007\)](#), it is logical to conclude that higher equilibrium tax return preparation fees are likely to evolve when taxpayers receive tax refunds than when taxpayers owe additional taxes. Further, the results suggest that there is a previously unforeseen implicit cost of tax refunds (i.e., higher tax return preparation fees), which adds to a known explicit cost of tax refunds (i.e., foregone investment income and interest charges on consumer debt that could be avoided).

In light of these findings, there is a feasible recommendation that could help curtail the incidence and magnitude of tax refunds, thereby reducing the overall economic burden of taxation on individuals. The tax code could contain a "safe harbor" provision that eliminates interest and penalties for reasonable adjustments to current year withholding allowances for individuals who received a tax refund in the prior year. Specifically, taxpayers could be allowed to increase their withholding allowances on the basis of the amount of their prior year tax refund without being subject to interest or penalties if their current year interim tax payments fall short of their actual tax liabilities. A similar "safe harbor" provision of the IRC already exists with respect to making quarterly estimated tax payments based on a taxpayer's prior year tax liability.

It is important to acknowledge that there are certain inherent difficulties associated with efforts to curtail tax refunds. First, the government has little incentive to implement policies that reduce tax refunds because such efforts would reduce government resources in the short-term. However, as discussed in Section 2, there are some political leaders who nonetheless wish to do so. Second, evidence suggests that taxpayers have genuine preferences for refunds (Ayers et al., 1999), which suggests that efforts to reduce tax refunds may have a limited influence on taxpayer behavior. With these caveats in mind, it is nonetheless important to maintain a vigorous dialog about the issue of tax refunds among researchers, government officials, and regulators. Only by discussing this issue and perhaps making changes to the structure of the income tax withholding system will taxpayer behavior change over time.

NOTES

1. See Section 101(e)(5) of the Economic Recovery Act of 1981.
2. See *Joint Committee on Taxation* (1981).
3. For example, in 2005, over 134 million individuals in the United States filed a tax return with the Internal Revenue Service (IRS) and approximately 78 percent of those returns resulted in a tax refund, which averaged almost \$2,500 (IRS, 2006).
4. Taxpayers are required to remit income taxes to the IRS on an interim basis through quarterly estimated tax payments and employer withholdings from salaries/wages. In most situations, by paying the lesser of (i) 90 percent of the tax due on current income, or (ii) 100 percent (110% if AGI is greater than \$150,000) of the previous year's tax liability, taxpayers can avoid IRS imposed underpayment penalties.
5. According to the Tax Year 2004 Taxpayer Usage Study (IRS, 2005), tax professionals prepared about 79 million individual income tax returns (or about 61 percent of all tax returns filed with the IRS).
6. See Section 101(e)(5) of the Economic Recovery Act of 1981.
7. The notion that it is economically inefficient for individuals to overpay their interim income taxes is a frequent topic of articles in the financial press. For example, an article in *The New York Times* states "if you look forward to receiving a big tax refund each year, why not put the extra money received from reduced withholdings into an interest-bearing account" (Rosen, 2001). An article in *USA Today* states that refunds "... amount to an interest free loan you gave Uncle Sam. You'd do better to underpay slightly, invest the money and then make up the difference with the IRS by next April" (Dresang, 1989). An article in *Money* states "if you expect a refund from the Internal Revenue Service this spring, stop smiling – you goofed on your taxes. Yes, goofed. By overpaying taxes during the year, you actually lost money" (Tritch, 1991).
8. See Gujarati (2003) for a discussion of linear trend regression models. As Gujarati (2003) notes, these models are often used when the researcher is interested in finding the rate of growth in an economic variable.

9. The Durbin–Watson statistic indicates that the error terms in Eq. (1) are serially correlated. As a result, regressions are estimated using generalized least squares.

10. In addition to conducting the analyses reported in Table 1, tests of whether the means and medians for the period 1973 through 1999 are significantly greater than the means and medians for the period 1944 through 1972 are also performed. For each variable, the more recent time period is significantly greater than the earlier time period ($p < 0.001$).

11. Other tax-related outcomes that may be relevant to taxpayers include interest and penalties. In the experiment, subjects are informed that no interest or penalties are due to the IRS.

12. Taxpayers may frame tax return preparation fees as a cost regardless of their tax refund/tax due position because taxpayers capture benefits from having their tax returns professionally prepared.

13. Even though tax-related outcomes may be separated by time, taxpayers mentally track the costs and benefits of transactions over time (Gourville & Soman, 1998), suggesting that temporal separation is not an issue.

14. The inferences of this study are the same when taxpayers who have no experience with a tax professional are excluded.

15. Based on prior archival tax research (Christian et al., 1994; Jackson et al., 2005), the tax refund/tax due amounts of approximately \$3,000 are fairly common. Also, since the majority of subjects who participate in the experiment have household income levels above \$50,000 (See Table 2), these amounts do not seem overly large.

16. Taxpayers' prior year tax refund/tax due position is also manipulated to evaluate whether it serves as a reference point. The effect of the prior year tax refund/tax due position is insignificant.

17. Over 90 percent of the subjects responded to the tax refund/tax due manipulation check correctly. Statistical inferences are unaffected by the exclusion of subjects who answered the manipulation check incorrectly.

18. The mediation procedures in Baron and Kenny (1986) are for a two-path mediated effect. Hypotheses 1–6 collectively predict a three-path mediated effect so the procedures in Baron and Kenny (1986) are not appropriate here. However, Taylor et al. (2006) extend the work of Baron and Kenny (1986) to a three-path mediation context.

19. Recall that the relation between WILLING and FRAME is marginally significant in Eq. (5), so the fact that this relation becomes insignificant using an alternative model specification is not surprising.

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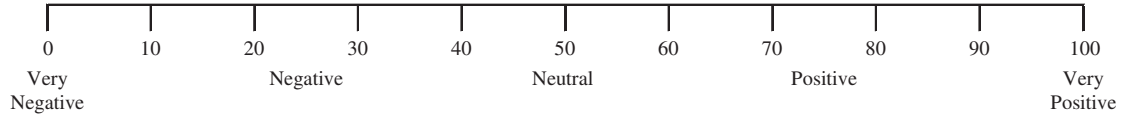
REFERENCES

- Ayers, B., Kachelmeier, S., & Robinson, J. (1999). Why do people give interest-free loans to the government? An experimental study of interim tax payments. *Journal of the American Taxation Association*, 21(Fall), 55–74.
- Baron, R., & Kenny, D. (1986). The moderator–mediator variable distinction in social psychology research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182.
- Belsky, G., & Gilovich, T. (1999). *WHY smart people make big money mistakes and HOW to correct them*. New York, NY: Simon & Schuster.
- Chang, O., & Schultz, J. (1990). The income tax withholding phenomenon: Evidence from TCMP data. *Journal of the American Taxation Association*, 12(Fall), 88–93.
- Christian, C., Gupta, S., Weber, G., & Willis, E. (1994). The relation between the use of tax preparers and taxpayers' prepayment position. *Journal of the American Taxation Association*, 16(Spring), 17–40.
- Dresang, J. (1989). Quit giving Uncle Sam a free loan. *USA Today* (May 30), p. 10B.
- Gourville, J., & Soman, D. (1998). Payment depreciation: The behavioral effects of temporally separating payments from consumption. *Journal of Consumer Research*, 25(September), 160–174.
- Gujarati, D. (2003). *Basic econometrics*. New York, NY: McGraw-Hill Irwin.
- Hatcher, L. (1994). *A step-by-step approach to using SAS for factor analysis and structural equation modeling*. Cary, NC: SAS Institute, Inc.
- Hatfield, R., Jackson, S., & Kahle, J. (2007). An investigation of the relation between tax professionals, tax refunds, and fees. *Behavioral Research in Accounting* (forthcoming).
- Henderson, P., & Peterson, R. (1992). Mental accounting and categorization. *Organizational Behavior and Human Decision Processes*, 51(February), 92–117.
- Internal Revenue Service (IRS). (2005). Tax year 2004 taxpayer usage study, Report Number 15. <http://www.irs.gov/taxstats/article/0,,id=98123,00.html>
- Internal Revenue Service (IRS). (2006). IRS statistics of income, individual complete report. Publication 1304, Table 3.3: By size of adjusted gross income. <http://www.irs.gov/taxstats/indtaxstats/article/0,,id=98123,00.html>
- Internal Revenue Service (IRS) Statistics of Income Bulletin (SOI). (2007). Tax stats – Individual income tax returns. Table 2 – All returns: Tax liability, tax credits, and tax payments, by size of adjusted gross income. <http://www.irs.gov/taxstats/indtaxstats/article/0,,id=133414,00.html>
- Jackson, S., & Hatfield, R. (2005). A note on the relation between frames, perceptions, and taxpayer behavior. *Contemporary Accounting Research*, 22(Spring), 145–164.
- Jackson, S., Shoemaker, P., Barrick, J., & Burton, G. (2005). Taxpayers' prepayment positions and tax return preparation fees. *Contemporary Accounting Research*, 22(Summer), 409–447.
- Joint Committee on Taxation. (1981). *General explanation of the economic recovery tax act of 1981*. Washington, DC: US Government Printing Office.
- Judd, C., & Kenny, D. (1981). Process analysis: Estimating mediation in treatment evaluations. *Evaluation Review*, 5(October), 602–619.
- Kahneman, D., & Tversky, A. (1984). Choices, values, and frames. *American Psychologist*, 39(April), 341–350.
- Linville, P., & Fischer, G. (1991). Preferences for separating or combining events. *Journal of Personality and Social Psychology*, 60(January), 5–23.

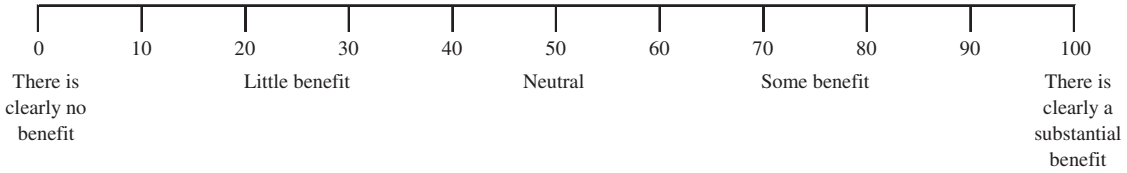
- Payne, J., Bettman, J., & Johnson, E. (1993). *The adaptive decision maker*. New York, NY: Cambridge University Press.
- Payne, J., Bettman, J., & Johnson, E. (1988). Adaptive strategy selection in decision making. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *14*(3), 534–552.
- Prelec, D., & Loewenstein, G. (1998). The red and the black: Mental accounting and savings and debt. *Marketing Science*, *17*(1), 4–28.
- Rosen, J. (2001). Positive lessons from a tax return. *The New York Times* (March 17), p. 13.
- Smith, J., & Kida, T. (1991). Heuristics and biases: Expertise and task realism in auditing. *Psychological Bulletin*, *109*(May), 472–489.
- Taylor, A., Mackinnon, D., & Tein, J. (2006). Tests of the three-path mediated effect. *Organizational Research Methods* (forthcoming).
- Thaler, R. (1999). Mental accounting matters. *Journal of Behavioral Decision Making*, *12*, 183–206.
- Tritch, T. (1991). Don't let the tax man get too much of your paycheck. *Money* (May), 163.
- Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, *211*(January), 453–458.
- United States Senate. (1986). Senate Finance Committee report on the Tax Reform Act of 1986 (99th Congress, 2nd Session, H.R. 3838). In: *A Complete Guide to the Tax Reform Act of 1986*. Paramus, NJ: Prentice Hall.
- White, R., Harrison, P., & Harrell, A. (1993). The impact of income tax withholding on taxpayer compliance: Further empirical evidence. *The Journal of American Taxation Association*, *15*(Fall), 63–78.

APPENDIX. CONTENT OF TAXPAYER RESPONSE FORMS

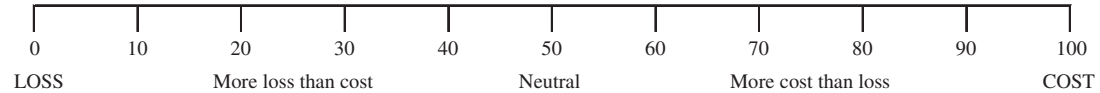
1. Think about the service provided by Pat, the quality of that service, and the estimated fee (\$1,500). What is your overall satisfaction with service provided by Pat? Please make a slash on the scale below to indicate your opinion.



2. When you think about the tax return preparation fee (\$1,500), do you feel that you received a benefit from the tax return preparation service? Please make a slash on the scale below to indicate your opinion.

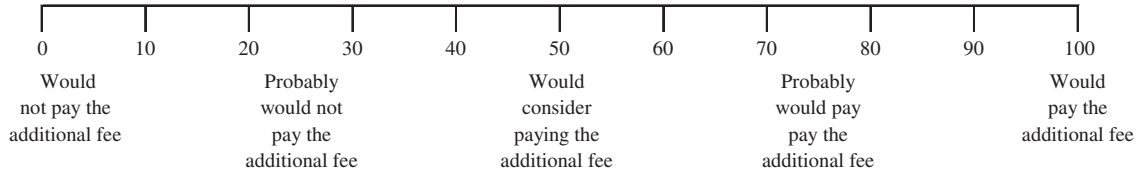


3. When you think about the tax return preparation fee (\$1,500), do you tend to think about it as a COST or as a LOSS? Please make a slash on the scale below to indicate your opinion.



APPENDIX. (Continued)

4. Hypothetically speaking, suppose that Pat incurred extra time this year to prepare your tax return due to changes in your business activities and investments. As a result, Pat requested that you pay \$300 in addition to the estimated fee of \$1,500 for the extra time that was devoted to preparing your tax return. Indicate your willingness to pay the additional fee of \$300. Please make a slash on the scale below to indicate your opinion.



Note: The questions were answered twice at different points during the experiment. The first time subjects answered these questions, they were aware of the estimated fee but not their tax refund/tax due position. The second time subjects answered these questions, they were aware of the final fee (which was the same as the estimated fee) and their tax refund/tax due position. Also, since Question 1 and Question 2 are likely to elicit similar responses, the analyses reported in this study use subjects' response to Question 2. However, inferences are unaffected by using responses to Question 1 in place of Question 2.

DEREGULATION AND VOLUNTARY DISCLOSURE BY THE AIRLINES: A CASE STUDY

David S. Gelb, Theresa F. Henry
and Mark P. Holtzman

ABSTRACT

This study examines airlines' voluntary disclosure behavior before and after deregulation. Before deregulation, did airlines avoid voluntary disclosures in order to reduce political costs? After deregulation, did airlines reporting higher earnings provide more voluntary disclosures in order to reduce their cost of capital? How do firms tradeoff between political costs and cost of capital? Airline deregulation offers a unique setting for this quasi-experiment because it is one of the largest deregulation events in the history of the United States, and because of the availability of a unique database of disclosure ratings during this time period. Prior to deregulation, we find little or no association between earnings and voluntary disclosures, suggesting that political costs subverted incentives for the most profitable airlines to make voluntary disclosures. After deregulation, we find a direct and positive relationship between airlines' earnings and the volume of their voluntary disclosures.

INTRODUCTION

This study examines airlines' voluntary disclosure behavior before and after deregulation. Verrecchia (1983) and Dye (1985) propose that firms use voluntary disclosures to overcome adverse selection, so that firms with favorable performance distinguish themselves by disclosing more information, increasing demand for their securities and lowering their cost of capital. We hypothesize that, in a regulatory environment, the political costs associated with reporting strong earnings suppress voluntary disclosures, so that the most profitable airlines avoided optional reporting that could reduce their cost of capital, but could also result in adverse regulatory outcomes, such as lower airfares. We hypothesize that after deregulation, as political costs became less important, the most profitable airlines provide more voluntary disclosures in order to reduce their cost of capital.

This research is important because it examines how regulatory mechanisms can encourage or subvert voluntary disclosure, whereby firms must tradeoff between political costs and cost of capital. Does the regulatory process dissuade companies from disclosing too much "good news," in order to avoid political costs such as future rate increases? Or do companies expect that the lower cost of capital associated with these voluntary disclosures would outweigh any additional political costs? Airline deregulation offers a unique setting for this quasi-experiment because of the availability of a unique database of disclosure ratings during this time period, and a large volume of prior research. Examining airline deregulation in retrospect permits ample data collection after this event, allowing us to make a persuasive contribution to the voluntary disclosure literature.

In a quasi-experiment, we consider the relationship between deregulation and voluntary disclosure, as well as the relationship between earnings and the quality of voluntary disclosure in a newly deregulated industry. For the years preceding and following deregulation, disclosure scores are available from the Financial Analyst Federation (FAF) Corporate Information Committee Reports. These scores are based on analysts' perception of the quality of firms' disclosures in their annual reports, and quarterly reports, and investor relations departments. We look at airlines over the period 1974–1987, for which FAF scores were assigned during the years surrounding the Airline Deregulation Act of 1978. We compare analysts' ratings of airlines' disclosures before and after deregulation, breaking the population of airlines into quartiles based on profitability. In a fixed-effects multivariate model, we regress FAF scores on airlines' earnings, controlling for firm size.

For the period prior to deregulation, our findings indicate little or no association between earnings and voluntary disclosures, suggesting that, in the tradeoff between political costs and cost of capital, airlines chose to incur higher cost of capital (associated with less voluntary disclosure of good news) in order to avoid higher political costs (for example, lower future airfare rates). After deregulation, we find a direct and positive relationship between airlines' earnings and the volume of their voluntary disclosures, after controlling for firm effects and firm size. This suggests that once in the competitive marketplace, firms chose to increase their disclosure in order to reduce the cost of capital.

BACKGROUND: AIRLINE DEREGULATION

Congress enacted the Civil Aeronautics Act of 1938 in order to address alleged competitive instability in the nascent airline industry. Under this legislation, the Civil Aeronautics Board strictly controlled where airlines could fly and how much they could charge. Researchers claimed that this regulation increased the cost of plane tickets, based on comparisons between Board-regulated airlines and smaller intra-state airlines not subject to regulation (see [Keeler, 1972](#)). In October 1978, President Jimmy Carter signed the Airline Deregulation Act, taking the airline industry into the competitive marketplace. [Stanbury and Tretheway \(1986\)](#) published a bibliography about airline deregulation that includes 510 citations about deregulation of the airline industry in the United States, Canada and other countries.

A number of researchers examined how markets responded to airline deregulation (for example, [Davidson, Chandy, & Walker, 1984](#); [Vetsuypens & Helmuth, 1988](#); [Mitchell & Maloney, 1989](#); [Beneish, 1991](#); [El-Gazzar & Sannella, 1996](#); [Lepak, 1997](#)), indicating that, prior to deregulation, markets depressed airline stock prices. However, airlines' market returns improved after deregulation. Others consider the operational effects of airline deregulation ([Evans & Kessides, 1993](#); [Baltagi, Griffin, & Rich, 1995](#); [Adrangi, Chow, & Raffiee, 1996, 1997](#); [Cremieux, 1996](#); [Liu & Lynk, 1999](#)). Deregulation forced airlines to become more operationally efficient, as "hub" systems developed. As we discuss in the next section, our study contributes to the literature by considering a different aspect of airline deregulation: how regulation impacts airlines' tradeoff between conveying favorable information to the financial markets and avoiding political costs.

VOLUNTARY DISCLOSURE AND REGULATION

Verrecchia (1983) and Dye (1985) propose that firms use voluntary disclosures to overcome adverse selection, so that firms with favorable performance distinguish themselves from other firms by disclosing more information, increasing demand for their securities and lowering their cost of capital. Using data from the FAF reports employed by our study, Lang and Lundholm (1993) present evidence consistent with this hypothesis. They find a positive association between disclosure ratings and earnings performance in a cross-sectional analysis of the disclosure policies of the FAF firms. The most profitable firms provide more voluntary disclosures to overcome adverse selection.

More informative disclosures allow investors to more effectively and efficiently monitor managers, raising demand for a firm's securities and lowering its cost of capital (*cf.*, Diamond, 1985; Benston, 1986; Fishman & Hagerty, 1989). Using sample firms' public disclosures and the FAF data employed in this study, Lang and Lundholm (1993, 2000) find that firms increase their disclosures prior to securities offerings. Similarly, firms that frequently access the capital markets are more likely to release earnings forecasts to investors (Frankel, McNichols, & Wilson, 1995). More extensive disclosures lower firms' cost of debt and equity capital (Botosan, 1997; Sengupta, 1998; Lang & Lundholm, 2000; Botosan & Plumlee, 2002). Increased earnings opacity is linked to higher cost of capital and lower levels of trading in the stock market of a country (Bhattacharya, Daouk, & Welker, 2003).

However, according to Verrecchia (1983), firms limit voluntary disclosures to avoid revealing proprietary information to competitors. Darrough and Stoughton (1990) formally model the tradeoff between a firm's desire to convey favorable information to the financial markets (and thereby lower its cost of capital) and its need to protect proprietary information from potential competitors. They predict a negative association between the level of a firm's favorable disclosures and the threat of competitor entry into its product markets, so that firms avoid disclosing positive information that will attract competitive pressures. Using Canadian firms, Clarkson, Richardson, and Kao (1994) present empirical evidence consistent with Darrough and Stoughton's (1990) model. Harris (1998) finds that the level of competition in an industry affects the quality of firms' segment reporting. Similarly, Gelb (2000) finds that proprietary costs are an important determinant of the means employed to signal favorable news to the capital markets (such as information about sales volume or profitability in specific geographic or product segments).

Prior research indicates that regulation discourages voluntary disclosure. Watts and Zimmerman (1986, pp. 231–232) list rate regulation as one of several factors that may affect managers' choices of accounting procedures. More recently, Bohjroj, Blacconiere, and D'Souza (2004) examine the voluntary disclosures of electric utilities during 1996–1997, the transition to deregulation brought about by the National Energy Policy Act of 1992. After regulatory concerns abated, firms' disclosure levels increased, diminished by product market competition considerations. Firms with high levels of stranded costs refrained from some strategic disclosures before regulators had a chance to establish their cost recovery rates.¹

HYPOTHESIS

Based on this research indicating that regulation discourages voluntary disclosure, we hypothesize that, before deregulation, the most profitable airlines avoided voluntary disclosures for fear that political costs will bring on adverse regulatory outcomes. After deregulation, the most profitable airlines offered the highest levels of voluntary disclosure, while the least profitable airlines offered the lowest levels of disclosure:

H1. Airlines' voluntary disclosures will be more positively correlated with earnings after deregulation than before deregulation.

Hypothesis H1 is consistent with Verrecchia (1983), Dye (1985), and others, so that, after deregulation, profitable firms provided more voluntary disclosures in order to avoid adverse selection and to lower their cost of capital.

However, consistent with the research of Darrough and Stoughton (1990) and others, it is possible that after deregulation, profitable firms avoided issuing disclosures that would encourage other airlines to enter the marketplace. This would not have been a concern prior to deregulation because of the competitive barriers created by airline regulation. Therefore, proprietary costs could weaken the relation between earnings and voluntary disclosure levels subsequent to deregulation, working against above Hypothesis H1.

FAF DATA

To measure the level of voluntary disclosure, we use disclosure ratings published in the annual FAF reports from 1974 through 1987, the years

surrounding airline deregulation.² These reports provide intra-industry rankings of firms' disclosure practices for each year. A committee of analysts who follow each industry rates the firms in that industry, assigning disclosure rankings based on annual reports and 10-Ks, quarterly reports and other published materials voluntarily issued by the firm, and the firm's investor relations program. They also provide a weighted average of the three individual scores. Healy, Hutton, and Palepu (1999) provide a copy of the checklist used by analysts to evaluate a firm's disclosures.

FAF did not rate airlines' disclosures every year. The FAF subcommittee for airlines did not issue ratings in 1977 and between 1979 and 1982. This leaves a gap in the data immediately following 1978 deregulation, tumultuous years for the airline industry. From nine rated airlines in 1979, three disappeared, and nine were added to the ratings in 1983.

RESULTS

Table 1 provides a list of the population companies. FAF rated only seven firms in 1974. As we previously noted, three airlines dropped out of the study after 1978, and nine were added by 1983. By 1987, Braniff International, Eastern Air Lines, Frontier Holdings, Ozark Air Lines, People Express, Piedmont and Republic Airlines had all been dropped from the rating process, mostly due to closure or downsizing.

Table 2 provides sales, earnings, assets and employee information for the population companies. Average sales increased dramatically from 1976 (\$1.34 billion), 2 years before deregulation, until 1987, the last year in our study (\$4.26 billion). Earnings also varied widely. Average assets of the airlines increased, but the average number of employees declined from 1978 to 1983 (from 26,820 to 20,070 employees). The averages indicate that by 1983, the industry fell into a more stable pattern, as sales, assets and employees increased at steady paces. Average earnings did not fare so well, dropping in 1986 and 1987. Not shown in the table, average earnings increased to \$114.8 million in 1988. In future years, 1990 through 1993, the FAF-rated airlines showed an average loss.

Table 3 provides the results of regressing the analysts' scores on earnings, earnings multiplied by a dummy variable measuring deregulation, a firm size

Table 1. Population Firms by Year.

Company	1974	1975	1976	1978	1983	1984	1985	1986	1987
A M R corp.	X	X	X	X	X	X	X	X	X
Alaska airgroup inc.					X	X	X	X	X
Braniff international corp.	X	X	X	X					
British airways plc									
Continental airlines inc. ^a		X	X	X		X	X	X	X
Delta air lines inc.	X	X	X	X	X	X	X	X	X
Eastern air lines inc.	X	X	X	X	X	X	X		
Frontier holdings inc.					X	X			
K L M royal dutch air									
Midway airlines inc.								X	X
National airlines inc.	X	X	X	X					
Northwest airlines inc.	X	X	X	X	X	X	X	X	X
Ozark air lines inc.					X	X			
Pacific southwest airlines							X		
Pan am corp.	X	X	X	X	X	X	X	X	X
People express airlines inc.					X	X	X		
Piedmont aviation inc.					X	X	X	X	
Republic airlines inc.					X	X	X		
Southwest airlines co.					X	X	X	X	X
Trans world air inc.					X	X	X	X	X
U A L inc.	X	X	X	X	X	X	X		X
Usair group inc.					X	X	X	X	X
	8	9	9	9	15	16	15	11	11

^aTexas Air Corp. from 1986 to 1988.

Table 2. Mean Population Statistics by Year (in Millions).

Year	Number	Sales (Millions)	Earnings ^a (Millions)	Assets (Millions)	Employees (Thousands)
1974	8	\$1257.50	\$32.47	\$1334.11	26.44
1975	9	1172.26	-0.18	1194.99	23.62
1976	9	1339.12	28.66	1232.24	24.29
1978	9	1754.76	98.14	1662.70	26.82
1983	15	2239.92	6.46	1979.75	20.07
1984	16	2449.47	51.06	2027.63	21.16
1985	15	2768.40	55.12	2613.07	24.04
1986	11	2714.34	10.88	3188.49	27.42
1987	11	4264.67	10.39	4392.74	36.90

^aEarnings before extraordinary items.

Table 3. Regression Results.

Coefficient	Annual Report	Quarterly Disclosures	Investor Relations	Total
Intercept	31.4**	25.8**	28.0**	85.1**
Earnings	-42.6**	-41.6**	29.1	-55.1
Earnings \times Regul	57.4**	46.5	-5.3	98.6**
ln(Assets)	1.3**	-0.5	-0.7	0.0
Alaska	2.9	-4.4**	-8.0**	-9.5*
Braniff	1.1	-2.1	-0.5	-1.6
Continental	-4.6**	-6.1**	-7.5**	-18.2**
Delta	0.1	-0.9	-1.8	-2.6
Eastern	-3.2*	-1.8	-3.5	-8.5*
Frontier	-1.8	-7.4**	-8.0*	-17.2**
Midway	0.9	-5.1*	-7.2	-11.4
National	-8.3**	-5.5**	-4.3	-18.2**
Northwest	-1.1	-3.5**	-8.8**	-13.4**
Ozark	-8.4**	-8.6**	-10.3**	-27.4**
Pacific	-3.1	-6.1*	-11.6**	-20.8**
PanAm	-0.5	-0.8	-1.0	-2.4
Peoples Express	-6.6**	-9.4**	-8.8**	-24.9**
Piedmont	0.2	-2.7	-3.7	-6.2
Republic	-3.1	-5.2	-6.6*	-14.9**
Southwest	2.1	-2.2	-4.8	-4.9
TWA	-3.8*	-5.6**	-9.7**	-19.0**
UAL	-4.5**	-0.2	-3.9	-8.6**
USAirways	-1.6	-1.7	-2.8	-6.1
Adjusted R^2	53.2%	39.7%	33.6%	54.1%
F -factor	$F = 6.264^{**}$	$F = 4.055^{**}$ $N = 102$	$F = 3.348^{**}$	$F = 6.456^{**}$

p -values are provided for reference purposes only. Because the statistical analysis was performed on a selected population of airlines, and not on a sample, p -values do not have statistical validity.

Earnings, net income/total assets; Regul, dummy variable = 1 after deregulation, otherwise, 0; ln(Assets), natural logarithm of total assets, proxy for firm size. Airline variables are dummy variables = 1 for each airline, otherwise = 0.

$$\begin{aligned} \text{Score} = & a_1 + a_2 \text{Earnings} + a_3 (\text{Earnings})(\text{Regul}) + a_4 \ln(\text{Assets}) + a_5 \text{Alaska} \\ & + a_6 \text{Braniff} + a_7 \text{Continental} + a_8 \text{Delta} + a_9 \text{Eastern} + a_{10} \text{Frontier} \\ & + a_{11} \text{Midway} + a_{12} \text{National} + a_{13} \text{Northwest} + a_{14} \text{Ozark} + a_{15} \text{Pacific} \\ & + a_{16} \text{PanAm} + a_{17} \text{Peoples} + a_{18} \text{Piedmont} + a_{19} \text{Republic} + a_{20} \text{Southwest} \\ & + a_{21} \text{TWA} + a_{22} \text{UAL} + a_{23} \text{USAirways} + e \end{aligned}$$

* $p < 0.05$.

** $p < 0.01$.

proxy and individual dummy variables for individual airlines:

$$\begin{aligned} \text{Score} = & a_1 + a_2 \text{Earnings} + a_3 (\text{Earnings})(\text{Regul}) \\ & + a_4 \ln(\text{Assets}) + a_5 \text{Alaska} + a_6 \text{Braniff} \\ & + a_7 \text{Continental} + a_8 \text{Delta} + a_9 \text{Eastern} \\ & + a_{10} \text{Frontier} + a_{11} \text{Midway} + a_{12} \text{National} \\ & + a_{13} \text{Northwest} + a_{14} \text{Ozark} + a_{15} \text{Pacific} + a_{16} \text{PanAm} \\ & + a_{17} \text{Peoples} + a_{18} \text{Piedmont} + a_{19} \text{Republic} + a_{20} \text{Southwest} \\ & + a_{21} \text{TWA} + a_{22} \text{UAL} + a_{23} \text{USAirways} + e \end{aligned}$$

Lang and Lundholm (1993) indicate that firm size, volatility of past stock returns, the earnings-return correlation and securities offerings can be associated with FAF ratings. All of these may play a role in airlines' voluntary disclosure decisions. This regression controls for firm-specific effects using dummy variables for each airline, addressing the possibility that, for example, individual firms with the highest earnings also just happen to have corporate cultures that conscientiously work for the highest disclosure scores. We use a fixed-effects model rather than a random effects model, following Baltagi (1995).

To avoid perfect collinearity, the regression excludes a variable for one airline, American Airlines (AMR). We excluded this particular airline because it survived the entire quasi-experiment period, and incurred less turmoil (takeovers, etc.) than other large airlines. Therefore, one would interpret the intercept in the regression as a "fixed" rating for AMR. The other airlines' coefficients measure how much higher or lower their analysts' scores were, in comparison with AMR. For example, in the Total column, AMR had an average score of 85.1. Continental Airlines, with a coefficient of -18.2 , earned an average score 18.2 points lower than AMR, with all other factors equal. Interestingly, the negative coefficients for other airlines in almost all categories indicate that AMR earned the highest FAF ratings.

Adjusted- R^2 factors range from 33.6 to 53.2%, and all regressions return F -factors with $p < 0.001$. Because the study uses a deliberately selected case-study population of airlines, rather than a randomly selected sample, p -values do not indicate attributes of larger populations. We report p -values only to distinguish coefficient estimates that are much greater than, or less than, 0.

The regression indicates that the airlines' FAF disclosure scores for annual report, quarterly disclosures and total were more closely associated with earnings after deregulation, than before. The coefficients on earnings of -42.6 (annual report), -41.6 (quarterly disclosures) and -55.1 (total)

indicate that, before deregulation, airlines reporting higher earnings typically provided weaker disclosures in their annual and quarterly reports. After deregulation, the coefficients on Earnings \times Regul of 57.4 (for annual report), 46.5 (quarterly disclosures) and 98.6 (total), all with $p < 0.001$, indicate that more profitable airlines provided more voluntary disclosures after deregulation.

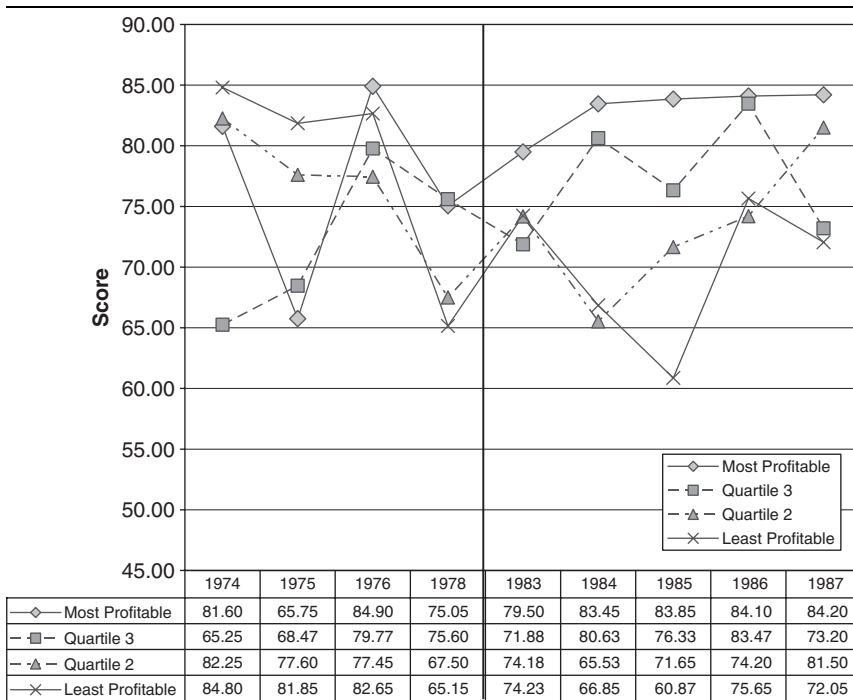
We found no such effects for investor relations, where the coefficient on Earnings is 29.1 and on Earnings \times Regul is -5.3 . Of all disclosure areas examined, the less formal voluntary disclosures made in investor relations are least likely to lead to incurrence of political costs. In fact, one might expect airlines wishing to provide voluntary disclosures – in order to reduce the cost of capital – to attempt to do so in ways that would circumvent the regulatory process. Accordingly, prior to deregulation (and prior to regulation FD), more-profitable airlines might have compensated for the lack of voluntary disclosure in their annual and quarterly reports by providing more voluntary disclosures in their investor relations department. This would explain the low coefficient for the investor relations regression result.

Consistent with the research of Darrough and Stoughton (1990) and others, concerns about high profits inviting new competitors to the marketplace could weaken the relation between earnings and voluntary disclosure levels subsequent to deregulation. Our regression results suggest that competitive pressures did not discourage profitable airlines from offering more voluntary disclosures after deregulation.

Table 4 illustrates how airlines' voluntary disclosure changed after deregulation. The table shows the airlines broken into quartiles by earnings. The "most profitable" sub-population includes the 25% of rated airlines reporting the highest net earnings that year. The "least profitable" sub-population includes the 25% of rated airlines reporting lowest net earnings. Quartiles 3 and 2 represent the intermediate quartiles, from highest to lowest. The table provides information from FAF's "TOTAL" scores.

Prior to deregulation, the least profitable airlines revealed the most voluntary disclosures in 2 out of 4 years, while the most profitable airlines' voluntary disclosures revealed the least voluntary disclosures in 1975 and the highest voluntary disclosures in 1976. In other words, there appears to be little or no pattern to companies' earnings and voluntary disclosures. However, subsequent to regulation, a clear pattern emerges, consistent with Hypothesis H1. The most profitable companies provided the highest levels of voluntary disclosures in all 5 years shown. And the least profitable companies provide the lowest levels of voluntary disclosures in 2 out of 5 years. The other 3 years are very close to the lowest levels in the population.

Table 4. Analysts' Total Score by Year and Profitability.



This panel shows FAF analysts' ratings of airlines' overall disclosures before and after 1978 deregulation. The population of airlines is broken down by profitability, so that the 25% of airlines reporting the highest net income were included in the "most profitable" segment.

CONCLUSION

In this study, we consider how firms tradeoff between cost of capital and political costs before and after deregulation: should regulated companies voluntarily disclose "good news" that may reduce cost of capital, but might also invite adverse regulatory outcomes? Alternatively, do the competitive barriers formed by regulation eliminate companies' concerns about disclosing private information to competitors, encouraging more voluntary disclosure that will reduce their cost of capital? Airline deregulation offers a unique setting for this quasi-experiment, because it is one of the largest

deregulation events in the history of the United States, and because of the availability of a unique database of disclosure ratings during this time period.

Using FAF data covering the period 1974 through 1987, we examine firm disclosure scores of airlines based on firm profitability. In the regulated environment (1974–1976 and 1978), we see a negative relation between firm profitability and disclosure. We propose that the most profitable airlines “kept quiet” in order to avoid adverse regulatory outcomes. In the deregulated environment (1983–1987), a positive association emerges where firms reporting the highest profits earn the highest disclosure scores while firms reporting the lowest profits (or losses) receive the lowest disclosure scores, suggesting that airline deregulation subverted voluntary disclosures. We did not find any indication that airlines avoided voluntary disclosure in order to discourage new competitors from entering the marketplace.

Interestingly, we found no significant differences in voluntary disclosure after deregulation with respect to investor relations scores. This is consistent with the notion that, prior to deregulation, regulators could not monitor many of the private and informal disclosures made by an investor relations department, giving airlines the opportunity to offer richer voluntary disclosures to investors.

Overall, our results are consistent with [Watts and Zimmerman \(1986\)](#), showing that companies’ accounting choices respond to political costs. [Bohjroj et al. \(2004\)](#) find that energy deregulation was associated with increases in energy companies’ voluntary disclosures. Our results are consistent with their study with respect to the most profitable airlines. However, less profitable airlines’ voluntary disclosures decreased over the same time period.

Prior research associates airline regulation, intended to address “competitive instability,” with high prices, operating inefficiencies, low stock returns and barriers to competition. We show another likely consequence to regulation: disincentives to voluntarily disclose accounting information. When constructing (or deconstructing) regulatory plans-in areas such as electricity, broadcasting or healthcare, legislators must consider how regulatory practices can suppress financial reporting. Furthermore, investors must consider that regulated companies may sometimes avoid presenting “good news” disclosures voluntarily.

NOTES

1. Stranded costs are costs incurred by an airline to accommodate volume prior to deregulation, but no longer needed after deregulation.

2. The Financial Analyst Federation is a predecessor to the Association for Investment Management and Research and the CFA Institute.

REFERENCES

- Adrangi, B., Chow, G., & Raffiee, K. (1996). Passenger output and labor productivity in the U. S. airline industry after deregulation: A profit function approach. *Logistics and Transportation Review*, 32(4), 389–408.
- Adrangi, B., Chow, G., & Raffiee, K. (1997). Airline deregulation, safety, and profitability in the U.S. *Transportation Journal*, 36(4), 44–53.
- Baltagi, B. H. (1995). *The econometric analysis of panel data*. New York: Wiley.
- Baltagi, B. H., Griffin, J. M., & Rich, D. P. (1995). Airline deregulation: The cost pieces of the puzzle. *International Economic Review*, 36(1), 245–257.
- Beneish, M. D. (1991). The effect of regulatory changes in the airline industry on shareholders' wealth. *Journal of Law and Economics*, 34(2), 395–430.
- Benston, G. J. (1986). The benefits and costs to managers of voluntary accounting disclosure. *Contemporary Accounting Research*, 3(Fall), 35–44.
- Bhattacharya, U., Daouk, H., & Welker, M. (2003). The world price of earnings opacity. *The Accounting Review*, 78(3), 641–678.
- Bohroj, S., Blacconiere, W. G., & D'Souza, J. (2004). Voluntary disclosure in a multi-audience setting: An empirical investigation. *The Accounting Review*, 79(14), 921–947.
- Botosan, C. A. (1997). Disclosure level and the cost of equity capital. *The Accounting Review*, 72(July), 323–350.
- Botosan, C. A., & Plumlee, M. A. (2002). A re-examination of disclosure level and the expected cost of equity capital. *Journal of Accounting Research*, 41(March), 21–40.
- Clarkson, P. M., Richardson, G. D., & Kao, J. L. (1994). The voluntary inclusion of forecasts in the MD&A section of annual reports. *Contemporary Accounting Research*, 11(Fall), 423–461.
- Cremieux, P.-Y. (1996). The effect of deregulation on employee earnings: Pilots, flight attendants, and mechanics, 1959–1992. *Industrial and Labor Relations Review*, 49(2), 223–243.
- Darrrough, M., & Stoughton, N. (1990). Financial disclosure policy in an entry game. *Journal of Accounting and Economics*, 12(1–3), 219–243.
- Davidson, W. N., III., Chandy, P. R., & Walker, M. (1984). The stock market effects of airline deregulation. *Quarterly Journal of Business and Economics*, 4, 31–47.
- Diamond, D. W. (1985). Optimal release of information by the firm. *The Journal of Finance*, 40(September), 1071–1094.
- Dye, R. A. (1985). Disclosure of nonproprietary information. *Journal of Accounting Research*, 23(Spring), 123–145.
- El-Gazzar, S. M., & Sannella, A. J. (1996). The effects of airline deregulation on shareholder wealth: Some additional evidence. *Atlantic Economic Journal*, 24(2), 144–154.
- Evans, W. N., & Kessides, I. (1993). Structure, conduct, and performance in the deregulated airline industry. *Southern Economic Journal*, 59(3), 450–467.
- Fishman, M., & Hagerty, K. (1989). Disclosure decisions by firms and the competition for price efficiency. *The Journal of Finance*, 44(July), 633–646.

- Frankel, R., McNichols, M., & Wilson, G. P. (1995). Discretionary disclosures and external financing. *The Accounting Review*, 70(January), 135–150.
- Gelb, D. S. (2000). Corporate signaling with dividends, stock repurchases and accounting disclosures: An empirical study. *Journal of Accounting, Auditing and Finance*, 15, 99–120.
- Harris, M. S. (1998). The association between competition and managers' business segment reporting decisions. *Journal of Accounting Research*, 36(Spring), 111–129.
- Healy, P. M., Hutton, A. P., & Palepu, K. G. (1999). Stock performance and intermediation changes surrounding sustained increases in disclosure. *Contemporary Accounting Research*, 16(3), 485–520.
- Keeler, T. E. (1972). Airline regulation and market performance. *The Bell Journal of Economics and Management Science*, 3(2), 399–424.
- Lang, M., & Lundholm, R. (1993). Cross-sectional determinants of analyst ratings of corporate disclosures. *Journal of Accounting Research*, 31(Autumn), 246–271.
- Lang, M., & Lundholm, R. (2000). Voluntary disclosure and equity offerings: Reducing information asymmetry or hyping the stock? *Contemporary Accounting Research*, 17(Winter), 623–662.
- Lepak, G. M. (1997). Airline deregulation and the impact on stock prices of major surviving carriers. *Logistics and Transportation Review*, 33(2), 107–115.
- Liu, Z., & Lynk, E. L. (1999). Evidence on market structure of the deregulated U.S. airline industry. *Applied Economics*, 31, 1083–1092.
- Mitchell, M. L., & Maloney, M. T. (1989). Crisis in the cockpit? The role of market forces in promoting air travel safety. *Journal of Law and Economics*, 32, 329–356.
- Sengupta, P. (1998). Corporate disclosure quality and the cost of debt. *The Accounting Review*, 73(October), 459–474.
- Stanbury, W. T., & Tretheway, M. W. (1986). Airline deregulation: A bibliography. *Logistics and Transportation Review*, 22, 449–489.
- Verrecchia, R. (1983). Discretionary disclosure. *Journal of Accounting and Economics*, 5(3), 179–194.
- Vetsuypens, M. R., & Helmuth, J. A. (1988). Airline deregulation: Additional evidence from the capital markets. *Quarterly Journal of Business and Economics*, 27(2), 117–138.
- Watts, R. L., & Zimmerman, J. L. (1986). *Positive accounting theory*. Englewood Cliffs, NJ: Prentice-Hall.

AUDIT PRICING AND INTERNAL CONTROL DISCLOSURES AMONG NON-ACCELERATED FILERS

Jean C. Bedard, Udi Hoitash and Rani Hoitash

ABSTRACT

In this paper we examine the association of audit fees with disclosures regarding internal control effectiveness under Section 302 of the Sarbanes-Oxley Act of 2002 (SOX). In contrast to previous studies, we focus on non-accelerated filers, whose eventual compliance with the costly provisions of SOX Section 404 internal control reporting has become a contentious issue. While auditors are not required to test controls under Section 302, we find that companies disclosing Section 302 problems pay higher audit fees, suggesting greater engagement effort and/or a risk premium. Further, our results indicate that fees are adjusted for risk associated with problem severity, but relative risk adjustment does not change between 2003 and 2004. We also find a significant fee increase for “clean” companies in 2004, although there was no change in regulation for non-accelerated filers in that year. Further examining fee changes from 2003 to 2004, we find that companies remediating internal control problems disclosed in 2003 continue to pay higher fees in 2004, and fees of first-time disclosers in 2004 are significantly higher. Additionally, audit fees are higher for both continuing and new clients of the Big 4, lower for companies switching away from Big 4 firms and unchanged for companies switching to another Big 4 firm.

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1. INTRODUCTION

The implementation of Section 404 of the Sarbanes-Oxley Act (SOX) in late 2004 resulted in significant increases in audit fees of accelerated filers.¹ The high cost of compliance with SOX 404 has led to concerns about the effect of this and other financial regulations on the U.S. public markets (e.g., [Ip, Scannell, & Solomon, 2007](#)). In particular, SOX 404 compliance costs have fueled debate over whether this section should be extended to smaller companies, or whether Section 302 internal control regulations (which do not require management or auditor testing of internal controls) are sufficient. While supporters of Section 404 note that improved internal controls should prevent future financial frauds (e.g., [Grothe, 2007](#)), those opposed to extension of SOX 404 consider its costs (including audit fees) to be relatively more burdensome for smaller companies. Thus far, the SEC has responded to these concerns by extending the Section 404 implementation deadline several times, but public statements of Chairman Cox and others indicate firm commitment to eventual compliance for all U.S. public companies ([Securities and Exchange Commission, 2006](#)).²

Audit fees are a significant component of total compliance costs, and are publicly available in 10-K filings. Thus, analysis of audit fees provides a window that helps to understand factors affecting cost of compliance under both Section 404 and 302 regimes. We examine two basic issues regarding audit pricing for non-accelerated filers under Section 302, using a panel of 2,296 non-accelerated filers filing Section 302 reports in both 2003 and 2004, having complete data for both years. First, we consider whether audit fees are adjusted for the risk implied by Section 302 reports. Professional standards direct auditors to increase engagement effort as risk of financial misstatements increases. If Section 302 reports provide useful indicators of company risk, we should observe higher audit fees among companies disclosing problems and gradations of fee increases associated with problem severity. Prior studies by [Raghunandan and Rama \(2006\)](#) and [Hoitash, Hoitash, and Bedard \(2007\)](#) find risk adjustment among accelerated filers using Section 404 data. However, results of those studies do not necessarily apply to non-accelerated filers. For instance, the weaker provisions of Section 302 may lead to lower quality internal control reporting relative to Section 404. Additionally, auditors may be more likely under Section 404 to rely on internal controls in planning the engagement.³ While [Hogan and Wilkins \(2007\)](#) examine Section 302 reports, their sample combines accelerated and non-accelerated filers. We find that audit fees of non-accelerated filers are adjusted for identified Section 302 risks, and that this

association increases with problem severity. While both material weaknesses and less-severe problems are associated with higher fees, the greatest fee increase is for companies reporting overall ineffective disclosure controls in addition to specific material weaknesses.

Our second research question concerns how audit pricing among non-accelerated filers changed as accelerated filers began implementing Section 404. Research on accelerated filers shows a very large increase in audit fees for “clean” companies when Section 404 was implemented. But because accelerated filers implemented Section 404 auditor testing in 2004, those fee increases could be due primarily to additional audit procedures applied even to low-risk clients. However, several changes in the auditing profession around the time of Section 404 implementation could have affected pricing of engagements *not* subject to the new internal control testing provisions, as well as the relative risk premium. These include “spillover effects” from Section 404 integrated audits to other audit engagements and continuing effects of reduced competition resulting from the demise of Arthur Andersen LLP. This study shows that audit fees increased about 12 percent from 2003 to 2004 for companies not reporting Section 302 internal control problems, in contrast to the 100 percent increase reported by [Hoitash et al. \(2007\)](#) using a similar model. Regarding risk adjustment for companies with disclosed problems, we observe that the risk premium paid by companies reporting Section 302 problems over clean companies was similar in 2003 and 2004. This again contrasts with accelerated filers, as [Hoitash et al. \(2007\)](#) find less risk adjustment in that group for Section 404 reports in 2004, compared with Section 302 reports in 2003.

We further investigate differences in audit pricing from 2003 to 2004 using a change model, which more precisely measures factors affecting each company’s audit fee in 2004 against its own experience in 2003. This model shows increased audit fees for companies with new problem disclosures in 2004. However, there is no corresponding decrease for companies remediating previously reported problems, suggesting that auditors’ heightened risk awareness continues after problem remediation. We also find strong effects of auditor changes. Of the non-accelerated filers with a Big 4 auditor in 2003, those staying with the same Big 4 firm had increased fees in 2004, those changing from a Big 4 to a non-Big 4 firm in 2004 had decreased fees, and those switching to another Big 4 firm did not experience a significant change. Also, non-accelerated filers switching from a smaller firm to the Big 4 paid higher fees in 2004. These results refine the findings of prior research that generally finds a discount on initial engagements (e.g., [Ettredge & Greenberg, 1990](#)).

The remainder of this paper proceeds as follows. [Section 2](#) describes in more detail the regulatory setting in which our study takes place, and develops our specific research questions. [Section 3](#) describes the data and research methods employed. [Section 4](#) presents results and in [Section 5](#) we discuss the study's implications and limitations.

2. BACKGROUND AND DEVELOPMENT OF RESEARCH QUESTIONS

The financial scandals of the early 2000s emphasized the importance of internal controls over financial reporting (ICFR). In reaction, some provisions of the SOX of 2002 are aimed at improving control effectiveness. While the high compliance cost associated with Section 404 is broadly recognized and has brought substantial opposition to this provision, Section 302 provisions have received less attention. Provisions of Section 302 differ from Section 404 with regard to responsibilities of management and auditor, and the timing of reporting. Section 404 requires management to document, test and evaluate ICFR, and auditors to independently test and opine on ICFR effectiveness. Section 302 requires management to evaluate and report on the overall effectiveness of “disclosure controls and procedures” on a quarterly basis, and also to report specific changes in ICFR occurring during the period that might be associated with material error in the financial reports. The auditor reviews management's Section 302 assertions, but is not required to independently test them.

The availability of public disclosures on ICFR effectiveness has revived research on adjustment of audit pricing for internal control risk. According to auditing standards, engagement effort should be tailored to the level of risk that the client's financial reports might be misstated. Essentially, if audit fees are not adjusted for risk, then wealth is transferred from low-risk companies that invest in good management practices, to high-risk companies that do not. Control risk (the risk that internal controls might not prevent or detect a misstatement) is a key component of overall engagement risk. Research on the association of internal control risk and audit fees from prior to 2000 either fails to find an association (e.g., [O'Keefe, Simunic, & Stein, 1994](#); [Mock & Wright, 1993](#); [Hackenbrack & Knechel, 1997](#); [Felix, Gramling, & Maletta, 2001](#)) or finds that the association is limited to certain sectors (e.g., [Stein, Simunic, & O'Keefe, 1994](#)). These inconsistent findings may be due to auditors' decisions not to rely on (i.e., to “test around”) internal

controls in many engagements. More recent research (Johnstone & Bedard, 2007) shows that in 2001–2003, significant internal control weaknesses are associated with both higher planned audit hours and higher hourly billing rates.

Studies examining audit risk adjustment using data derived from provisions of SOX include Hoitash et al. (2007), who examined accelerated filers in 2003 and 2004 (before and after the implementation of Section 404); Raghunandan and Rama (2006), who studied accelerated filers in the manufacturing sector in the same period; and Hogan and Wilkins (2007), who examined a combined sample of accelerated and non-accelerated filers prior to Section 404 implementation. While these studies find that audit fees are adjusted for internal control risk implied in the disclosures, they do not directly address the question of whether risk adjustment extends to the smaller companies that are non-accelerated filers. Results might be different for these companies, as they were not immediately facing implementation of the more stringent provisions of Section 404. Due to lack of auditor involvement in Section 302 documentation and testing of controls, and because the SEC and the PCAOB did not articulate specific requirements for management's Section 302 control evaluation, the quality of ICFR reporting might vary across companies. Also, auditors may be more likely to rely on internal control in planning the engagement, if they are required to test controls under Section 404 audits. Hence, it is not clear whether a link between Section 302 problems and audit fees will hold for non-accelerated filers.

In studying risk adjustment, we consider not only the presence of Section 302 problems but also their severity, in two ways. First, we test whether the association of material weaknesses in ICFR is greater than that of other control problems. Material weaknesses exist when there is more than a remote likelihood that a material misstatement will not be prevented or detected by the internal controls (Securities and Exchange Commission, 2003). Disclosure of less severe problems (e.g., those that could introduce immaterial misstatements) is voluntary. While auditors may adjust their audit fees according to problem severity, research shows that classification of ICFR problems by severity is difficult (Earley, Hoffman, & Joe, 2007). Hoitash et al. (2007) and Raghunandan and Rama (2006) find severity-adjusted pricing among accelerated filers under Section 404, and Hogan and Wilkins (2007) show this using Section 302 data in a combined sample prior to 2004. Because severity distinctions and disclosure decisions are made by management under Section 302 (not subject to auditor testing), their results may not hold for non-accelerated filers alone.

Second, we measure problem severity using management's Section 302 assessment of overall effectiveness of disclosure controls. Because disclosure

controls substantially overlap with ICFR but are not precisely the same, management may reach different conclusions regarding the effectiveness of its disclosure controls and the existence of ICFR problems. While this might appear contradictory (e.g., [Dunn, 2006](#)), it is possible under existing SEC rules.⁴ We examine whether management's assessment of effective disclosure controls provides information relevant to auditors' pricing of risk, beyond the disclosure of specific ICFR problems. Our first research question is:

RQ1. Are audit fees of non-accelerated filers adjusted for severity of risk associated with internal control problems reported under Section 302?

We next consider how audits of non-accelerated filers changed, as Section 404 was initially implemented for larger companies. For firms subject to Section 404, [Hoitash et al. \(2007\)](#) find a large increase in audit fees for companies with effective ICFR from 2003 to 2004, and a reduction in risk-based pricing from 2003 to 2004. They attribute this pattern to implementation of extensive required testing of internal controls by auditors for all clients, as a result of the regulatory change. But are other changes in the professional environment also contributing to that increase? While there was no change in regulation for non-accelerated filers between 2003 and 2004, audit fees may have increased in this group for several reasons. First, auditors could have simply demanded a higher level of assurance on all financial statement audits. Second, audit firms changed methodologies to comply with standards for the integrated audit under AS No. 2. Anecdotal evidence from large audit firms suggests that in order to implement a consistent approach across all public company clients, their procedures for non-accelerated filers changed as well. Third, the demise of Arthur Andersen LLP caused a reallocation of its clients to other firms, and a subsequent realignment of the portfolios of major audit firms. The resulting reduction in competition in the market for audit services could have contributed to increased fees for new clients, and also for continuing clients if contracts were rewritten ([Feldman, 2006](#)). Fourth, the effects of recent financial scandals and regulatory change might have caused audit firms to increase fees in order to protect themselves from additional litigation exposure. Finally, the tight labor market and limited supply of qualified auditors could have also contributed to the increase in fees. In sum, several factors may have affected pricing of engagements for non-accelerated filers during the transition to Section 404. We pose the following research question:

RQ2. How does audit pricing for non-accelerated filers change as Section 404 was implemented for accelerated filers?

We address this question by measuring the association of fees with Section 302 disclosures across years. This 2-year window allows separation of companies reporting Section 302 problems in both years from those reporting new problems in 2004, and from those remediating previously disclosed problems. If companies consistently disclose problems in internal controls, auditors might adopt a non-reliance approach, auditing around these problems. If so, then companies with repeated problems will pay higher audit fees in both years, and the fee may not differ across years. If companies remediate their ICFR problems so that auditors can potentially rely on controls, audit fees may decrease in 2004. However, [Hoitash et al. \(2007\)](#) report that accelerated filers remediating ICFR problems in 2004 continue to pay higher fees in that year.

We also investigate effects of the changing audit market by considering switches to, from, and within large audit firms between 2003 and 2004. Research from the 1980s and 1990s (e.g., [Ettredge & Greenberg, 1990](#)) generally shows that during that period, audit firms discounted the fee for initial engagements. Recently, [Griffin and Lont \(forthcoming\)](#) find that auditor switches among U.S. Big 4 clients are associated with fee reductions in the early 2000s, while auditor switches among non-Big 4 clients do not result in differences in fees. Research has not specifically explored pricing effects of auditor switches among non-accelerated filers, but it is important to do so for two reasons. First, the upheaval in the audit market during our sample period (associated with the recent demise of Arthur Andersen and the implementation of SOX 404) may have increased the ability of large audit firms to obtain clients without discounting. Second, study of pricing effects of auditor switches in 2004 among accelerated filers is confounded by the additional audit work associated with Section 404 internal control testing, whereas this is not the case for non-accelerated filers. We examine effects of changes in internal controls and audit firms after controlling for other factors explaining changes in audit fees, including variations in company size, complexity and risk.

3. SAMPLE SELECTION AND RESEARCH DESIGN

Our sample consists of non-accelerated filers with available Section 302 internal control reports for fiscal years 2003 and 2004.^{5,6} Variables used in the study are defined in [Table 1](#). The models (described below) contain control variables based on prior audit fee research ([Hay, Knechel, & Wong, 2006](#)). We measure company size using the natural log of total assets, and

Table 1. Variable Definitions.

Variable	Description [Source]
lnFEE	The natural logarithm of the total audit fees paid to the auditor [<i>Audit Analytics</i>]
MW	An indicator variable equal to 1 if the firm disclosed material weakness (zero otherwise) [<i>Audit Analytics</i>]
OD	An indicator variable equal to 1 if the firm disclosed other deficiencies (zero otherwise) [<i>Audit Analytics</i>]
MWDC	An indicator variable equal to 1 if the firm disclosed material weakness and not effective disclosure controls (zero otherwise) [<i>Audit Analytics</i>]
ODDC	An indicator variable equal to 1 if the firm disclosed other deficiencies and not effective disclosure controls (zero otherwise) [<i>Audit Analytics</i>]
ONLYMW	An indicator variable equal to 1 if the firm disclosed material weakness but effective disclosure controls (zero otherwise) [<i>Audit Analytics</i>]
ONLYOD	An indicator variable equal to 1 if the firm disclosed other deficiencies but effective disclosure controls (zero otherwise) [<i>Audit Analytics</i>]
YEAR	An indicator variable equal to 1 for observations with fiscal 2004 (zero otherwise) [<i>Audit Analytics</i>]
lnASSETS	Natural logarithm of total assets [<i>Compustat data6</i>]
SQRTSEGMENT	Square root for the total number of business and geographic segments [<i>Compustat Segment file</i>]
FOREIGN	Indicator variable equal to 1 if the audit client has foreign operations (zero otherwise) [<i>Compustat data item #150</i>]
ROA	Return on assets defined as net income divided by total assets [<i>Compustat data172</i> divided by <i>data6</i>]
LOSS	Indicator variable equal to 1 if the audit client reported negative net (zero otherwise) [<i>Compustat data item #172</i>]
INVREC	Inventory plus accounts receivables divided by total assets [<i>Compustat data item #2, #3, #6</i>]
NEW_FIN	Indicator variable equal to 1 if the audit client issues equity (<i>Compustat #108</i> > 5 percent of beginning total assets) in the current fiscal year (zero otherwise)
MERGER	An indicator variable equal to 1 when the client has experienced a merger in the current fiscal year (zero otherwise) [<i>SDC Platinum</i>]
RESTRUCTURE	An indicator variable equal to one if the client took a restructuring charge in the current fiscal year (zero otherwise) [Coded as one if any of the following <i>Compustat data items</i> are non-zero: 376, 377, 378 or 379]
INSTTOWN	Percentage of shares owned by institutions [Thompson Financials]
BIG 4	Indicator variable equal to 1 when the auditor is a member of the Big 4 (zero otherwise) [<i>Audit Analytics</i>]
AUDCHANGE	An indicator variable equal to 1 if the firm changed auditors from the previous year (zero otherwise) [<i>Compustat data item 149</i>]

Table 1. (Continued)

Variable	Description [Source]
LITIGATION	An indicator variable equal to 1 if the firm operates in a high-litigation industry, and 0 otherwise (high-litigation industries are industries with SIC codes of 2833–2836, 3570–3577, 3600–3674, 5200–5961, and 7370) [<i>Compustat</i>]
lnNASFEE	The natural logarithm of all other services fees (other than audit fees) paid to the auditor
GOINGCONCERN	Indicator variable equal to 1 if the auditor issues a going concern opinion [<i>Audit Analytics</i>]
OTHERMODIFIED	Indicator variable equal to 1 for modified audit opinions [<i>Compustat</i> data item 149]

capture business risk through return on assets and an indicator variable for companies with a recent net loss. Company complexity is measured by the proportion of inventory and receivables in assets, the number of business segments, foreign operations, issuance of equity, recent merger and recent restructuring. We also control for factors associated with governance, oversight and monitoring, including institutional ownership, auditor size, recent auditor change and litigation-prone industries.

Our first model addresses RQ1 by measuring the association of audit fees with the severity of ICFR problems during our sample period. Addressing RQ1, we first separate disclosed ICFR problems into material weaknesses (MW) and other deficiencies (OD), to investigate effects of problem severity.⁷

$$\begin{aligned}
 \ln FEE = & \alpha + \beta_1 MW + \beta_2 OD + \beta_3 YEAR + \beta_4 \ln ASSETS \\
 & + \beta_5 \sqrt{SEGMENT} + \beta_6 FOREIGN + \beta_7 ROA \\
 & + \beta_8 LOSS + \beta_9 INVREC + \beta_{10} NEW_FIN \\
 & + \beta_{11} MERGER + \beta_{12} RESTRUCTURE \\
 & + \beta_{13} INSTITOWN + \beta_{14} BIG\ 4 + \beta_{15} AUDCHANGE \\
 & + \beta_{16} LITIGATION + \beta_{17} \ln NASFEE \\
 & + \beta_{18} GOINGCONCERN + \beta_{19} OTHERMODIFIED + e \quad (1)
 \end{aligned}$$

Our second model provides a more detailed consideration of risk adjustment by separating companies reporting internal control problems into four categories: MWDC (= 1 if there is a material weakness in ICFR and ineffective disclosure controls); ONLYMW (= 1 if there is a material

weakness in ICFR and effective disclosure controls); ODDC (= 1 if there is another deficiency in ICFR and ineffective disclosure controls); and ONLYOD (= 1 if there is another deficiency in ICFR and effective disclosure controls)

$$\begin{aligned} \ln\text{FEE} = & \alpha + \beta_1\text{ONLYMW} + \beta_2\text{MWDC} + \beta_3\text{ONLYOD} + \beta_4\text{ODDC} \\ & + \beta_5\text{YEAR} + \beta_6\ln\text{ASSETS} + \beta_7\text{SQRTSEGMENT} \\ & + \beta_8\text{FOREIGN} + \beta_9\text{ROA} + \beta_{10}\text{LOSS} + \beta_{11}\text{INVREC} \\ & + \beta_{12}\text{NEW_FIN} + \beta_{13}\text{MERGER} + \beta_{14}\text{RESTRUCTURE} \\ & + \beta_{15}\text{INSTITOWN} + \beta_{16}\text{BIG 4} + \beta_{17}\text{AUDCHANGE} \\ & + \beta_{18}\text{LITIGATION} + \beta_{19}\ln\text{NASFEE} \\ & + \beta_{20}\text{GOINGCONCERN} + \beta_{21}\text{OTHERMODIFIED} + e \quad (2) \end{aligned}$$

Our third model addresses RQ2 by investigating differences in audit pricing over time. We first adopt the approach used by [Hoitash et al. \(2007\)](#) for accelerated filers in the period of SOX 404 implementation. Model 3 contains interactions of MW and OD with the 2004 YEAR indicator. A positive interaction implies greater risk adjustment in 2004 over 2003, while a negative interaction implies less risk adjustment. The YEAR variable in this model measures the difference in fees from 2003 to 2004 among low-risk companies

$$\begin{aligned} \ln\text{FEE} = & \alpha + \beta_1\text{MW} + \beta_2\text{OD} + \beta_3\text{YEAR} + \beta_4\text{MW} \times \text{YEAR} \\ & + \beta_5\text{OD} \times \text{YEAR} + \beta_6\ln\text{ASSETS} + \beta_7\text{SQRTSEGMENT} \\ & + \beta_8\text{FOREIGN} + \beta_9\text{ROA} + \beta_{10}\text{LOSS} + \beta_{11}\text{INVREC} \\ & + \beta_{12}\text{NEW_FIN} + \beta_{13}\text{MERGER} + \beta_{14}\text{RESTRUCTURE} \\ & + \beta_{15}\text{INSTITOWN} + \beta_{16}\text{BIG 4} + \beta_{17}\text{AUDCHANGE} \\ & + \beta_{18}\text{LITIGATION} + \beta_{19}\ln\text{NASFEE} \\ & + \beta_{20}\text{GOINGCONCERN} + \beta_{21}\text{OTHERMODIFIED} + e \quad (3) \end{aligned}$$

While Model 3 was used by prior research, it considers all companies each year in a group and does not enable tracking of how the audit fee of each company changed based on its own history. Model 4 achieves this objective by explaining changes in audit fees between 2003 and 2004 ($\Delta\ln\text{FEE}$) as a function of changes in each company's characteristics over the period. In this model, we measure effects on audit fee changes of specific patterns of internal control problem disclosure across years: IC_BOTH represents companies disclosing problems in both years, IC_Remediated represents companies disclosing problems in 2003 but not in 2004, and IC_New represents companies disclosing a

problem in 2004 but not in 2003. Similarly, we break out auditor changes as follows: *BIG4_BOTH* represents companies audited by the same Big 4 auditor in both years, *BIG_TO_BIG* represents changes from one Big 4 firm to another from 2003 to 2004, *Downgrade* represents changes from a Big 4 to a smaller audit firm in 2004, and *Upgrade* represents changes from a smaller audit firm to a Big 4 auditor in 2004. Other variables in Model 4 control for changes in company size and risk from 2003 to 2004.⁸

$$\begin{aligned}
 \Delta \ln FEE = & \alpha + \beta_1 IC_BOTH + \beta_2 IC_REMEDIATED + \beta_3 IC_NEW \\
 & + \beta_4 \Delta BIG4_BOTH + \beta_5 \Delta BIG_TO_BIG + \beta_6 \Delta DOWNGRADE \\
 & + \beta_7 \Delta UPGRADE + \beta_8 \Delta GOINGCONCERN \\
 & + \beta_9 \Delta OTHERMODIFIED + \beta_{10} \Delta \ln ASSETS \\
 & + \beta_{11} \Delta SQR TSEGMENT + \beta_{12} \Delta ROA + \beta_{12} \Delta INVREC \\
 & + \beta_{14} \Delta INSTITOWN + \beta_{15} \Delta \ln NASFEE + e
 \end{aligned} \tag{4}$$

4. RESULTS

4.1. Descriptive Statistics

Table 2 provides descriptive statistics for fiscal years 2003 (panel A) and 2004 (panel B), with columns for companies not reporting internal control problems, those reporting material weaknesses (MW), and those reporting other deficiencies (OD). The trend toward increased problem reporting is evident: the number of firms in the panel reporting problems under Section 302 increased from 97 to 249 (from 4.4 to 11.3 percent) from 2003 to 2004, while the number reporting MW increased from 35 to 152 (from 1.6 to 6.9 percent). For a similarly constructed panel of accelerated filers, [Hoitash et al. \(2007\)](#) find that 4.8 percent reported specific ICFR problems under Section 302 in 2003, and 14.8 percent reported problems under Section 404 in 2004. Thus, reporting of internal control problems increased across the board in 2004, but more problems were disclosed using Section 404 procedures. Additionally, Section 302 requires management to assess its overall disclosure controls. Among the 346 reports of specific ICFR problems in 2003 and 2004, 202 assert ineffective disclosure controls, while the remaining 144 companies assert effective disclosure controls despite reporting specific problems (not tabulated). This group includes 40 companies asserting effective disclosure controls while disclosing material

Table 2. Descriptive Statistics on Dependent and Independent Variables, by Year.

Variable	Material Weakness Disclosed ($n = 35$)			Other Deficiencies Disclosed ($n = 62$)			No ICFR Problems ($n = 2,199$)		
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD
	InFEE	5.53	5.47	0.99	5.15	5.05	1.13	4.65	4.59
Audit fees	486,365.80	236,951.00	1,010,856.64	336,183.69	155,812.50	536,139.90	218,428.28	98,500.00	797,695.66
lnASSETS	3.88	3.48	1.82	3.55	3.17	2.43	3.35	3.29	2.51
Total assets	553.03	32.35	2,137.99	735.27	23.71	3,324.26	1,167.79	26.94	20,065.46
SQRTSEGMENT	1.85	1.73	0.61	1.75	1.73	0.70	1.50	1.41	0.57
FOREIGN	0.29	0.00	0.46	0.32	0.00	0.47	0.25	0.00	0.43
ROA	-0.26	-0.12	0.54	-0.61	-0.08	2.28	-0.79	-0.01	2.94
LOSS	0.69	1.00	0.47	0.74	1.00	0.44	0.52	1.00	0.50
INVREC	0.36	0.35	0.24	0.30	0.24	0.26	0.31	0.26	0.26
NEW_FIN	0.23	0.00	0.43	0.23	0.00	0.42	0.19	0.00	0.40
MERGER	0.14	0.00	0.36	0.13	0.00	0.34	0.09	0.00	0.28
RESTRUCTURE	0.26	0.00	0.44	0.19	0.00	0.40	0.12	0.00	0.32
INSTITOWN	0.12	0.09	0.15	0.07	0.02	0.10	0.083	0.01	0.15
BIG 4	0.71	1.00	0.46	0.50	0.50	0.50	0.45	0.00	0.50
AUDCHANGE	0.29	0.00	0.46	0.11	0.00	0.32	0.13	0.00	0.34
LITIGATION	0.26	0.00	0.44	0.24	0.00	0.43	0.21	0.00	0.40
lnNASFEE	3.49	3.79	2.27	3.50	3.76	2.07	2.85	3.08	1.96
Non-audit fees	170,640.74	44,350.00	290,753.09	166,968.52	42,760.00	325,430.07	101,615.02	21,800.00	412,670.65
GOINGCONCERN	0.14	0.00	0.36	0.18	0.00	0.39	0.21	0.00	0.41
OTHERMODIFIED	0.31	0.00	0.47	0.31	0.00	0.46	0.35	0.00	0.47

Panel A: 2003

Panel B: 2004

Variable	Material Weakness Disclosed (n = 152)			Other Deficiencies Disclosed (n = 97)			No ICFR Problems (n = 2,047)		
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD
InFEE	5.45	5.42	1.02	5.06	5.03	1.12	4.75	4.68	1.10
Audit fees	415,623.43	225,047.50	712,181.54	374,160.34	153,171.00	896,894.27	255,805.14	107,625.00	1,074,393.54
InASSETS	3.95	3.67	2.02	3.45	3.32	2.18	3.45	3.43	2.49
Total assets	946.39	39.36	6,805.10	360.53	27.76	1,189.36	1,375.18	30.78	24,275.82
SQRTSEGMENT	1.64	1.41	0.58	1.58	1.41	0.56	1.46	1.41	0.54
FOREIGN	0.31	0.00	0.46	0.26	0.00	0.44	0.26	0.00	0.44
ROA	-0.63	-0.06	2.65	-1.14	0.00	3.50	-0.76	0.00	2.97
LOSS	0.63	1.00	0.49	0.51	1.00	0.50	0.48	0.00	0.50
INVREC	0.31	0.29	0.25	0.29	0.27	0.22	0.32	0.27	0.27
NEW_FIN	0.33	0.00	0.47	0.38	0.00	0.49	0.26	0.00	0.44
MERGER	0.16	0.00	0.37	0.22	0.00	0.41	0.12	0.00	0.32
RESTRUCTURE	0.18	0.00	0.38	0.11	0.00	0.32	0.09	0.00	0.29
INSTITOWN	0.15	0.07	0.20	0.11	0.04	0.17	0.10	0.02	0.16
BIG 4	0.46	0.00	0.50	0.38	0.00	0.49	0.39	0.00	0.49
AUDCHANGE	0.22	0.00	0.41	0.23	0.00	0.42	0.12	0.00	0.32
LITIGATION	0.25	0.00	0.43	0.26	0.00	0.44	0.20	0.00	0.40
InNASFEE	3.33	3.72	2.04	3.07	3.07	2.15	2.84	3.01	1.95
Non-audit fees	124,980.01	41,422.00	253,820.63	216,401.64	21,504.00	1,019,413.29	100,184.17	20,200.00	398,432.91
GOINGCONCERN	0.20	0.00	0.40	0.27	0.00	0.45	0.21	0.00	0.41
OTHERMODIFIED	0.29	0.00	0.46	0.22	0.00	0.41	0.26	0.00	0.44

weaknesses in ICFR, illustrating the SEC's guidance that ICFR and disclosure controls need not overlap.⁹

4.2. Model Results

Table 3 presents the results of Models 1–3, which explain the association of audit fees with the relative severity of Section 302 disclosures while controlling for other factors commonly used in audit fee models. Model 1 addresses RQ1 by separating MW and OD disclosure.¹⁰ Results of this model show that among non-accelerated filers, both MW and OD are associated with higher audit fees ($p < 0.001$). Companies disclosing MW have audit fees that are 36 percent higher than companies with effective controls, while audit fees of companies disclosing OD are 19 percent higher.¹¹ Thus, the incremental fee is almost twice as high for a more severe problem, a difference that is statistically significant ($p < 0.04$). Auditors of companies disclosing Section 302 problems are incurring greater cost on the engagement and/or charging more to compensate for the risk of future litigation for these companies.

To further distinguish problem severity, we divide companies with MW and OD according to whether company management also admits that overall disclosure controls are ineffective. MWDC and ONLYMW represent companies disclosing material weaknesses with/without (respectively) an accompanying report of ineffective disclosure controls, and ODDC and ONLYOD represent companies disclosing other deficiencies with/without ineffective disclosure controls. Model 2 results show that companies reporting a MW along with ineffective disclosure controls have audit fees about 40 percent higher than clean companies, while fees are about 21 percent higher for MW disclosure alone (a significant difference, $p < 0.065$). However, an accompanying assertion of ineffective disclosure controls does not significantly affect the additional audit fee incurred by companies reporting OD. The overall evidence from Models 1 and 2 suggests that audit fees of non-accelerated filers in 2003–2004 are adjusted for the level of risk implied by the severity of internal control problems reported under Section 302.

Table 3 models show other factors that affect audit fees among non-accelerated filers in 2003–2004. Specifically, audit fees for these companies increase with company size, complexity (business segments, foreign operations, the relative amount of inventory and receivables), financial risk (lower ROA, loss, high-litigation industry, going concern opinion, modified audit opinion), structural change (mergers and restructurings), audit firm

Table 3. OLS Regression Analysis of Audit Fees with Section 302 Disclosures for Non-accelerated Filers.

Variable	Expected Sign	Coefficient		
		Model 1	Model 2	Model 3
INTERCEPT		2.62***	2.62***	2.62***
YEAR	+	0.11***	0.11***	0.12***
MW	+	0.31***		0.33***
OD	+	0.17***		0.20***
ONLYMW	+		0.19**	
MWDC	+		0.34***	
ONLYOD	+		0.21***	
ODDC	+		0.11*	
MW* YEAR				-0.03
OD* YEAR				-0.05
<i>Control variables</i>				
lnASSETS	+	0.32***	0.32***	0.32***
SQRTSEGMENT	+	0.18***	0.18***	0.18***
FOREIGN	+	0.08***	0.07***	0.08***
ROA	-	-0.03***	-0.03***	-0.03***
LOSS	+	0.15***	0.15***	0.15***
INVREC	+	0.06*	0.06*	0.06*
NEW_FIN	+	0.11***	0.11***	0.11***
MERGER	+	0.04*	0.04*	0.04*
RESTRUCTURE	+	0.17***	0.18***	0.17**
INSTITOWN	+	-0.03	-0.02	-0.03
BIG 4	+	0.42***	0.41***	0.41***
AUDCHANGE	?	0.07***	0.07***	0.07***
LITIGATION	+	0.07**	0.07**	0.07**
lnNASFEE	+	0.09***	0.09***	0.09***
GOINGCONCERN	+	0.21***	0.21***	0.21***
OTHERMODIFIED	+	0.04**	0.04**	0.04**
Adj-R ²		0.76	0.76	0.76

Significance: ***, <one percent; **, <5 percent level; *, <10 percent. See also Eqs. (1-3).

size, non-audit service fees and auditor change.¹² Among accelerated filers in 2003–2004, [Hoitash et al. \(2007\)](#) also find that audit fees are adjusted for the severity of internal control problems disclosed. However, some differences are apparent in other model variables. Specifically, [Hoitash et al. \(2007\)](#) report that audit fees of accelerated filers in this period are not affected by recent mergers, a litigation-prone industry, or auditor change. The difference in association of fee increases with auditor change between

accelerated and non-accelerated filers in 2003–2004 are especially interesting, when compared to prior research showing initial fee discounts. This motivates further analysis of types of auditor changes (presented below).

RQ2 asks how audit pricing changed from 2003 to 2004, when accelerated filers began reporting under Section 404 but non-accelerated filers continued under Section 302. Results of Model 3 show a positive effect of YEAR ($p < 0.001$), implying a 12 percent increase in audit fees from 2003 to 2004 for companies with clean internal controls. The insignificant interactions of Section 302 problem variables with YEAR imply that the fee premium associated with Section 302 risk did not change from year to year. Research on accelerated filers differs in two respects. First, [Hoitash et al. \(2007\)](#) report a much larger increase (over 100 percent) in audit fees for clean accelerated filers from 2003 to 2004. Also, their models show a lower risk premium in 2004 after Section 404 was implemented.

Model 4 adopts a more precise approach to measuring factors associated with changes in audit fees across time, by estimating change in audit fee as a function of specific Section 302 disclosure patterns and changes in control variables. [Table 4](#) shows that companies disclosing problems in 2004 but not 2003 (IC_NEW) paid significantly higher fees in 2004 ($p < 0.01$). This model also shows that while the fees of companies disclosing problems in 2003 are already higher than clean companies in that year, their fees do not further increase if they disclose another internal control problem in 2004 (ICBOTH). Also, fees of companies reporting problems in 2003 do not decrease if they fix the problem and provide a clean report in 2004 (IC_REMEDIATED).

Regarding auditor changes, Model 4 shows that on an average, companies audited by the same Big 4 auditor in both years experience a significant fee increase in 2004 ($p < 0.01$). However, companies that switch from one Big 4 auditor to another do not pay higher fees to the new provider. Companies changing from Big 4 to non-Big 4 firms have decreased fees following the switch ($p < 0.01$), while companies changing from non-Big 4 to Big 4 have increased fees ($p < 0.01$). These results imply that the overall positive coefficient on auditor change in [Table 3](#) masks different effects of switching to larger versus smaller audit firms. Model 4 reveals that increases in audit fees from 2003 to 2004 are also associated with increasing size ($p < 0.01$), decreasing ROA ($p < 0.01$), increasing business segments ($p < 0.05$), non-audit fees ($p < 0.01$) and modified audit opinions ($p < 0.1$). These results show that audit fees in the study period are responsive to changes in client characteristics associated with audit costs and/or risk, beyond Section 302 disclosures.

Table 4. OLS Regression Analysis Change in Audit Fees with Change in Section 302 Disclosures and Change in Auditor for Non-accelerated Filers.

Variable	Model 4		
	Expected sign	Coefficient	t-Statistic
INTERCEPT		0.02	0.59
IC_NEW	+	0.08	4.09***
IC_REMEDIATED	-	-0.02	-0.46
IC_BOTH	+	-0.00	-0.13
BIG4_BOTH	?	0.05	4.23***
BIG_TO_BIG	?	-0.00	-0.02
DOWNGRADE	-	-0.19	-6.93***
UPGRADE	+	0.16	1.58**
<i>Control variables</i>			
GOINGCONCERN	+	0.01	0.91
OTHERMODIFIED	+	0.02	1.36*
$\Delta \ln \text{ASSETS}$	+	0.20	9.19***
$\Delta \text{SQRTSEGMENT}$	+	0.21	1.87**
ΔROA	-	-0.11	-4.04***
ΔINVREC	+	0.02	0.01
$\Delta \text{INSTITOWN}$	+	0.14	0.70
$\Delta \ln \text{NASFEE}$	+	0.04	5.41***
Adj- R^2		0.11	
F-value		4.60***	

***, significant at 1 percent level; **, significant at 5 percent level; *, significant at 10 percent level. See also Eq. (4).

5. CONCLUSIONS AND LIMITATIONS

In this paper, we investigate factors associated with audit pricing among non-accelerated filers during 2003 and 2004. Because related research either considers only accelerated filers, or uses combined samples that do not isolate non-accelerated filers, this issue has not been directly addressed. Our methodology allows us to compare results for non-accelerated filers with those observed by [Hoitash et al. \(2007\)](#) among accelerated filers.

Model results show that non-accelerated filers disclosing internal control problems in 2003–2004 paid higher audit fees, and fees were further risk-adjusted in accordance with problem severity. Fees for companies disclosing material weaknesses are greater than for companies disclosing

other deficiencies, and highest for companies with both ineffective disclosure controls and material weaknesses. This implies that Section 302 disclosures are meaningful indicators of internal control risk. Audit firms perform additional audit tests to offset internal control risk, employ auditors with higher expertise on those engagements, and/or apply a fee premium based on litigation exposure. Between 2003 and 2004, our model of the level of audit fees implies an overall increase for low-risk companies, although this increase is much lower than that of low-risk accelerated filers during the same period (Hoitash et al., 2007).¹³ While we observe rising fees among non-accelerated filers in 2004, we find no difference across years in the overall risk adjustment associated with Section 302 disclosures. In contrast, Hoitash et al. (2007) find a reduction in risk adjustment between problem and no-problem accelerated filers as Section 404 was implemented. Using the non-accelerated filers in this study as a baseline provides evidence that Hoitash et al. (2007) observed reduction in risk adjustment of audit fees for accelerated filers is due to the internal control testing requirement in Auditing Standard No. 2 (PCAOB, 2004), and not to other factors (e.g., general economic conditions).¹⁴

Our model of audit fee changes provides additional insight, with three key results. First, it shows that audit fees increased for companies increasing in size, complexity and risk. Second, controlling for those factors, the change model shows that audit fees increase for companies with newly reported problems in 2004. While audit fees are already higher for companies reporting problems in 2003, those companies are not charged incrementally more for a second year of Section 302 problem reporting. In contrast, Hoitash et al. (2007) report that among accelerated filers, companies reporting problems in consecutive years pay higher fees in 2004, relative to companies reporting problems for the first time in 2004. Thus, it is likely that the requirement for auditor testing under Section 404 drives the incremental fee in the second year of problem reporting under that regime. Further, this study shows that remediating an internal control problem does not yield immediate relief in the audit fee, and Hoitash et al. (2007) find similar results for accelerated filers under Section 404. These results suggest that auditors in both regimes are reluctant to significantly alter the audit approach or lower the pricing of the audit for companies with internal control problems in the preceding period. While audit fees of remediating companies may be reduced after more time has passed and the auditor has gained sufficient confidence in internal control quality improvement, this is a topic for further research.

The third set of key results from the change model relate to auditor affiliation. Prior research on accelerated filers during 2003–2004 (Hoitash et al., 2007) and on the overall market studies prior to 2000 (e.g., Ettredge & Greenberg, 1990) show initial audit fee discounts. However, Griffin and Lont (forthcoming) find initial audit fee discounting only among Big 4 firms from 2000 to 2003. This study finds that in 2004, “upgrades” in auditor size from a smaller firm to a Big 4 firm are associated with fee increases, while size “downgrades” from Big 4 to smaller firms are associated with fee decreases. Within the Big 4 size class, companies remaining with the same firm experience increased fees, while fees do not change on average for those switching from one Big 4 firm to another. In contrast, fee changes among clients of smaller audit firms are insignificant. The precise reason for the observed differences in pricing by audit firms of different sizes is unclear, but we highlight two possible explanations that could be investigated by further research. First, the larger audit firms may have been working with non-accelerated filers toward eventual application of Section 404 by insisting that more audit work be done in the controls area. This explanation is consistent with anecdotal evidence that large audit firms were implementing common audit approaches across their entire portfolio of clients as Section 404 activity commenced. This implies a “spillover effects” from Section 404 activity into audits of smaller public companies. Second, lingering effects of the demise of Arthur Andersen may have contributed to decreased competition among large firms during the study period, enabling greater market power. In the early 2000s, audit firms experienced an increase in their risk exposure, associated with the spate of large frauds and increased regulatory attention to the profession. It is likely that the large firms, given their greater market power, were more able than smaller firms to cover these costs by increasing fees to their existing clients.

This study has several limitations. First, we use Section 302 disclosures that are made by company management, subject to normal auditor review but not auditor testing. It is possible that managements’ disclosures and assessment of the effectiveness of their internal controls is not comprehensive and thus our sample might contain companies with undisclosed ICFR problems. However, this should bias against finding an association of audit fees with ICFR problems. Also, while we compare our results to other studies, differences in procedures for company management and auditors between Sections 302 and 404 may mean that problems identified under these regimes are different. Moreover, as is common in the audit fee literature, our data do not allow us to distinguish between audit fee adjustments that are due to increases in the audit effort to audit fee

adjustments due to fee premia. Future studies using engagement hours could disentangle these effects, to improve understanding of auditors' reactions to the existence of internal control problems.

NOTES

1. Accelerated filers were defined by the SEC (Regulation 12b-2) as companies that have at least \$75 million of common equity float at the end of the second quarter of the fiscal year, have previously filed at least one 10K, are subject to the Exchange Act for at least 12 months, and do not qualifying as a small business under SEC rules.

2. Recently, the SEC extended the Section 404 compliance date for non-accelerated filers to fiscal years ending on or after December 15, 2007 for management reporting and December 15, 2008 for auditor attestations on Section 404 reports. Therefore, the only internal controls disclosures that non-accelerated filers currently make on a regular basis are derived from Section 302. On June 28, 2007, the U.S. House of Representatives voted to extend both deadlines by a further year.

3. When presenting our results in Section 4, we compare findings to prior research using accelerated filers, revealing a number of differences.

4. In the final rules for 302 implementation ("Certification of Disclosure in Companies' Quarterly and Annual Reports," <http://www.sec.gov/rules/final/33-8238.htm>), the SEC defines disclosure controls and procedures as "controls and other procedures of an issuer that are designed to ensure that information required to be disclosed by the issuer in the reports filed or submitted by it under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Commission's rules and forms." The SEC's rules emphasize that while disclosure controls and procedures and ICFR overlap substantially, on some issues they are not identical: "there are both some elements of disclosure controls and procedures that are not subsumed by internal control over financial reporting and some elements of internal control that are not subsumed by the definition of disclosure controls and procedures." For instance, disclosure controls and procedures include some non-financial items outside of the financial statements. Therefore, it is possible (although probably infrequent) that a company concludes that its disclosure controls are ineffective but cite no weaknesses in ICFR, or concludes that disclosure controls are effective but that material weaknesses in ICFR exist.

5. Of the 21,498 firm-years of observations from *Audit Analytics* having available Section 302 evaluations of internal controls, we remove 7,440 observations of accelerated filers, 1,650 observations with missing audit fee data and 5,774 observations not available on Compustat or missing other required data, leaving 6,634 firm years. We restrict our sample to a complete panel, so that changes across years are not due to differing sample composition, by removing 1,366 observations having missing data in either fiscal 2003 or 2004. Finally, we remove 676 foreign filers, leaving 4,592 firm-year observations for analysis.

6. We also match 219 companies with IC problems to "clean" companies on industry, size and year and obtain qualitatively similar results. Because we include

industry controls in the tabled models, and due to the limitations commonly associated with matched sample designs (the difficulty of designing appropriate matching procedures and loss of power due to reduced sample size), we do not tabulate the matched sample results.

7. Because each company appears twice, the [Table 3](#) models control for correlation of error terms across observations by “clustering” on company. In both years, we constructed the data so that companies reporting material weaknesses and other deficiencies are mutually exclusive. If a company reports both, it is classified as reporting MW.

8. Changes in financial variables are winsorized at ± 10 percent to reduce the influence of outliers. We also include two-digit SIC industry variables in all models to control for industry differences, but do not table those variables.

9. [Table 2](#) also shows that non-accelerated filers reporting ICFR problems are generally larger than those that did not, and also have higher proportions of net losses and auditor changes. This implies that it is important to control for these variables while estimating the association of audit fees with Section 302 reporting. In all models, the variance inflation factors of tabled variables are below the level suggestive of multi-collinearity problems (Neter, Kutner, Nachtsheim, & Wasserman, 1996).

10. A similar model measuring disclosure of any type of Section 302 problem shows a 28 percent increase in audit fees associated with problem disclosure (not tabled). This is consistent with findings by [Raghunandan and Rama \(2006\)](#) and [Hoitash et al. \(2007\)](#). However, this aggregate measure of a control problem is not sufficiently detailed to show fee adjustments that are due to varying levels of problems severity.

11. Because the dependent variable is the natural log of audit fees, the size of an effect shown in the model is computed by taking the exponent of the variable's coefficient.

12. To provide further insight into the association of auditor changes with audit fees (RQ2), the Appendix shows detailed descriptive data on audit fees by the type of auditor change and the state of the internal controls in 2004. This table shows that audit fees paid by companies that report IC problems are higher than fees paid by companies who had a comparable auditor switch but did not report an IC problem.

13. A comparison of accelerated (to non-accelerated) filers reveals that audit fees increased by 72 percent (13.5 percent) from 2003 to 2004, 12 percent (14.9 percent) from 2004 to 2005, and 5.7 percent (9.5 percent) from 2005 to 2006. Although fees of both groups are continually increasing, the rate of increase for non-accelerated filers is higher than the rate for accelerated filers.

14. The PCAOB has recently proposed a new standard for conduct of integrated audits, which is designed to enhance risk adjustment in these engagements ([PCAOB, 2007](#)).

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REFERENCES

- Dunn, C. (2006). When SOX 302, 404 control attestations contradict. *Compliance Week* (May 9).
- Earley, C., Hoffman, V., & Joe, J. (2007). *The effect of management's classification of control deficiencies on auditors' judgments under PCAOB Auditing Standard Number 2*. Working Paper. Bentley College.
- Ettredge, M., & Greenberg, R. (1990). Determinants of fee cutting on initial audit engagements. *Journal of Accounting Research*, 28(1), 198–210.
- Feldman, E. A. (2006). A basic quantification of the competitive implications of the demise of Arthur Andersen. *Review of Industrial Organization*, 29, 193–212.
- Felix, W., Gramling, A., & Maletta, M. (2001). The contribution of internal audit as a determinant of external audit fees and factors influencing this contribution. *Journal of Accounting Research*, 39(3), 513–535.
- Griffin, P. A., & Lont, D. H. (2007). An analysis of audit fees following the passage of Sarbanes-Oxley. *Asia-Pacific Journal of Accounting and Economics*, 14(2), 161–192 .
- Grothe, M. (2007). *The Materially Weak* (February 27). Glass, Lewis & Co.
- Hackenbrack, K., & Knechel, W. R. (1997). Resource allocation decisions in audit engagements. *Contemporary Accounting Research*, 14, 481–499.
- Hay, D., Knechel, R., & Wong, N. (2006). Audit fees: A meta-analysis of the effect of supply and demand attributes. *Contemporary Accounting Research*, 23(1), 141–191.
- Hogan, C. H., & Wilkins, M. S. (2007). Evidence on the Audit Risk Model: Do auditors increase audit effort in the presence of internal control deficiencies? *Contemporary Accounting Research* (forthcoming).
- Hoitash, R., Hoitash, U., & Bedard, J. (2007). Internal controls quality and audit pricing under the Sarbanes Oxley Act. *Auditing: A Journal of Practice & Theory* (forthcoming).
- Ip, G., Scannell, K., & Solomon, D. (2007). Panel urges relaxing rules for oversight. *Wall Street Journal* (November 30), p. C1.
- Johnstone, K., & Bedard, J. (2007). *Audit planning and pricing during the period surrounding passage of the Sarbanes-Oxley Act*. Working Paper. University of Wisconsin-Madison.
- Mock, T. J., & Wright, A. (1993). An exploratory study of auditors' evidential planning judgments. *Auditing: A Journal of Practice and Theory*, 12, 39–61.
- Neter, J., Kutner, M., Nachtsheim, C., & Wasserman, W. (1996). *Applied linear statistical models* (4th ed.). New York: McGraw-Hill.
- O'Keefe, T. B., Simunic, D. A., & Stein, M. T. (1994). The production of audit services: Evidence from a major public accounting firm. *Journal of Accounting Research*, 32, 241–261.
- Public Company Accounting Oversight Board. (2004). *Auditing standard No. 2: An audit of internal control over financial reporting performed in conjunction with an audit of financial statements* (March 9). Washington, DC: PCAOB.
- Public Company Accounting Oversight Board. (2007). *Proposed auditing standard: An audit of internal control over financial reporting that is integrated with an audit of financial statement* (March 9). Washington, DC: PCAOB.
- Raghunandan, K., & Rama, D. (2006). SOX Section 404 material weakness disclosures and audit fees. *Auditing: A Journal of Practice & Theory*, 25(May), 99–114.
- Securities and Exchange Commission. (2003). *Final rule: Management's reports on internal control over financial reporting and certification of disclosure in Exchange Act Periodic*

- Reports*. Release Nos. 33-8238; 34-47986; IC-26068; File Nos. S7-40-02; S7-06-03. Washington, DC.
- Securities and Exchange Commission, by Chairman Christopher Cox. (2006). *Testimony concerning the impact of the Sarbanes-Oxley Act* (September 19). Washington, DC.
- Stein, M. T., Simunic, D. A., & O'Keefe, T. B. (1994). Industry differences in the production of audit services. *Auditing: A Journal of Practice & Theory*, 13(128), p. 142.

**APPENDIX. DESCRIPTIVE STATISTICS ON 2004 AUDIT FEES
BY AUDITOR TYPE AND AUDITOR SWITCHES**

	Reporting ICFR Problem in 2004				Not Reporting ICFR Problem in 2004			
	<i>N</i>	Mean	Median	SD	<i>N</i>	Mean	Median	SD
Audited by the same Big 4 auditor	99	\$748,366	\$361,876	\$1,153,633	787	\$510,628	\$233,025	\$1,697,808
Audited by the same non-Big 4 auditor	97	\$150,287	\$110,000	\$130,368	922	\$93,194	\$70,000	\$94,937
Switched auditors in 2004, Big 4 to Big 4	3	\$255,756	\$202,462	\$223,954	19	\$384,963	\$270,383	\$249,904
Switched auditors in 2004, non-Big 4 to non-Big 4	19	\$131,174	\$83,000	\$108,009	193	\$64,643	\$48,274	\$53,523
Switched auditors in 2004, Big 4 to non-Big 4	26	\$216,502	\$167,500	\$180,208	124	\$127,016	\$100,361	\$96,484
Switched auditors in 2004, non-Big 4 to Big 4	5	\$382,704	\$211,646	\$299,608	2	\$151,375	\$151,375	\$433,310

IMPACT OF ENVIRONMENTAL REGULATION ON FINANCIAL REPORTING OF POLLUTION ACTIVITY: A COMPARATIVE STUDY OF U.S. AND CANADIAN FIRMS

Paul Ashcroft and L. Murphy Smith

ABSTRACT

Business firms are under scrutiny to provide accurate environmental reporting, including capital costs and operating expenses concerning pollution. Environmental reporting is incorporated into annual financial reports as well as specialized environmental reports. The extent or value of such information is an appropriate subject for accounting research. This study investigates environmental reporting in audited financial statements of U.S. and Canadian firms prior to SOP 96-1, to determine whether environmental regulation starting with SOP 96-1 was needed. One would expect that environmental information would be useful to shareholders and others in assessing the environmental risk exposure of a firm. The key question addressed by this study is whether a firm's reported environmental information (environmental capital costs and environmental operating costs) actually reflects the firm's pollution. The findings

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suggest that many firms were failing either to record or to fund necessary environmental expenditures, and therefore, may have significant amounts of unrecorded future environmental obligations. As a result, the accounting guidance provided by FASB, starting with SOP 96-1, was appropriate for enhancing financial reporting regarding environmental matters.

INTRODUCTION

Concern about environmental issues has been a major business and social issue for several decades. Steep increases in crude oil prices in 2006 focused international attention on the energy industry (*cf.*, CNN, 2006; Horsley, 2006). The challenge facing energy companies in the oil and gas industry is to economically produce oil and gas products, while at the same time safeguarding the environment. Government agencies, private consumer groups, and stakeholders in the energy scrutinize the environmental performance of oil and gas industry firms. Both voluntary and required disclosures have been the subject of academic research (e.g., Aerts, Cormier, & Magnan, 2006; Santhosh & Tonks, 2006; Parsa & Uju, 2006; Parker, 2005; Kuasirikun, 2005; Thomson & Bebbington, 2005; Alciatore, Dee, & Easton, 2004; Rezaee, Smith, & Smith, 2001).

Environmental disclosure in financial reporting has become “a widespread public policy instrument, employed to protect the public and to improve the performance of business” (North American Commission for Environmental Cooperation, 2003, p. 2). However, until 1996 there was nothing in Generally Accepted Accounting Principles (GAAP) that specifically required the reporting or disclosure of either environmental capital costs or environmental operating costs. In 1996, the American Institute of Certified Public Accountants (American Institute of Certified Public Accountants & Accounting Standards Executive Committee, 1996) issued *Statement of Position 96-1: Environmental Remediation Liabilities* (SOP 96-1). The relative newness of environmental GAAP is true for both the United States and Canada.

Environmental reporting is incorporated into annual financial reports as well as specialized environmental reports. There has been little research to date regarding the extent or value of such information. This research study investigates environmental reporting in audited financial statements of U.S. and Canadian firms, not in the current time period, but in the 2-year time

period immediately prior to SOP 96-1, that is, 1994–95. One would expect that environmental information would be useful to shareholders and others in assessing the environmental risk exposure of a firm. The key question addressed by this study is whether a firm's reported environmental information (environmental capital costs and environmental operating costs) actually reflects the firm's pollution activities (number of pollution-releasing facilities and level of pollution released). If reporting does not reflect pollution activities, then this would be of concern to investors as well as to government regulatory agencies concerned with financial reporting. This would imply a need for the subsequent accounting guidance regarding environmental reporting, starting with SOP 96-1.

Research shows that investment value accrues to shareholders of socially responsible corporations. "Companies that adhere to strict environmental standards created greater market value" (Harrington, 2003, p. 52). The current study increases our understanding of how well firms resolve major uncertainties regarding measuring and recording environmental costs. In addition, this study responds to increased interest in environmental accounting and a desire for additional research regarding environmental costs and obligations (Clarkson, Li, & Richardson, 2004; Waddock & Graves, 1997; Johnson, 1993). Governmental agencies and accounting standard-setting bodies need to know the value of additional disclosure requirements. Both liberals and conservatives agree that disclosure is an appealing policy tool, which typically increases market efficiency by eliminating informational asymmetries (North American Commission for Environmental Cooperation, 2003). However, for disclosure to be of value, it must reflect actual events described by the disclosure, in this case, environmental costs.

MOTIVATION

Studying the amount of environmental capital costs and environmental operating costs reported by firms in the United States and Canada is important for several reasons. The items motivating this study are as follows:

1. Firms face great challenges and uncertainties in reporting environmental costs.
2. Known and potential environmental costs are very significant.

3. Suppliers, customers, investors, and other stakeholders currently desire detailed information about firms' environmental costs.

Challenges in Reporting Environmental Costs

Environmental costs present a tremendous challenge from an accounting and reporting perspective. More than a decade ago, international accounting firms recognized the importance of environmental costs on financial reporting:

Of the many risks and uncertainties that threaten to undermine the usefulness of financial reporting in the 1990s, few pose as formidable a challenge as environmental costs. (Price Waterhouse, 1992, p. i)

The reporting of environmental cost information is a major issue in other countries as well as in the United States. The Canadian Institute of Chartered Accountants (CICA) explains the influences on firms to report environmental information by stating (CICA, 1994, p. 3):

Increasingly, organizations of every type and size, public and private, profit and non-profit, are being asked for information on how they deal with the environment. Many groups – from suppliers, customers, and regulators to the public at large – want to know what impact organizations are having on the environment and how they are dealing with those impacts. They want reassurance that organizations are operating responsibly towards the environment and, if not, what they are doing to improve their performance in the future.

The United States and Canada have essentially the same goals in financial reporting regarding environmental matters. The CICA recently published a Discussion Brief, MD&A Disclosure about the Financial Impact of Climate Change and Other Environmental Issues (Canadian Performance Reporting Board, 2005). This document has been referenced in other reports, including the Conference Board of Canada's Carbon Disclosure Project Report 2006 Canada 280 (Conference Board of Canada, 2006).

Environmental reporting is incorporated into annual financial reports as well as specialized environmental reports. Today about 44 percent of the Fortune global top 250 firms in the non-financial sector provide specialized environmental reports. Business firms are under mounting pressure to provide accurate environmental reporting, including capital costs and operating expenses concerning pollution. An increasing number of firms have their environmental reports verified by independent third parties, often mixing the technical knowledge of environmental experts and financial

auditors. Some experts contend that, in general, environmental responsibility makes a substantial positive contribution to shareholder value (cf., Harrington, 2003; Miller, 2000; KPMG, 2000).

SOP 96-1 provides authoritative guidance on specific accounting issues that are present in the recognition, measurement, display, and disclosure of environmental liabilities, but is limited to environmental remediation obligations induced by a threat of litigation, assertion of a claim, or an assessment. In SOP 96-1, benchmarks are provided that determine when an environmental remediation liability should be recognized and accrued pursuant to Statement of Financial Accounting Standards No. 5, Accounting for Contingencies – SFAS 5 (FASB, 1975).

The environmental remediation processes typically require time to ascertain potentially responsible parties, study and evaluate the site, scope the remediation task, and negotiate environmental management with the regulatory agencies. While an entity often can determine that it is probable that it must undertake environmental remediation, often the total cost of the obligation cannot be reasonably estimated or requires additional time to make such a determination. In accordance with SFAS 5, if the probable loss contingency is material but cannot be reasonably estimated, SOP 96-1 allows the entity to describe the remediation obligation and explain that a reasonable estimate cannot be made at the time of reporting (Evers, Smith, Brown, & Drake, 2006).

Environmental Costs are Potentially Very Significant

KPMG (2000) assessed environmental reporting among the Fortune top 250 multinational firms and the top 100 firms in 11 countries. Their findings revealed that the number of firms with an environmental or health, safety, and environmental (HSE) report increased to 24 percent in 1999, compared to 19 percent in 1996 and 13 percent in 1993.

Price Waterhouse (1992) found that during the 1980s, capital expenditures by U.S. firms for environmental matters increased tenfold, from 2 to 20 percent of all capital spending. Also, still unfunded and perhaps mostly unrecorded are the unpaid costs firms have for past violations of laws, including an estimated \$500 billion for the Superfund Act alone. Overall, the current total known environmental liability has been estimated at between 2 and 5 percent of the U.S. gross domestic product.

Accounting for Environmental Liabilities

From an accounting standpoint, environmental liabilities typically fit into the broad category of contingent liabilities. A contingent liability is a present obligation that, undeniably or arguably, may have a future material effect on the financial condition or operational resources of the firm. The risks associated with a contingent liability may be quantifiable or non-quantifiable, and may include such off-balance sheet arrangements or activities as unpaid employment benefits, litigation, warranty obligations, or contractual or court-ordered commitments. An environmental contingent liability is one that arises from an environmental risk or event. In 2005, the FASB declined to reconsider the definition of a contingent liability in the specific context of environmental liabilities, thus environmental contingent liability has not yet been precisely defined by FASB (FASB, 2005a, 2005b). The U.S. Environmental Protection Agency (EPA, 1996b), however, does define an environmental liability as follows: “A legal obligation to make a future expenditure due to the past or ongoing manufacture, use, release, or threatened release of a particular substance, or other activities that adversely affect the environment” (EPA, 1996a).

Guidance for accounting for contingent liabilities, including environmental ones, is principally derived from SFAS 5. SFAS 5 requires that a loss contingency must be accrued by a charge to income if, at or before issuing the financial statements, (a) it is probable that an asset has been impaired or liability incurred, and (b) the amount of the loss may be reasonably estimated. Nature of the probable loss must be stated in the financial statements. When a loss is not probable but there is a reasonable possibility that a loss occurred, disclosure of the nature of the liability in a footnote may be necessary to avoid misleading users of the financial statements. SFAS 5 requires that a disclosure either state that an estimate of the loss cannot be made or state an estimate of the loss or range of loss. When a loss is a remote possibility, then it need not be disclosed (FASB, 1975). However, SFAS 5 requires disclosure of guarantees, irrespective of likelihood of loss. Furthermore, if an entity is contingently [or directly] liable for an obligation that is material to the company arising out of an off-balance sheet arrangement, then the arrangement must be disclosed, regardless of the contingency probability (Sarbanes-Oxley, 2007).

In addition to SFAS 5, other accounting guidance provided by FASB include the following: FASB Interpretation No. 14, Reasonable Estimation of the Amount of a Loss (FASB, 1976); SFAS 143, Accounting for Asset Retirement Obligations (FASB, 2001a); SFAS 144, Accounting for the

Impairment or Disposal of Long-Lived Assets (FASB, 2001b); and FASB Interpretation No. 47, Accounting for Conditional Asset Retirement Obligations (FASB, 2005a, 2005b).

FASB Interpretation No. 14 requires that a company that has only enough information to develop a range of estimates to disclose that range. As a result, companies must accrue either the best estimate in the range or, if a best estimate cannot be ascertained, the minimum amount (FASB, 1976). SFAS 143 requires that the fair value of a liability for an asset retirement obligation be recognized in the period in which the obligation is incurred if a reasonable estimate of fair value can be ascertained (FASB, 2001a). SFAS 144 concerns recognition of an impairment loss. An environmental contingent liability could lead to an impairment loss (FASB, 2001b). FASB Interpretation No. 47 clarifies paragraph 3 of FASB Statement No. 143. According to this interpretation, future environmental costs associated with property, plant, or equipment must be recognized even if a future environmental claim is not probable (FASB, 2005a, 2005b).

In addition to FASB, the U.S. Securities and Exchange Commission (SEC) offers guidance as to when disclosure of a contingent liability is required, using the operative term material rather than the probable and reasonably estimated approach of SFAS 5. The goal of SEC disclosure regulations is to protect and ensure transparency for investors and other users of the financial reports. The SEC requires that publicly held companies evaluate environmental contingent liabilities and, if material, disclose such liabilities in any registrant's disclosure documents.

The disclosure of environmental contingent liabilities occurs as a component of financial reporting. Following passage of the Sarbanes-Oxley Act of 2002 (SOX), the degree of scrutiny has heightened concerning disclosure of contingent risks, primarily because of SOX's mandate that CEOs and CFOs certify disclosures in SEC filings. Disclosures of contingent liabilities begin within the financial statements: balance sheet, income statement, statement of stockholders' equity, and statement of cash flows. A company's annual report includes the financial statements and relevant notes, the audit report, management's analysis, and other communications. A primary venue for disclosures of environmental contingent liabilities is in the management's discussion and analysis (MD&A) section of the annual report and on Form 10-K. Disclosures are made public when companies file Form 10-K (annual report) and Form 10-Q (quarterly reports) with the SEC (Evers et al., 2006).

The United States Government Accountability Office (GAO) has issued a report to Congress on environmental disclosure (GAO, 2004). In the report,

the GAO notes that stakeholders disagree on how well the SEC has defined the requirements for environmental disclosures. While some stakeholders believe that requirements need to be flexible to allow for varying circumstances, other stakeholders feel that companies may not be disclosing some of their potential liabilities because the accounting guidance is not specific enough. The later group emphasizes the lack of specific guidance pertaining to (1) materiality of potential liabilities, (2) uncertainty of occurrence, and (3) future potential environmental liabilities (GAO, 2004).

Stakeholders Desire Environmental Cost Information

Since firms are potentially facing the very large environmental costs discussed above, investors, creditors, and other users of annual reports desire to have detailed information about a particular firm's environmental costs. Considerable time and effort is required to provide environmental cost information in their annual reports. The following statement describes how firms would benefit from reporting their environmental capital costs and environmental operating costs:

Organizations have expanding needs for environmental information to manage performance and profitability. They must be able to satisfy the markets that their environmental practices and performance are neither harmful to their financial profitability nor to the environment. Moreover, to meet accountability expectations and compete effectively, information must be communicated to regulators, customers, capital markets and other interested parties. Reporting information in a useful format and in a timely manner suggests to the recipients that the organization has developed good management practices regarding environmental issues. (CICA, 1994, p. 16)

LITERATURE REVIEW

Prior accounting research has examined issues that relate to the current study. There is a large body of literature concerning accounting and environmental reporting. This section briefly reviews a few prior research studies relevant to the current study but it is only a small sample of relevant studies in this area.

Using an institutional theory framework, Aerts et al. (2006) assert that the cognitive uncertainty surrounding the means and ends of corporate environmental reporting (CER) implies that its appropriateness is likely to

be derived through social comparison processes. Their study examines intra-industry imitation in CER over a 6-year period.

Thomson and Bebbington (2005) examine how social and environmental reporting (SER) may be evaluated from a pedagogic perspective. The study builds on the earlier work of Paulo Freire (1996). Thomson and Bebbington build on Freire's conception of what constitutes an emancipatory pedagogy to evaluate the processes by which organizations create social, environmental, and sustainable development reports and the reports themselves.

Alciatore et al. (2004) present a detailed description of changes in environmental disclosures by petroleum companies from 1989 to 1998. They report the dollar amounts disclosed, describe the availability of those disclosures in annual reports and Forms 10-K, and document the change in environmental reporting patterns and amounts over the period.

Clarkson et al. (2004) examine capital expenditure investments regarding pollution abatements in the pulp and paper industry. They separate environmental reporters into two groups: low-polluting firms that over-comply with environmental regulations and high-polluting firms that meet the minimal requirements. They estimate average unbooked liabilities of approximately \$560 million for high-polluting firms, representing 16.6 percent of market capitalization.

Regarding earlier studies that examine detailed accounting disclosure of environmental costs, Barth, McNichols, and Wilson (1995) investigated U.S. firms that have one or more Superfund sites requiring cleanup. They found that 20.7 percent of their firm-year observations disclosed an estimate of or gave a qualitative statement about total remediation costs. The current study improves on Barth et al. (1995) by examining a sample of firms with a broader range of environmental risk compared to a sample of only firms with Superfund sites (Superfund sites are the most hazardous and risky sites in the United States). This study also extends beyond Barth et al. (1995) by examining both U.S. and Canadian firms, and by analyzing factors that affect firms' reported environmental costs.

Niskala and Pretes (1995) evaluated the content of environmental disclosures by Finnish corporations in terms of the information provided in the three categories of qualitative, quantitative, and financial. In comparing disclosures made in 1992 with 1987, they found a significant increase in the percentage of firms reporting capital expenditure information, and a significant increase in the amount of qualitative information provided. No significant increase in the amount of quantitative disclosure was observed.

Barth and McNichols (1994) examined factors that may explain the estimated costs involved in remediating Superfund sites. For each one of the 640 sites in their sample, they obtained the estimated cost of cleaning up the site from the EPA Records of Decision. They performed separate regressions using estimated capital costs, estimated operating and monitoring costs, and estimated total present worth of costs as the dependent variables. The presence of groundwater pollution had a significant positive relation to the operating and monitoring cost estimate, and to the present worth cost estimate. Total yards of contaminated soil were positively related to the present worth cost estimate. Also, a group variable capturing the 16 different types of Superfund sites as listed by the EPA and a group variable capturing the type of remediation technology suggested by the EPA to be used at the site were both significantly related to each type of cost estimate. The current study differs from Barth and McNichols (1994) primarily from the use of actual costs reported by the firms themselves, rather than using estimated costs.

Barth et al. (1995) and Barth and McNichols (1994) sampled only U.S. firms, while Niskala and Pretes (1995) evaluated only Finnish firms. This study improves on each of these prior studies by examining firms in the United States and Canada rather than sampling firms in only one country.

RESEARCH METHODOLOGY

The following portion of this paper discusses the research method employed. Included are the criteria used to select the sample firms, and a description of how environmental cost information was obtained.

Sample

The main purpose of this research is to examine how corporate firms have responded to the need for environmental cost information by firm stakeholders. In order to choose firms that are likely to have some amount of environmental costs that could be reported, the first criterion for each nation's sample is that the quantity of the firm's pollution releases must be publicly available. U.S. sample firms must be included in the Toxic Release Inventory (TRI) database produced by the U.S. EPA. Canadian sample firms must be included in the National Pollutant Release Inventory (NPRI) databases produced by Environment Canada (1994, 1995). This simply

means that each corporate firm was required to and did report the amount of pollution releases of specific toxic items.

The second sample criterion is that the firm's shares are publicly traded on a stock exchange in their home country. Also, the firm must have a two-digit Standard Industrial Classification (SIC) Code classification between 20 and 39 (since U.S. firms within only these classifications must report pollution releases), and an annual report year-end of December 31. The final criterion for sample selection is that the firm specified in their annual report the dollar amount of their capital costs and operating costs for environmental purposes. Requiring that all firms have a December 31 year-end is needed to most effectively evaluate the relationship between pollution releases and environmental costs, as both Canadian firms and U.S. firms must report pollution releases on a January 1 to December 31 basis. Firms that do not report their environmental costs are eliminated to reduce potential bias in the results that would occur if these costs were assumed to be zero. **Table 1** provides details of the number of firms contained in the pollution databases, the number of publicly traded firms, and the number of firms in the final population available for sample selection.

As indicated in panel A of **Table 1**, 183 Canadian firms and 2,958 U.S. firms were available for inclusion in the study. For each country, a random number was assigned to each of these available firms. Assigning random numbers to each country's population of firms separately was necessary to provide each firm in each country's population of corporations an equal chance of being selected for the sample.

For each country's sample, the companies were ranked from the highest to the lowest random number. Canadian firms were selected first, beginning with the highest ranked firm and continuing until 50 firms were chosen. The U.S. firms were then chosen in order based on the highest random number assigned, and also matched to the Canadian firms by the first two digits of the SIC Code. Matching by SIC Code provides that the initial U.S. sample will have the same number of firms in each industry as the Canadian sample does. This makes the study as objective as possible and reduces potential bias resulting from industry effects. Firms are examined for the years 1994 and 1995. These years were selected because they immediately precede release of SOP 96-1.

Panel B of **Table 1** presents the number of firms for each country that reported the dollar amount of environmental capital costs or environmental operating costs for in their annual reports in 1994 and 1995. A firm did not have to report both types of costs to be included in the final sample; in effect there is a sample of firms for each type of cost.

Table 1. Firm Population and Sample.

Panel A: Firm population and initial sample		
Canada		
Number of entities in National Pollutant Release Inventory (NPRI)		3,115
Less: observations not identified as business firms ^a		2,472
Number of business firms in NPRI		643
Less: firms not publicly traded		272
Less: firms with a year-end other than December 31		107
Less: firms with an SIC Code other than 20–39		81
Firms available for sample selection ^b		183
Less: firms not chosen by the random sampling process		133
Number of firms included in the initial sample		50
United States		
Number of firms in Toxics Release Inventory database ^c		75,533
Less: firms not identified as publicly traded		70,577
All publicly traded firms		4,956
Less: firms with a non-December 31 year-end		1,998
Firms available for sample selection ^d		2,958
Less: firms not chosen by the random sampling process		2,908
Number of firms included in the initial sample		50
Panel B: Sampled firms reporting environmental costs		
	Number of Firms	
	Canada	U.S.
Environmental capital costs	43	34
Environmental operating costs	22	35

^aThe NPRI database does not identify which entities are business firms. Separate files were obtained from Environment Canada that lists only companies. A total of 643 companies were in these separate files.

^bThese are firms publicly traded on a Canadian stock exchange with an SIC Code from 20 to 39. Firm name, address, and public status were collected from Survey of Industrials 1994, Survey of Mines and Energy Resources 1990, or Report on Business Canada Company Handbook 1997.

^cOnly firms with an SIC Code from 20 to 39 are required to report pollution releases in the United States.

^dFirms in the Global Researcher SEC database with December 31 year-ends and an SIC Code from 20 to 39. Global Researcher SEC includes only firms that report to the Securities and Exchange Commission.

Two methods were used to obtain annual reports. First, a letter was mailed requesting annual reports to each of the first 50 Canadian firms and the first 50 U.S. firms selected for the study as explained above. Second requests were mailed for all annual reports not received. The Disclosure Select CD-ROM database was searched to obtain any annual reports not received by mail. Annual reports were obtained for the initial sample of 50 firms for both countries.

Research Design

By examining only U.S. and Canadian firms that publicly reported the quantity of their pollution releases, the chosen initial sample includes only firms that are likely to have some amount, and potentially significant amounts of environmental costs. The amount of pollution releases reported by a firm to the appropriate governmental agency is used as a proxy for a firm's environmental performance, or in other words, the amount of environmental exposure that a firm has. Measuring environmental performance by the amount of pollution released is a unique but also advantageous approach, since the quantity of pollution released is a direct, verifiable, objective measure of environmental performance.

Firms with poorer environmental performance (i.e., greater environmental exposure) would generally be expected to report larger environmental capital costs and operating costs than would firms with minor amounts of environmental problems. A firm must have some amount of environmental costs before it can report them. Selecting only firms with reported pollution releases for this study ensures that both the U.S. and the Canadian sample firms are likely to have environmental costs that they choose whether or not to disclose in their annual report.

Hypotheses for Environmental Capital Expenditures and Operating Expenses

Disclosures that provide the amount of environmental costs incurred are among the most informative and useful disclosures to the stakeholders of a firm (Evers et al., 2006; Clarkson et al., 2004; Li & McConomy, 1999). Because financial statement users consider environmental cost information to be valuable, the following two types of costs were noted and totaled from the annual reports (both years combined) for each corporation that reported

them: environmental capital expenditures and environmental operating costs (such as remediation, cleanup, and general expenses). These cost disclosures provide an understanding of the amount of environmental capital and operating costs that the sample U.S. and Canadian corporations were incurring. These costs were analyzed with the following two OLS regression models for each of the two nations separately to examine variables that potentially affect the amount of disclosed environmental costs:

$$\text{ENVCAP} = \phi_0 + \phi_1\text{POLL} + \phi_2\text{NUMFAC} + \phi_3\text{RETEQ} + \phi_4\text{SIZE} + e \quad (1)$$

where ENVCAP is the total current year environmental capital expenditures in U.S. dollars.

$$\text{ENVEXP} = \gamma_0 + \gamma_1\text{POLL} + \gamma_2\text{NUMFAC} + \gamma_3\text{RETEQ} + \gamma_4\text{SIZE} + e \quad (2)$$

where ENVEXP is the total current year environmental operating expenses in U.S. dollars. POLL is the total tons of untreated pollution releases by the firm in the current year. NUMFAC the number of facilities for which the firm reported pollution releases. RETEQ is return on average equity, calculated as net income shown on the income statement divided by average equity. Average equity was defined as (total equity at beginning of year + total equity at end of year)/2. SIZE is the size of the firm, which is measured in separate runs of the model by the firm's average assets, and by the firm's total operating revenues (i.e., sales). Average assets was calculated as (total assets at beginning of year + total assets at end of year)/2. e is the residual term from the OLS regression results.

Canadian firms' environmental costs were converted to U.S. dollars using either the firm's average conversion rate indicated in the annual report, or the average rate of all Canadian firms that reported the U.S. currency exchange rate experienced during the year. POLL and NUMFAC were collected from the TRI database for U.S. firms and the NPRI database for Canadian firms.

RETEQ and SIZE are employed in the models to control for variation in environmental cost amounts that occur regardless of the quantity of firms' pollution releases or the number of polluting facilities. RETEQ is used to control for operating performance. RETEQ controls for the expectation that firms with better operating performance will spend more on environmental capital and operating costs. As a firm's return on equity increases, the firm is likely to have higher environmental costs since it can more easily afford both larger capital costs and operating expenses.

SIZE is measured by both total assets and by total sales, with models 1 and 2 run separately for each measure. Total assets is one measure employed for firm size, as firms with greater assets have more resources available to incur environmental costs. Barth et al. (1995) used the market value of equity to control for firm size effects. Total sales will also be used to measure SIZE, similar to Patten (1991). SIZE controls for the expectation that larger firms will spend greater amounts on environmental capital and operating costs than will small firms. Thus, a positive relationship is expected between SIZE and the amount of environmental capital costs and environmental operating costs. No formal hypotheses are presented for the regression results for RETEQ and SIZE, since these are control variables and not the primary variables of interest in this study. NUMFAC and POLL are the variables the variables of primary interest in models 1 and 2, with hypotheses following for these variables.

ENVCAP and ENVEXP were collected from the sample firms' annual reports. Firms that did not report a specific amount for ENVCAP or ENVEXP are excluded from the analysis of models 1 and 2. The following hypotheses are proposed regarding the affect of the number of facilities on the amount of environmental costs, and are stated in the alternative form.

Hypothesis 1. As corporations have a greater NUMFAC, the amount of ENVCAP disclosed in annual reports increases.

Hypothesis 2. As corporations have a greater NUMFAC, the amount of ENVEXP disclosed in annual reports increases.

These results are expected because with more facilities, firms require more pollution prevention equipment and would have more sites to clean up. As a firm has more separate facility locations, the environmental capital and remediation costs should be greater. In other words, there are expected to be variable capital and operating costs associated with each additional facility that a firm has.

Firms with higher pollution levels likely have more significant environmental problems than do firms that release lower amounts of pollution. Increased environmental exposure through the release of greater quantities of pollution is likely to lead to higher amounts of environmental costs. With additional pollution produced, capital expenditures undertaken in the current year should be greater as more equipment would likely be purchased in an effort to reduce the amount of future pollution releases to a level suitable to society and/or to meet legal requirements. Also, with an increase in pollution, cleanup efforts would likely be more extensive and remediation

Table 2. Summary of Expected Regression Results for Models 1 and 2.

Independent Variables	Dependent Variable and Predicted Signs of Coefficients	
	Model 1: ENVCAP	Model 2: ENVEXP
POLL	+	+
NUMFAC	+	+
RETEQ	+	+
SIZE	+	+

Note: Models 1 and 2 are run separately for U.S. firms and Canadian firms.

costs and other environmental operating expenses should be higher. Thus, the following hypotheses are proposed, and are stated in the alternative form.

Hypothesis 3. As the amount of POLL increases, the amount of ENVCAP disclosed in annual reports increases.

Hypothesis 4. As the amount of POLL increases, the amount of ENVEXP disclosed in annual reports increases.

The expected results for regression models 1 and 2 are given in Table 2. Models 1 and 2 test Hypotheses 1–4

EMPIRICAL RESULTS

This section of the paper provides a detailed discussion of the techniques used to test the stated hypotheses. In addition, the specific results of the tests are stated.

Regression Diagnostics

Model 1 analyzes firms' environmental capital expenditures, and tests hypotheses 1 and 3. Model 2 examines firms' environmental operating expenses, and tests hypotheses 2 and 4. Models 1 and 2 are repeated here for ease of reference.

$$\text{ENVCAP} = \phi_0 + \phi_1\text{POLL} + \phi_2\text{NUMFAC} + \phi_3\text{RETEQ} + \phi_4\text{SIZE} + e \quad (3)$$

$$\begin{aligned} \text{ENVEXP} = & \gamma_0 + \gamma_1 \text{POLL} + \gamma_2 \text{NUMFAC} \\ & + \gamma_3 \text{RETEQ} + \gamma_4 \text{SIZE} + e \end{aligned} \quad (4)$$

Each model was run separately by country using OLS regression. Scatter plots were produced displaying each of the independent variables on the *X*-axis and the unstandardized residual from the model on the *Y*-axis. The plots were examined for the existence of heteroscedasticity (i.e., non-constant variance) of the residuals. For model 1, the scatter plots revealed a slightly decreasing variance of the residuals when plotted against POLL and when plotted against SIZE. POLL is the total tons of untreated pollution released by the firm, and SIZE is measured in separate regression runs both by average total assets and by sales revenue. The scatter plots for NUMFAC and RETEQ indicated a near constant variance of the residuals.

To test normality of the residuals from model 1, a plot of the observed cumulative probability of the actual residuals was plotted against the expected probability for a normal distribution. The plot revealed that the model 1 residuals did not closely follow a normal distribution.

To attempt to correct the residuals to a normal distribution, the dependent variable in model 1 was changed to the natural log of environmental capital expenditures. To correct the heteroscedasticity of the residuals, the natural log of tons of pollution was substituted for POLL, and the natural log values of average assets and sales revenues were substituted for the regular measures of those variables.

Model 1 was rerun with the changes noted. The scatter plots prepared after substituting the log variables indicated a nearly constant variance of the residuals plotted against each independent variable. The plot of the residuals against the expected normal distribution revealed that the residuals now closely followed a normal distribution. Thus, the empirical form of model 1 became:

$$\begin{aligned} \text{LENVCAP} = & \phi_0 + \phi_1 \text{LPOLL} + \phi_2 \text{NUMFAC} \\ & + \phi_3 \text{RETEQ} + \phi_4 \text{LSIZE} + e \end{aligned} \quad (1^*)$$

where LENVCAP is the natural log of the firm's current year environmental capital expenditures, LPOLL is the natural log of the tons of pollution released by the firm, and LSIZE is the natural log of either the firm's average assets or sales revenue, as each is used in a separate regression to measure size.

For model 2, the scatter plots of the unstandardized residuals from the model compared to each independent variable revealed no significant

heteroscedasticity. Also, the plot of the observed cumulative probability of the actual residuals against the expected probability for a normal distribution indicated a nearly normal distribution of the residuals. Thus, the empirical form of model 2 is the same as that given above.

Next, variance inflation factors (VIFs) were examined to test for multicollinearity among the independent variables. The VIFs for model 1 were no higher than 2.293 for Canadian firms and 2.825 for U.S. firms. The highest VIFs for model 2 were 1.929 for Canadian firms and 5.960 for U.S. firms. Since all the VIFs are <6 , no significant multicollinearity exists with either model 1 or model 2.

The influence of each observation on each regression coefficient in models 1 and 2 was examined by calculating DFBETAS. This tests for outliers for each independent variable. For model 1, all the Canadian firms' and the U.S. firms' absolute DFBETAS values were <0.20 . For model 2, all absolute DFBETAS values were <1 for each country's sample. Thus, no observations exert undue influence on the regression coefficients.

Table 3. Descriptive Statistics of Regression Variables for Model 2 (1994–1995).

Variable	Canadian Firms			U.S. Firms		
	Mean	SD	<i>n</i>	Mean	SD	<i>n</i>
<i>Panel A: Variable statistics</i>						
LENVCAP	16.20	1.48	43	16.53	1.42	34
LPOLL	6.24	1.92	43	7.00	1.41	34
NUMFAC	4.23	3.23	43	8.76	10.00	34
RETEQ	15.99	11.78	43	20.67	31.11	34
LAVAS	21.08	1.13	43	21.36	1.27	34
LSALES	20.96	1.02	43	21.41	1.19	34
<i>Panel B: Variable definitions</i>						
LENVCAP: the natural log of U.S. dollars of current year environmental capital expenditures						
LPOLL: the natural log of total tons of untreated pollution releases by the firm in the current year						
NUMFAC: the number of facilities for which the firm reported pollution releases						
LAVAS: the natural log of thousands of U.S. dollars of average assets. Average assets was calculated as (total assets at beginning of year + total assets at end of year)/2						
LSALES: the natural log of thousands of U.S. dollars of total operating revenues						
RETEQ: return on average equity, calculated as net income from the income statement divided by average equity. Average equity was defined as (total equity at beginning of year + total equity at end of year)/2						

Descriptive statistics of the regression variables for model 1 are given in Table 3. Panel A provides the statistics for each nation's firms, as the model is run separately for Canadian firms and U.S. firms. The variable definitions are given in panel B. Of 100 original observations for each country, only 43 Canadian firms and 34 U.S. firms stated the amount of their environmental capital expenditures.

Descriptive statistics of the regression variables for model 2 are presented in Table 4. The U.S. firms' mean environmental expense of \$29,176,171 is large compared to the mean for Canadian firms of \$18,214,294. Also interesting is that almost the same number of U.S. firms disclosed environmental expenses as did environmental capital expenditures (35 and 34, respectively). However, only 22 Canadian firms disclosed environmental expenses while 43 of them disclosed environmental capital expenditures.

Results for Hypothesis 1

Hypothesis 1 projects that firms' reported environmental capital expenditures increase as the number of firm pollution-releasing facilities increases.

Table 4. Descriptive Statistics of Regression Variables for Model 2 (1994–1995).

Variable	Canadian Firms			U.S. Firms		
	Mean	SD	<i>n</i>	Mean	SD	<i>n</i>
<i>Panel A: Variable statistics</i>						
ENVEXP	18,214,294	26,966,306	22	29,176,171	42,295,839	35
POLL	1960.30	1987.49	22	2086.62	2505.24	35
NUMFAC	5.77	2.78	22	10.23	10.23	35
RETEQ	13.71	9.92	22	17.88	34.28	35
AVAS	3,420,000	3,310,000	22	3,500,000	3,552,000	35
SALES	2,520,000	2,583,000	22	3,450,000	3,007,000	35

Panel B: Variable definitions

ENVEXP: total current year environmental operating expenses stated in U.S. dollars, if disclosed in the firm's annual report

POLL: total tons of untreated pollution releases by the firm in the current year

NUMFAC is defined in Table 2, and RETEQ is defined in Table 3

AVAS and SALES are stated in thousands of U.S. dollars, and are defined in Table 3

Model 1 examines this relationship. The regression analysis results for the natural log of environmental capital expenditures are contained in Table 5. The regression coefficients on the NUMFAC variable are not significant for either Canadian firms or U.S. firms in either regression 1 or 2. These results indicate that firms' environmental capital expenditures do not vary significantly according to the number of facilities that are releasing pollution. Thus, Hypothesis 1 is not accepted.

Table 5. OLS Regression Analysis of Environmental Capital Expenditures.

Variable	Coefficient	Canadian Firms		U.S. Firms	
		[t-Value] (Significance)		[t-Value] (Significance)	
Regression		1	2	1	2
Intercept	ϕ_0	0.940 [0.175] (0.862)	3.138 [0.542] (0.591)	1.462 [0.384] (0.704)	-0.845 [-0.250] (0.804)
LPOLL	ϕ_1	-0.004 [-0.032] (0.488)	0.047 [0.387] (0.355)	0.250 [1.189] (0.122)	0.317 [1.935] (0.032) ^b
NUMFAC	ϕ_2	-0.005 [-0.059] (0.477)	0.022 [0.233] (0.409)	-0.008 [-0.365] (0.359)	-0.011 [-0.575] (0.285)
RETEQ	ϕ_3	-0.005 [-0.251] (0.402)	-0.014 [-0.807] (0.213)	0.006 [1.087] (0.143)	0.002 [0.428] (0.336)
LAVAS	ϕ_4	0.730 [2.738] (0.001) ^a	- - -	0.620 [2.794] (0.001) ^a	- - -
LSALES	ϕ_5	- - -	0.616 [2.160] (0.019) ^b	- - -	0.710 [3.872] (0.001) ^a
F-value for model		4.340	3.479	8.940	12.100
Significance of F-value		0.005	0.016	0.000	0.000
R ²		0.314	0.268	0.552	0.625
Adjusted R ²		0.241	0.191	0.490	0.574
Sample size		43	43	34	34

Regression 1: $LENVCAP = \phi_0 + \phi_1 LPOLL + \phi_2 NUMFAC + \phi_3 RETEQ + \phi_4 LAVAS + e$
 Regression 2: $LENVCAP = \phi_0 + \phi_1 LPOLL + \phi_2 NUMFAC + \phi_3 RETEQ + \phi_5 LSALES + e$

^aIndicates significance at <0.01 level (one-tailed test).

^bIndicates significance at <0.05 level (one-tailed test).

Results for Hypothesis 2

Hypothesis 2 posits that firms' environmental operating expenses will increase as the number of firm facilities reporting pollution releases increases. Model 2 tests this hypothesis and the regression analysis results for environmental operating expenses are given in Table 6. For Canadian firms, the results reveal that no significant relationship exists between NUMFAC and the amount of

Table 6. OLS Regression Analysis of Environmental Operating Expenses.

Variable	Coefficient	Canadian Firms		U.S. Firms	
		[<i>t</i> -Value]	[<i>t</i> -Value]	[<i>t</i> -Value]	[<i>t</i> -Value]
		(Significance)	(Significance)	(Significance)	(Significance)
Regression		1	2	1	2
Intercept	γ_0	-2,319,952 [-0.210] (0.836)	-4,481,381 [-0.382] (0.707)	1,002,798 [0.101] (0.920)	-510,309 [-0.049] (0.961)
POLL	γ_1	-4,036 [-1.679] (0.055) ^c	-4,244 [-1.670] (0.057) ^c	-13,414 [-2.203] (0.018) ^b	-10,220 [-1.972] (0.029) ^b
NUMFAC	γ_2	318,726 [0.179] (0.430)	1,039,370 [0.567] (0.289)	2,262,629 [2.454] (0.010) ^b	2,278,846 [2.455] (0.010) ^b
RETEQ	γ_3	288,052 [0.641] (0.265)	361,334 [0.756] (0.230)	109,908 [0.600] (0.277)	42,097 [-0.209] (0.418)
AVAS	γ_4	0.007 [5.043] (0.000) ^a	- - -	0.009 [2.234] (0.016) ^b	- - -
SALES	γ_5	- - -	0.008 [4.567] (0.000) ^a	- - -	0.008 [2.117] (0.022) ^b
<i>F</i> -value for model		10.041	8.499	3.958	3.792
Significance of <i>F</i> -value		0.000	0.001	0.011	0.013
<i>R</i> ²		0.703	0.667	0.345	0.336
Adjusted <i>R</i> ²		0.633	0.588	0.258	0.247
Sample size		22	22	35	35

Regression 1: $ENVEXP = \gamma_0 + \gamma_1 POLL + \gamma_2 NUMFAC + \gamma_3 RETEQ + \gamma_4 AVAS + e$

Regression 2: $ENVEXP = \gamma_0 + \gamma_1 POLL + \gamma_2 NUMFAC + \gamma_3 RETEQ + \gamma_5 SALES + e$

^aIndicates significance at <0.01 level (one-tailed test).

^bIndicates significance at <0.05 level (one-tailed test).

^cIndicates significance at <0.10 level (one-tailed test).

environmental operating expenses incurred. For U.S. firms, the relationship between NUMFAC and environmental operating expenses is significant at the 0.01 level and positive as hypothesized. The findings indicate that U.S. firms incur approximately \$2.3 million in incremental environmental operating expenses for each additional facility releasing pollution. Thus, Hypothesis 2 is accepted for U.S. firms but not for Canadian firms.

Results for Hypothesis 3

Hypothesis 3 proposes that firms' environmental capital expenditures will increase as the quantity of their pollution released increases. The regression analysis results are provided in Table 5. The coefficients on the LPOLL variable are significant only for U.S. firms in regression 2. The non-significance in regression 1 for the U.S. firms and in both regressions for the Canadian firms indicate that there is probably no significant relation between the natural log of firms' pollution releases and the natural log of firms' environmental capital expenditures. Thus, Hypothesis 3 is not accepted.

Results for Hypothesis 4

Hypothesis 4 posits that as firms release additional amounts of pollution, they will experience an increase in environmental operating expenses. The relationship between pollution levels and environmental operating expenses is examined by model 2. The regression results of testing Hypothesis 4 are presented in Table 6. The regression coefficients on the POLL variable are negative and significant at <0.03 level for U.S. firms in both regressions. For Canadian firms, the POLL variable is negative and significant at <0.06 level in both regressions. These results are directly opposite of those hypothesized. Thus, Hypothesis 4 is rejected.

The regression results for the POLL variable in Table 6 indicate that as firms release more pollution, they are experiencing a decrease in environmental operating expenses. This finding suggests that the firms are not incurring the costs expected and necessary to clean up excessive levels of pollution. Firms may be incurring clean up and other environmental operating costs associated with these pollution releases. However, the results strongly indicate that the firms' total environmental operating costs actually decrease with higher levels of pollution releases.

Alternative Explanations for Unexpected Findings

The findings were unexpected: (1) that a higher number of pollution-releasing facilities was associated with lower environmental capital expenditures, (2) that for Canadian firms, environmental operating expenses did not increase with a greater number of pollution-releasing facilities, (3) environmental capital expenditures did not increase as the quantity of pollution releases increased, and (4) as firms release additional amounts of pollution, they did not experience an increase in environmental operating expenses. Some alternative explanations might account for these unexpected findings.

Instead of predicting that higher expenditures and operating expenses match to a higher number of pollution-releasing facilities and higher pollution releases, the opposite could be predicted. A higher amount of environmental capital expenditures in current or prior years might lead to relatively lower capital expenditures in later years, resulting in lower expenditures matched to a higher number of facilities. A greater number of facilities that are more efficiently designed could possibly be associated with lower operating expenses, as was the case with Canadian firms (but not the case with American firms). Higher capital expenditures and operating expenses in 1 year might lead to lower levels of pollution releases in later years, thus reversing the hypothesized cause-and-effect relationship.

SUMMARY AND CONCLUSIONS

This research considered important issues regarding the amount of environmental capital expenditures and environmental operating expenses reported by firms in the United States and Canada. Regression models were employed to evaluate how certain variables affect firms' environmental capital expenditures and environmental operating expenses.

For firms in both countries, environmental capital expenditures did not vary significantly according to the number of facilities that are releasing pollution. For Canadian firms, no significant relationship existed between the number of firm facilities releasing pollution and the amount of environmental operating expenses incurred. For U.S. firms, there was a positive and significant relationship between the number of polluting facilities and environmental operating expenses. Results indicate that as Canadian firms add pollution-releasing facilities, they are not recording (incurring) additional capital expenditures to prevent and cleanup pollution.

The implication to investors and other stakeholders is that they may need to discount the value of the firm and assess its environmental risk at a higher level. Regarding U.S. firms, they probably have less exposure than do Canadian firms, as they are recording (incurring) significantly greater environmental operating expenses (i.e., cleanup costs) with the addition of polluting facilities.

Regression results found no significant relation between the natural log of firms' pollution releases and the natural log of firms' environmental capital expenditures. Thus, as firms increase pollution releases, they are apparently not investing in facilities needed to adequately manage this pollution. Additional regression results indicate that at the higher levels of pollution releases, firms unexpectedly disclose a decrease in environmental operating expenses. Combined, these results should be of concern to investors and other stakeholders such as government regulators. The results imply that many firms were possibly delaying either the recording or funding of necessary environmental expenditures and, if so, likely have significant amounts of unrecorded future environmental obligations. In other words, some firms that were releasing higher levels of pollution were not currently paying to manage the problem and thus will likely have to pay at some future time. Stakeholders should be wary of firms' pollution levels. A firm that fails to spend adequately on either environmental capital costs or environmental operating expenses should be assigned a higher level of investment risk.

Results of the study suggest that the adequacy of environmental reporting was questionable in the time periods prior to SOP 96-1. This implies that additional guidance, starting with SOP 96-1, was needed. Thus, SOP 96-1, other GAAP issued by FASB, as well as input from the SEC and GAO, were appropriate for enhancing financial reporting regarding environmental matters. Users of financial statements, especially investors, should be concerned about the possibility of a firm's delay in either the recording or funding of necessary environmental expenditures, which results in significant amounts of unrecorded future environmental obligations.

LIMITATIONS AND FUTURE RESEARCH

This study has examined the environmental reporting in the audited financial statements of firms based in the United States and Canada. Thus, the study is limited to the extent that this information is accurate and complete. The study was limited to two countries: the United States and

Canada. Future studies might consider reporting requirements in additional countries. This study might serve as a starting point for a longitudinal study that considers additional years of data, particularly to determine the long-term impact of SOP 96-1 and other subsequent guidance on reporting of environmental matters. Future research might identify other sources of environmental data in addition to that included in the audited financial statements.

The study was limited by its methodology, which predicted direction of findings. There are valid competing explanations for the relationships examined in the study, which would alter the direction of the predictions. Consequently, a future study might consider using an alternative analysis, employing a “two-tailed” approach looking only to see if there are significant results under different assumptions, without hypothesizing a direction. For example, instead of predicting that higher expenditures and operating expenses match to a higher number of pollution-releasing facilities and higher pollution releases, the opposite could be predicted. Higher capital expenditures and operating expenses in 1 year might lead to lower levels of pollution releases in later years.

REFERENCES

- Aerts, W., Cormier, D., & Magnan, M. (2006). Intra-industry imitation in corporate environmental reporting: An international perspective. *Journal of Accounting and Public Policy*, 25(3), 299–331.
- Alciatore, M., Dee, C. C., & Easton, P. (2004). Changes in environmental regulation and reporting: The case of the petroleum industry from 1989 to 1998. *Journal of Accounting and Public Policy*, 23(4), 295–304.
- American Institute of Certified Public Accountants, Accounting Standards Executive Committee. (1996). *Statement of position 96-1: Environmental remediation liabilities*. New York, NY.
- Barth, M. E., & McNichols, M. F. (1994). Estimation and market valuation of environmental liabilities relating to superfund sites. *Journal of Accounting Research*, 32(Suppl.), 177–209.
- Barth, M. E., McNichols, M. F., & Wilson, G. P. (1995). *Factors influencing firms' decisions about environmental liabilities*. Working Paper. Stanford University, Stanford, CA, and Massachusetts Institute of Technology, Cambridge, MA.
- Canadian Institute of Chartered Accountants. (1994). *Reporting on environmental performance*. Toronto, Ontario.
- Canadian Performance Reporting Board. (2005). *MD&A disclosure about the financial impact of climate change and other environmental issues* (October). Canadian Institute of Chartered Accountants.

- Clarkson, P., Li, Y., & Richardson, G. (2004). The market valuation of environmental capital expenditures by pulp and paper companies. *The Accounting Review*, 79(2), 329–353.
- CNN. (2006). Energy chief: High gas prices could last 3 years. CNN, website: <http://www.cnn.com/2006/POLITICS/04/30/bodman.gasprices/index.html>, 30 April.
- Conference Board of Canada. (2006). *Carbon disclosure project report Canada 280* (February). Conference Board of Canada.
- Environment Canada. (1994). *National pollutant release inventory*. <http://www.ec.gc.ca/pdb/npri>
- Environment Canada. (1995). *National pollutant release inventory*. <http://www.ec.gc.ca/pdb/npri>
- EPA (United States Environmental Protection Agency). (1996a). *EPA 742-R-96-003, valuing potential environmental liabilities for managerial decision-making: A review of available techniques* (December). Washington, DC: EPA.
- EPA (United States Environmental Protection Agency). (1996b). *Toxics release inventory 1987–1994 CD-ROM manual*. Washington, DC.
- Evers, P. S., Smith, L. M., Brown, D., & Drake, M. (2006). *Contingent liabilities: Environmental disclosures and accounting*. Washington, DC: BNA.
- FASB (Financial Accounting Standards Board). (1975). *Statement of financial accounting standards No. 5, accounting for contingencies*. Financial Accounting Standards Board Website: Fasb.org
- FASB (Financial Accounting Standards Board). (1976). *Financial interpretation No. 14 reasonable estimation of the amount of a loss – An interpretation of FASB statement No. 5*. Financial Accounting Standards Board Website: Fasb.org
- FASB (Financial Accounting Standards Board). (2001a). *Statement of financial accounting standards No. 143, accounting for asset retirement obligations*. Financial Accounting Standards Board Website: Fasb.org
- FASB (Financial Accounting Standards Board). (2001b). *Statement of financial accounting standards No. 144, accounting for the impairment or disposal of long-lived assets*. Financial Accounting Standards Board Website: Fasb.org
- FASB (Financial Accounting Standards Board). (2005a). *Financial interpretation No. 47, accounting for conditional asset retirement obligations*. Financial Accounting Standards Board Website: Fasb.org
- FASB (Financial Accounting Standards Board). (2005b). *Potential agenda project on the reconsideration of the accounting for contingent environmental liabilities under statement 5*. Minutes of the March 9, 2005 Board Meeting. Financial Accounting Standards Board Website: Fasb.org
- Freire, P. (1996). *Pedagogy of the oppressed*. London: Pelican.
- GAO (U.S. General Accountability Office). (2004). *GAO-04-808 environmental disclosure: SEC should explore ways to improve tracking and transparency of information* (July). GAO, Washington, DC.
- Harrington, C. (2003). Socially responsible investing. *Journal of Accountancy* (January), 52–61.
- Horsley, S. (2006). What's behind high gas prices? NPR, website: <http://www.npr.org/templates/story/story.php?storyId=5365439>, 19 July.
- Johnson, L. T. (1993). Research on environmental reporting. *Accounting Horizons*, 7(September), 118–123.
- KPMG. (2000). *Environmental reporting on the rise*. KPMG Website International Report (February), 1–2.

- Kuasirikun, N. (2005). Attitudes to the development and implementation of social and environmental accounting in Thailand. *Critical Perspectives on Accounting*, 16(8), 1035–1057.
- Li, Y., & McConomy, B. J. (1999). An empirical examination of factors affecting the timing of environmental accounting standard adoption and the impact of corporate valuation. *Journal of Accounting, Auditing & Finance*, 14(3), 279–319.
- Miller, M. (2000). Beyond compliance. *Natural Business LOHAS Journal* (July–August), 21–23.
- Niskala, M., & Pretes, M. (1995). Environmental reporting in Finland: A note on the use of annual reports. *Accounting, Organizations and Society*, 20(6), 457–466.
- North American Commission for Environmental Cooperation. (2003). *Environmental disclosure in financial reporting: Update and recommendations* (June). NACEC.
- Parker, L. (2005). Social and environmental accountability research: A view from the commentary box. *Accounting, Auditing & Accountability Journal*, 8(6), 842–861.
- Parsa, S., and Uju, N. (2006). *Voluntary social reporting via the world wide web. Financial reporting and business communication conference* (July). Wales, UK: Cardiff University.
- Patten, D. M. (1991). Exposure, legitimacy, and social disclosure. *Journal of Accounting and Public Policy*, 10(Winter), 297–308.
- Price Waterhouse. (1992). *Environmental costs: Accounting and disclosure*. New York, NY.
- Rezaee, Z., Smith, L. M., & Smith, L. C., Jr. (2001). Voluntary environmental reporting: Does it matter to investors? *Oil, Gas and Energy Quarterly*, 50(1), 165–178.
- Santhosh, A., & Tonks, I. (2006). *Voluntary corporate disclosure by UK companies. financial reporting and business communication conference* (July). Wales, UK: Cardiff University.
- Sarbanes-Oxley. (2007). *Financial accounting and disclosure information* (September). Sarbanes-Oxley Act Website: Sarbanes-Oxley.com
- Thomson, I., & Bebbington, J. (2005). Social and environmental reporting in the UK: A pedagogic evaluation. *Critical Perspectives on Accounting*, 16(5), 507–533.
- Waddock, S., & Graves, S. (1997). The corporate social performance – Financial performance link. *Strategic Management Journal*, 18(4), 303–319.

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AN EXAMINATION OF SUPPLEMENTAL DISCLOSURE REQUIREMENTS FOR DEVELOPMENT STAGE ENTERPRISES

Mark P. Bauman and Rick Francis

ABSTRACT

Under U.S. GAAP, development stage enterprises are required to report cumulative (i.e., inception-to-date) totals for each line item in the statements of income, cash flow, and stockholders' equity. The purpose of this study is to investigate whether additional income statement disclosures provide value-relevant information to investors. Based on an empirical analysis of a sample of publicly traded development stage enterprises, we find that historical income statement components do not exhibit a significant association with equity values after controlling for the effects of non-financial information and current accounting data. In terms of current accounting data, book value of equity (primarily contributed capital), cash holdings, and R&D expense appear to be most useful for valuation purposes. These results imply that supplemental disclosure requirements geared toward providing qualitative information about development stage firms may prove more informative than providing cumulative financial statement data.

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1. INTRODUCTION

The preparation of general-purpose financial statements under U.S. GAAP rests primarily on the notion “one-size-fits-all.” One notable exception exists under Statement of Financial Accounting Standards No. 7 (SFAS 7), *Accounting and Reporting by Development Stage Enterprises* (FASB, 1975). SFAS 7 defines a development stage enterprise as one focusing its efforts on establishing a new business, where principal operations have either not commenced or not produced significant revenue.

Prior to the effective date of SFAS 7, many development stage firms elected to defer pre-operating costs and report them as assets in a non-traditional version of the balance sheet. Under SFAS 7, in addition to traditional reporting requirements, development stage firms are required to report cumulative (i.e., inception-to-date) totals for each line item in the statements of income, cash flow, and stockholders’ equity. The FASB stated that disclosure of cumulative financial information “will provide useful information about the activities of development stage enterprises without sacrificing the advantages of retaining the familiar format and content of the basic financial statements of established operating enterprises” (SFAS 7, para. 43). The purpose of this study is to investigate whether cumulative income statement disclosures provide value-relevant information to investors.

Due to the conservative nature of generally accepted accounting principles, companies report substantial operating losses during the development stage. However, the existence of positive share prices implies that investors look beyond the reported losses for equity valuation purposes. Thus, accounting earnings may have little value relevance for development stage firms. We estimate an accounting-based valuation model, using a sample of 285 publicly traded development stage enterprises over the period 1996–2005. The results indicate that *historical* income statement components do not exhibit a significant association with equity values. In terms of current accounting data, book value of equity (particularly contributed capital), cash balance, and research and development expense, are most useful for valuation purposes. In addition, we find that equity values are increasing in our primary proxy for non-financial statement information – the amount of external equity financing raised. This positive relation indicates that new investors identify important value drivers that are not captured by the accounting system. Overall, these results imply that supplemental disclosure requirements geared toward providing *qualitative* information about development stage firms may prove more informative than providing additional financial statement data.

This study contributes to the accounting literature along two key dimensions. First, it provides evidence of whether the supplemental reporting requirements for development stage firms reflect information used by investors in firm valuation. Such evidence is useful to standard setters in assessing the relevance and reliability of accounting disclosures (Barth, Beaver, & Landsman, 2001; Leisenring & Johnson, 1994). In this regard, existing studies examine special reporting requirements applicable to mortgage loan servicers (Cochran, Coffman, & Harless, 2004), banks (Beaver, Eger, Ryan, & Wolfson, 1989), and oil and gas firms (Harris & Ohlson, 1987). Second, this study extends the literature on loss firms. Although the academic literature includes several studies of the relation between accounting losses and security valuation (Hayn, 1995; Jan & Ou, 1995; Collins, Pincus, & Xie, 1999; Joos & Plesko, 2005; Darrrough & Ye, 2007) and accounting losses in general (Klein & Marquardt, 2006), there is no study that examines the special financial reporting requirements for development stage enterprises.¹ The relevance of the historical cost-based accounting model, especially for firms with significant investments in intangible assets, has been questioned by many observers (e.g., Wallman, 1995; Lev & Zarowin, 1999; Eccles, Herz, Keegan, & Phillips, 2001). In the case of development stage enterprises, the need for additional information is addressed via a standard from 1975 that primarily calls for more of the same information. This study provides empirical evidence that the cumulative income statement disclosures required under SFAS 7 are not useful to investors. From an international perspective, the IASB is deliberating on a simplified set of accounting standards for small- and medium-sized entities, or SMEs (IASB, 2007). Although the IASB excludes publicly traded firms from its definition of a SME, the current study is relevant to the deliberations. The IASB has proposed a set of reduced disclosure requirements for SMEs. To the extent that a SME is in the pre-operating stage, additional disclosure requirements may enhance the usefulness of the financial statements.

2. HISTORICAL BACKGROUND AND RESEARCH QUESTION

2.1. Historical Background

A distinguishing attribute of development stage firms is the substantial costs they incur prior to commencement of operations. Since these firms have no

significant operating revenues to match against costs incurred, some accountants feel the matching principle should lead to the deferral of these costs (Wharton, 1970). Prior to 1975, both SEC Regulation S-X and a proposed audit guide issued by the AICPA permitted development stage enterprises to defer pre-operating costs (SFAS 7, para. 34). Accordingly, many of these firms did not issue traditional balance sheets. Instead, Article 5A of Regulation S-X required a statement of assets and unrecovered promotional, exploratory, and development costs, which permitted the capitalization of pre-operating costs. Further, Article 5A did not require the presentation of an income statement.

Since a traditional balance sheet requires an auditor to express an opinion concerning its presentation in conformity with GAAP, auditors require the immediate expensing of most pre-operating costs. However, many auditors adopted the position that Article 5A financial statements did not purport to present financial position and, therefore, did not require an evaluation in terms of generally accepted accounting principles (Wharton, 1970). Article 5A essentially allowed auditors to accommodate their development stage clients that wished to defer pre-operating costs with uncertain prospects for recovery. Thus, many development stage firms used Article 5A to avoid recognizing large accounting losses.

In June 1975, the FASB enacted SFAS 7 to unify the accounting and reporting by development stage and operating firms. SFAS 7 contains three primary components. First, it establishes guidelines for identifying development stage enterprises. SFAS 7 defines a development stage firm as (1) devoting substantially all of its efforts to establishing a new business, and (2) having either no principal operations or no significant revenues from principal operations. Development stage firms typically focus on activities such as "financial planning; raising capital; exploring for natural resources; developing natural resources; research and development; establishing sources of supply; acquiring property, plant, equipment, or other operating assets, such as mineral rights; recruiting and training personnel; developing markets; and starting up production" (SFAS 7, para. 9).

Second, SFAS 7 requires development stage enterprises to use the same generally accepted accounting principles as traditional operating firms. A key requirement is for development stage and operating firms to use the same guidelines for determining whether to capitalize or expense costs. In addition, development stage firms are required to present the same basic financial statements as operating firms.

Third, SFAS 7 requires on the face of the financial statements supplemental disclosures beyond those required for operating firms. Financial reporting for

development stage firms includes a traditional balance sheet, with the exception that the cumulative net loss (appropriately captioned) is presented as a separate line item under shareholders' equity. Income statements must include an additional column displaying cumulative amounts of revenues and expenses since the firm's inception. Similar cumulative disclosures must appear on the face of the cash flow statement and statement of stockholders' equity. In addition, the statement of stockholders' equity must include details regarding each issuance of shares (e.g., date and number of shares issued, dollar amounts, and nature of any non-cash consideration). Further, the financial statements "shall be identified as those of a development stage enterprise and shall include a description of the nature of the development stage activities in which the enterprise is engaged" (SFAS 7, para. 12).

Exhibit 1 presents the income statement (panel A) and description of activities (panel B) for XM Satellite Radio Holdings, Inc., a sample firm. The company was a wholly owned subsidiary of American Mobile Satellite Corporation until its initial public offering in October 1999. Despite over 8 years since inception, the company had not generated any operating revenue as of December 31, 2000. According to its 2001 Form 10-K: "The Company emerged from the development stage in the fourth quarter of 2001 as its principal operations had commenced and its national rollout had been completed. Accordingly, the Company revised the presentation of its Consolidated Statements of Operations to reflect that of a commercial enterprise."

2.2. Research Question

SFAS 7 (para. 43) states that disclosure of cumulative amounts will provide "useful" information about the activities of development stage enterprises. We operationalize "usefulness" by examining the association between equity market values and cumulative earnings disclosures required under SFAS 7. Such tests are one means of operationalizing the FASB's relevance and reliability criteria (Barth et al., 2001). This approach is consistent with the FASB's Statement of Financial Accounting Concepts No. 1 (SFAC 1), *Objectives of Financial Reporting by Business Enterprises* (FASB, 1978). SFAC 1 (para. 34) states "(f)inancial reporting should provide information that is useful to present and potential investors and creditors and other users in making rational investment, credit, and similar decisions." In particular, the "primary focus of financial reporting is information about an enterprise's performance provided by measures of earnings and its components" (para. 43).

Panel A: Income statement

XM SATELLITE RADIO HOLDINGS INC. AND SUBSIDIARIES (A Development Stage Company)				
CONSOLIDATED STATEMENTS OF OPERATIONS				
Years Ended December 31, 1998, 1999 and 2000, and for the period from December 15, 1992 (date of inception) to December 31, 2000				
	1998	1999	2000	December 15, 1992 (date of inception) to December 31, 2000
(in thousands, except share data)				
Revenue.....	\$ --	\$ --	\$ --	\$ --
Operating expenses:				
Research and development.....	6,941	4,274	7,397	18,612
Professional fees.....	5,242	9,969	22,836	39,137
General and administrative.....	4,010	16,448	49,246	69,724
Total operating expenses.....	16,193	30,691	79,479	127,473
Operating loss.....	(16,193)	(30,691)	(79,479)	(127,473)
Other income (expense):				
Interest income.....	26	2,916	27,606	30,548
Interest expense.....	--	(9,121)	--	(9,670)
Net loss.....	\$ (16,167)	\$ (36,896)	\$ (51,873)	\$ (106,595)

Panel B: Description of development stage activities

We are in the development stage. Since our inception in December 1992, we have devoted our efforts to establishing and commercializing the XM Radio system. Our activities were fairly limited until 1997, when we pursued and obtained regulatory approval from the FCC to provide satellite radio service. Our principal activities to date have included

- . designing and developing the XM Radio system;
- . negotiating contracts with satellite and launch vehicle operators, specialty programmers, radio manufacturers and car manufacturers;
- . developing technical standards and specifications;
- . conducting market research; and
- . securing financing for working capital and capital expenditures.

Exhibit 1. Example of SFAS No. 7 Disclosures.

A framework for developing expectations regarding the association between market values of development stage firms and accounting information is the “investment opportunities approach” described by Miller and Modigliani (1961). Under this approach, the market value of a firm’s

equity depends on (1) the earning power of current operations, and (2) investment opportunities. For a development stage firm, current operations are either non-existent or not yet profitable; thus, market values primarily reflect future investment opportunities. Relatedly, [Burgstahler and Dichev \(1997\)](#) show that earnings is the more important determinant of equity value when return on equity is high, while book value becomes more important when return on equity is low. Given the negative returns on equity of development stage firms, book value is expected to be more value relevant than earnings.

While we expect earnings to be of lesser importance, it is not unreasonable to expect components of current earnings to provide incremental information. For example, [Joos and Plesko \(2005\)](#) find that current research and development expense is priced as an asset for firms with persistent losses. In addition, cumulative earnings figures may provide some history that current earnings omit. As per SFAS 7: “(d)evelopment stage activities are likely to extend into two or more financial reporting periods. To reflect the significance of development stage activities, the Board believes that the basic financial statements presented by a development stage enterprise should be expanded to provide cumulative financial information since its inception, as well as current information” (para. 43). Thus, this history could be useful toward explaining the variation in stock prices across firms. Although the cumulative earnings for development stage firms are losses, the market may perceive the losses as a necessary step toward profitability. In other words, the market may perceive cumulative losses as expenditures that generate economic assets.

3. EMPIRICAL MODEL

We utilize the following model to examine the value relevance of cumulative net income disclosures under SFAS 7 (see the [appendix](#) for derivation)

$$\begin{aligned}
 MVE_{i,t} = & \chi_0 + \chi_{0t} \sum_{t=1}^{T-1} YEAR_t + \chi_{0n} \sum_{n=1}^{N-1} INDUSTRY_i \\
 & + \chi_1 CASH_{i,t} + \chi_2 STKISS_{i,t} + \chi_3 DBTISS_{i,t} \\
 & + \chi_4 BVE^*_{i,t} + \chi_5 SALES_{i,t} + \chi_6 RD_{i,t} + \chi_7 OPEXP_{i,t} \\
 & + \chi_8 NONOP_{i,t} + \chi_9 HISTSALES_{i,t} + \chi_{10} HISTRD_{i,t} \\
 & + \chi_{11} HISTOPEXP_{i,t} + \chi_{12} HISTNON_{i,t} + \varepsilon_{i,t}
 \end{aligned}$$

where, $MVE_{i,t}$ is market value of equity for firm i , measured 3 months after the end of year t ; $YEAR_t$, dummy variable set equal to 1 for year t ($= 0$ otherwise); $INDUSTRY_n$, dummy variable set equal to 1 for industry n ($= 0$ otherwise); $CASH_{i,t}$, cash balance at year end; $STKISS_{i,t}$, external stock issuances during year t ; $DBTISS_{i,t}$, external debt issuances during year t ; $BVE_{i,t}^*$, book value of equity (less cumulative net income since inception) for firm i at end of year t ; $SALES_{i,t}$, operating revenues for firm i in year t ; $RD_{i,t}$, research and development expenses for firm i in year t ; $OPEXP_{i,t}$, operating expenses for firm i in year t ; $NONOP_{i,t}$, non-operating income for firm i in year t ; $HISTSALES_{i,t}$, operating revenues for firm i since inception (net of current amount); $HISTRD_{i,t}$, research and development expenses for firm i since inception (net of current amount); $HISTOPEXP_{i,t}$, operating expenses for firm i since inception (net of current amount); $HISTNON_{i,t}$, non-operating income for firm i since inception (net of current amount).

With respect to the research question, the coefficients of interest are those on the historical earnings components (i.e., χ_9 through χ_{12}). If the cumulative reporting requirements of SFAS 7 provide incrementally value-relevant information above and beyond current amounts and our proxies for non-financial statement information, then the estimates for χ_9 through χ_{12} will differ significantly from zero.

4. SAMPLE SELECTION AND DATA

4.1. Sample Selection

A sample of publicly traded development stage companies is identified by text searching the Disclosure Global Access/Worldscope database for the period 1996–2005.² This search yielded 850 unique firms. To be included in the final sample, each firm-year observation must have cumulative accounting disclosures (obtained from Form 10-Ks) as well as stock price and other financial data (from Compustat). The final sample contains 285 individual firms (853 firm-year observations).

4.2. Data

Descriptive statistics for the sample are presented in Table 1. In terms of industry composition (panel A), publicly traded development stage firms are

Table 1. Descriptive Statistics.

Panel A: Industry composition						
Industry	SIC Codes		N	%		
Mining	1300–1499		33	3.8		
Manufacturing						
Drugs	2800–2899		462	54.2		
Other	2600–2799 and 2900–3899		218	25.5		
Communications	4800–4899		17	2.0		
Real estate and holding companies	6500–6799		15	1.8		
Services	7000–8999		98	11.5		
Non-classifiable	9900		10	1.2		
Total			853	100.0		

Panel B: Variables in valuation model (\$ million)						
Variable	Mean	SD	25%	50%	75%	% = 0
MVE	116.77	239.87	15.07	43.53	117.39	0.0
CASH	20.32	42.05	0.56	5.29	21.37	0.3
STKISS	12.96	31.71	0.15	2.13	11.36	15.0
DBTISS	2.10	20.62	0.00	0.00	0.01	74.8
BVE*	66.34	91.05	15.60	36.73	77.93	0.0
SALES	1.19	3.10	0.00	0.07	0.79	40.1
RD	7.17	11.38	0.75	3.11	8.74	14.4
OPEXP	4.82	6.25	1.65	2.86	5.53	0.0
NONOP	0.50	2.00	–0.27	0.04	0.58	2.1
CUMSALES	5.02	11.13	0.00	0.56	4.77	26.4
CUMRD	29.68	41.34	3.76	13.87	37.87	12.1
CUMOPEXP	22.66	36.42	7.15	14.22	26.55	0.0
CUMNON	0.95	4.50	–0.71	–0.26	0.33	0.3

MVE, market value of equity; CASH, cash balance at year end; STKISS, stock issuances during current year; DBTISS, debt issuances during current year; BVE*, book value of equity (less cumulative net income since inception); SALES, operating revenues for current year; RD, research and development expenses for current year; OPEXP, operating expenses for current year; NONOP, non-operating income for current year; CUMSALES, cumulative operating revenues since inception; CUMRD, cumulative research and development expenses since inception; CUMOPEXP, cumulative operating expenses since inception; CUMNON, cumulative non-operating income since inception.

% = 0 is the percent of observations with values of zero.

most prevalent in the drug industry (54.2% of total observations), followed by other manufacturing (25.5%) and services (11.5%).

Panel B of Table 1 presents descriptive statistics for the model variables. The mean (median) market value of equity is \$116.77 (\$43.53) million.

Cash holdings for the sample firms are considerable, with a mean (median) ratio of cash to total assets of 62.7% (74.8%). In terms of external financing, 85% (25.2%) of firm-observations had equity (debt) financings in the current year. Since BVE* excludes cumulative losses, it primarily reflects contributed capital in the form of common stock and additional paid-in capital. All but four values of BVE* are positive.³ Current (cumulative) operating revenues are zero for 40.1% (26.4%) of the sample observations. In addition, current (cumulative) research and development expenses are greater than zero for 85.6% (87.9%) of observations.

An examination of the data reveals that the variable distributions are highly skewed, as the means for most variables are substantially different from the medians. For several variables (e.g., MVE, STKISS, DBTISS, SALES, and OPEXP), the mean is very close to or exceeds the 75th percentile value. A common statistical practice is either to exclude or winsorize the most extreme 1–2% of observations. In the present sample, these prescriptions are ineffective as there are more than a few extreme observations. To address the skewness issue, we estimate our model after performing a logarithmic transformation of all variables.⁴ This transformation is common in research on venture capital valuation which, like the present study, focuses on firms in the early stage of the life cycle (Hand, 2005). Vazquez Veira (2006) shows that the log transformation produces desirable statistical properties, such as reductions in coefficient bias, heteroscedasticity, and influence of extreme observations.

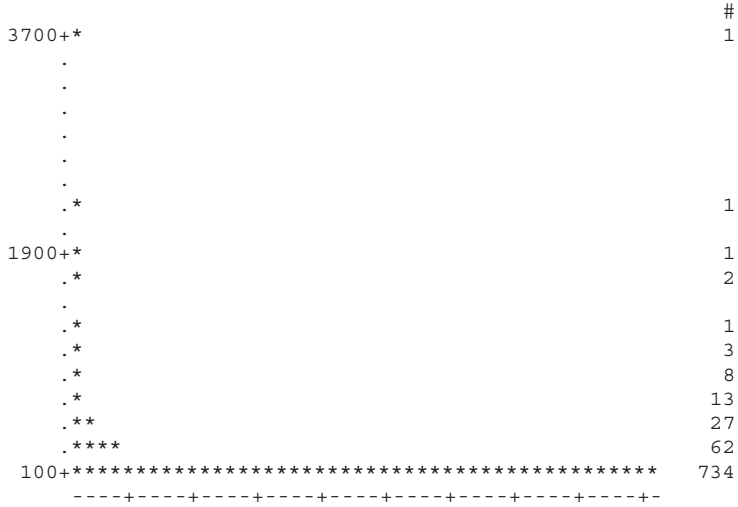
An example of the log transformation is provided in Exhibit 2. Panel A includes a histogram of the sample firms' market value of equity (MVE). The distribution is highly skewed, due to numerous extreme observations (skewness = 6.8). As a result, the Shapiro–Wilk test rejects the null hypothesis of normality. Panel B presents the distribution of $\ln(1 + \text{MVE})$. As a result of the logarithmic transformation, skewness is reduced to -0.1 and the Shapiro–Wilk test fails to reject the null hypothesis of normality.⁵

5. RESULTS

5.1. *Main Results*

The results from estimating the valuation model are presented in column A of Table 2 (for brevity, coefficient estimates for time-specific and industry-specific intercepts are not tabulated). Statistical significance is assessed based

Panel A: Histogram for market value of equity (raw data)



Panel B: Histogram for market value of equity (log-transformed data)

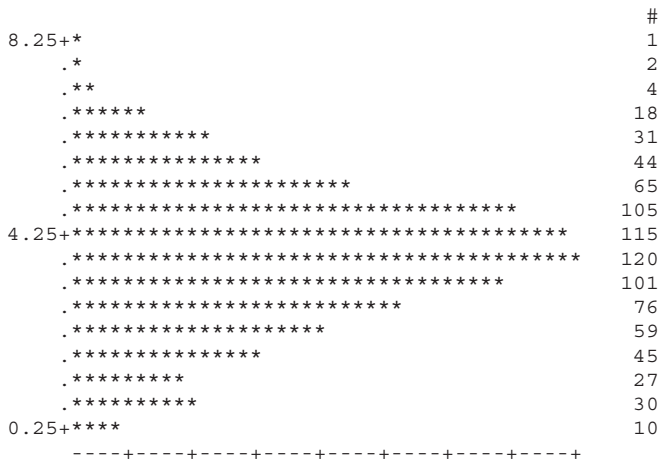


Exhibit 2. Example of Logarithmic Transformation.

Table 2. Estimation of Valuation Model (Log-Transformed Variables).

	Expected Sign	A	B
Intercept	?	1.149** (2.44)	1.132** (2.23)
YEAR	?	NR	NR
INDUSTRY	?	NR	NR
CASH	+	0.368*** (6.97)	0.417*** (7.70)
STKISS	+	0.214*** (7.18)	0.229*** (7.51)
DBTISS	+	0.051 (1.00)	0.073* (1.42)
BVE*	+	0.125* (1.49)	0.149* (1.61)
SALES	+	-0.047 (-0.80)	0.008 (0.13)
RD	+	0.193*** (2.80)	0.248*** (3.53)
OPEXP	?	0.310*** (4.16)	-
NONOP	0	-0.020 (-0.40)	-0.012 (-0.24)
HISTSALES	+	-0.026 (-0.54)	-0.055 (-1.14)
HISTRD	+	0.025 (0.42)	-0.059 (-0.98)
HISTOPEXP	?	-0.191*** (-3.21)	-
HISTNON	0	-0.011 (-0.31)	-0.014 (-0.36)
CUMOPEXP	?	-	-0.050 (-0.66)
Adj. R^2		0.669	0.658

This table reports results from estimating the full valuation model (column A). In column B, current and historical operating expenses are combined into a single variable. For brevity, estimates for industry- and time-specific intercepts are not reported (NR).

Huber-White robust t -statistics are presented in parentheses. ***/**/* denotes the coefficient is different from zero at the 0.01/0.05/0.10 level. We perform one-tailed hypothesis tests for those coefficients expected to have directional relations.

YEAR, time dummy variable; INDUSTRY, industry-specific dummy variable; CASH, cash balance at year end; STKISS, stock issuances during current year; DBTISS, debt issuances during current year; BVE*, book value of equity (less cumulative net income since inception); SALES, operating revenues for current year; RD, research and development expenses for current year; OPEXP, operating expenses for current year; NONOP, non-operating income for current year; HISTSALES, cumulative operating revenues prior to current year; HISTRD, cumulative research and development expenses prior to current year; HISTOPEXP, cumulative operating expenses prior to current year; HISTNON, cumulative non-operating income prior to current year; and CUMOPEXP, cumulative operating expenses since inception (i.e., OPEXP + HISTOPEXP).

on Huber–White robust standard errors.⁶ We perform one-tailed hypothesis tests for those coefficients expected to have directional relations.

The results for the variables capturing “other” information are consistent with expectations. The market value of equity is positively related to CASH (0.368, $t = 6.97$), consistent with the idea that the sustainability of a development stage firm is increasing in its cash holdings. In addition, the coefficient estimate on STKISS (0.214, $t = 7.18$) is also significantly positive. Thus, the ability of a firm to raise external equity signals that new investors look past reported losses and are positive about a firm’s prospects even though the value drivers are not captured by the accounting system. While the coefficient on DBTISS (0.051, $t = 1.00$) is positive, it is not significantly different from zero.

The coefficient estimate on BVE* (0.125, $t = 1.49$) is significantly positive at the 0.069 level. This is consistent with Collins et al. (1999), who find that book value may proxy for expected future earnings or liquidation value.⁷ The coefficient estimate on SALES (−0.047, $t = -0.80$) is not significantly different from zero. This finding is not consistent with Ertimur, Livnat, and Martikainen (2003), who find a relatively large market response to reported sales for firms in the early stages of the life cycle. We attribute the insignificance of SALES to the preponderance of observations with no reported operating revenues (per panel B of Table 1, 40.1% of observations have SALES = 0). In addition, the lack of persistence in sales of development stage firms is probably a contributing factor. Two of the coefficient estimates for components of current net income are significantly different from zero. The significantly positive coefficient for RD (0.193, $t = 2.80$) is consistent with a large body of evidence that research and development expenditures create economic value for firms in general (e.g., Ben-Zion, 1978; Griliches, 1981) and loss firms in particular (Joos & Plesko, 2005; Darrough & Ye, 2007). There are no clear expectations for the sign of the coefficient on OPEXP. If these expenses are seen as producing (not producing) future economic benefits, they will be positively (negatively) related to firm value. The coefficient estimate is significantly positive (0.310, $t = 4.16$). However, as discussed below, this result is misleading. Finally, the insignificance of the coefficient on NONOP (−0.020, $t = -0.40$) is not surprising, given that these items are unrelated to operating activities and often of a non-recurring nature.

With respect to our research question, three of the four coefficient estimates on historical income statement components – HISTSALES (−0.026, $t = -0.54$), HISTRD (0.025, $t = 0.42$), and HISTNON (−0.011, $t = -0.31$) – are not significantly different from zero. Only the coefficient

estimate for HISTOPEXP (-0.191 , $t = -3.21$) is significant. While the significant coefficient estimate implies that investors find historical information on operating expenses useful, there is substantial mitigating evidence. While the positive coefficient on OPEXP noted above indicates that current operating expenses are generally seen as creating value, the negative coefficient for HISTOPEXP implies that historical operating expenses are viewed as reducing value. Additional insight is gained by examining the net effect of cumulative operating expenses on equity value. Based on the sample means for OPEXP and HISTOPEXP, the on-average effect of operating expenses on equity value is not economically significant (i.e., $0.310 \times \ln(1 + 4.82) - 0.191 \times \ln(1 + 17.84) = -0.015$). To further examine this issue, we re-estimate the model after combining OPEXP and HISTOPEXP into a single variable representing cumulative operating expenses (CUMOPEXP). The results are presented in column B of Table 2. The coefficient estimate for CUMOPEXP (-0.050 , $t = -0.66$) indicates that operating expenses are unrelated to firm value. Overall, we conclude that none of the supplemental income statement disclosures required by SFAS 7 reflect information used by investors in firm valuation.

5.2. *Additional Tests*

We performed the following additional tests (results not tabulated). As noted above, the significance of BVE* is negatively impacted by the presence of CASH in the model. Accordingly, we estimated two additional model specifications. First, removing the CASH term from the model increases the coefficient on BVE* from 0.125 ($t = 1.49$) to 0.347 ($t = 3.96$), but reduces the adjusted R -squared from 0.669 to 0.643. Alternatively, subtracting CASH from BVE* reduces the coefficient on book value to 0.068, but increases its significance ($t = 1.84$) with no effect on the adjusted R -squared. In both specifications, the results with respect to the remaining variables are substantially similar to those reported.

To achieve a finer classification of firms by industry, we defined industries based on two-digit SIC codes. This resulted in 24 separate classifications compared to 7 in the main model. The results are substantially similar to those reported.

Our sample period includes a time when technology-related stocks rose to unprecedented levels during the 2 years leading up to April 2000. The effect

of this stock market “bubble” is reflected in the intercept term for 1999, as the estimate for the 1999 dummy (0.571, $t = 3.80$) is the only significantly positive YEAR term. As a further test, we examined if the “bubble” impacted our inferences by testing whether any of the coefficient estimates on accounting variables differed significantly in 1998 and/or 1999. We noted no significant differences in the coefficient estimates.

In addition to the log transformation, another means of handling extreme values is to perform a rank transformation of the variables (Iman & Conover, 1979). The results from estimating the valuation model with rank-transformed data are consistent with those based on log-transformed data.

6. SUMMARY

Pursuant to SFAS 7, development stage enterprises must make supplemental disclosures not required of operating firms. For example, development stage firms are required to report cumulative (i.e., inception-to-date) totals for each line item in the statements of income, cash flow, and stockholders' equity. The purpose of this study is to investigate whether cumulative income statement disclosures provide value-relevant information to investors.

Based on an empirical analysis of a sample of publicly traded development stage enterprises, we find that historical income statement components do not exhibit a significant association with equity values after controlling for the effects of non-financial statement information and current accounting data. In terms of current accounting data, book value of equity (particularly contributed capital), cash balance, and research and development expense, are most useful for valuation purposes. These results imply that supplemental disclosure requirements geared toward providing qualitative information about development stage firms may prove more informative than providing additional financial statement data.

NOTES

1. Willenborg (1999) uses the development stage designation to examine audit-related issues associated with small initial public offerings of common stock.

2. The terms searched were “development stage firm,” “development stage enterprise,” and “development stage company.”

3. The results after excluding these observations from the sample are substantially the same as those reported.

4. In the log transformation, all non-negative variables are remeasured as $\ln(X+1)$. Since $\ln(1) = 0$, adding 1 to each variable ensures that all logged values are non-negative. Since the natural log function is not defined for negative values, all negative variables are remeasured as $-\ln(-X+1)$.

5. Using log-transformed variables in the model estimation, only five observations have standardized residuals in excess of $|3|$ (maximum of 4.1). Thus, it is clear that the reported results are not driven by extreme values. In contrast, estimating the model using untransformed variables produces 15 standardized residuals in excess of $|3|$ (maximum of 15.6).

6. The robust standard error estimator relaxes the assumption of independence of the observations, potentially important as our regressions include multiple observations for sample firms. Clustering observations by firm produces correct standard errors even if the observations are correlated and heteroscedastic (Huber, 1967; White, 1980).

7. The significance of BVE* is negatively impacted by the presence of CASH in the model, as these variables capture some of the same information. Results from alternative specifications are discussed in Section 5.2 below.

8. To ensure uniform classification of earnings components across firms, we use the following conventions: SALES/HISTSALES are defined as in Compustat data item #12 (sales, net); RD/HISTRD are defined as in data item #46 (research and development expense); OPEX/HISTOPEX are defined as the sum of cost of goods sold (item #41), selling, general, and administrative expenses (item #189), depreciation and amortization (item #14), and income taxes (item #16) less RD/HISTRD; and NON/HISTNON are defined as the sum of interest expense (item #15), non-operating income/expense (item #61), and special items (item #17). In addition, we classify write-offs of in-process research and development as non-operating items.

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REFERENCES

- Barth, M. A., Beaver, W. H., & Landsman, W. R. (2001). The relevance of the value relevance literature for financial accounting standard setting: Another view. *Journal of Accounting and Economics*, 31, 77-104.

- Beaver, W. H., Eger, C., Ryan, S., & Wolfson, M. (1989). Financial reporting, supplemental disclosures and bank share prices. *Journal of Accounting Research*, 27, 157–178.
- Ben-Zion, U. (1978). The investment aspect of nonproduction expenditures: An empirical test. *Journal of Economics and Business*, 30, 224–229.
- Burgstahler, D. C., & Dichev, I. D. (1997). Earnings, adaptation and equity value. *The Accounting Review*, 72, 187–215.
- Cochran, R. J., Coffman, E. N., & Harless, D. W. (2004). Fair value capitalization of mortgage loan servicing rights. *Research in Accounting Regulation*, 17, 155–167.
- Collins, D., Pincus, M., & Xie, H. (1999). Equity valuation and negative earnings: The role of book value of equity. *The Accounting Review*, 74, 29–61.
- Darrrough, M., & Ye, J. (2007). Valuation of loss firms in a knowledge-based economy. *Review of Accounting Studies*, 12, 61–93.
- Eccles, R. G., Herz, R. H., Keegan, E. M., & Phillips, D. M. H. (2001). *The value reporting revolution: Moving beyond the earnings game*. New York: Wiley.
- Ertimur, Y., Livnat, J., & Martikainen, M. (2003). Differential market reactions to revenue and expense surprises. *Review of Accounting Studies*, 8, 185–211.
- Financial Accounting Standards Board (FASB). (1975). *Statement of Financial Accounting Standards No. 7: Accounting and Reporting by Development Stage Enterprises*. Stamford, CT.
- Financial Accounting Standards Board (FASB). (1978). *Statement of Financial Accounting Concepts No. 1: Objectives of Financial Reporting by Business Enterprises*. Stamford, CT.
- Griliches, Z. (1981). Market value, R&D and patents. *Economic Letters*, 7, 183–187.
- Hand, J. R. M. (2005). The value relevance of financial statements in the venture capital market. *The Accounting Review*, 80, 613–648.
- Harris, T., & Ohlson, J. (1987). Accounting disclosures and the market's valuation of oil and gas properties. *The Accounting Review*, 62, 651–670.
- Hayn, C. (1995). The information content of losses. *Journal of Accounting and Economics*, 20, 125–153.
- Huber, P. (1967). The behavior of maximum likelihood estimates under non-standard conditions. In: L. M. LeCam & J. Neyman (Eds), *Proceedings of the fifth annual berkeley symposium on mathematical statistics and probability*, Berkeley, CA: University of California Press (Vol. 1, pp. 221–233).
- Iman, R. L., & Conover, W. J. (1979). The use of the rank transformation in regression. *Technometrics*, 21, 499–509.
- International Accounting Standards Board (IASB). (2007). *Exposure draft of a proposed IFRS for small and medium-sized entities*. London, U.K.
- Jan, C. L., & Ou, J. (1995). *The role of negative earnings in the valuation of equity stocks*. Working Paper. New York University and Santa Clara University.
- Joos, P., & Plesko, G. (2005). Valuing loss firms. *The Accounting Review*, 80, 847–870.
- Kennedy, P. (1998). *A guide to econometrics* (4th ed.). Cambridge: The MIT Press.
- Klein, A., & Marquardt, K. (2006). Fundamentals of accounting losses. *The Accounting Review*, 81, 179–206.
- Leisenring, J. J., & Johnson, L. T. (1994). Accounting research: On the relevance of research to practice. *Accounting Horizons*, 8, 74–79.
- Lev, B., & Zarowin, P. (1999). The boundaries of financial reporting and how to extend them. *Journal of Accounting Research*, 37, 353–385.

- Miller, M. H., & Modigliani, F. (1961). Dividend policy, growth, and the valuation of shares. *The Journal of Business*, 34, 411–433.
- Vazquez Veira, P. J. (2006). *Price-levels regressions: Scale effect or distribution effect?* Working Paper. University of Alicante.
- Wallman, S. M. H. (1995). The future of accounting and disclosure in an evolving world: The need for dramatic change. *Accounting Horizons*, 9, 81–91.
- Wharton, D. (1970). Accounting and reporting for companies in the development stage. *The Journal of Accountancy*, 130(July), 39–52.
- White, H. (1980). A heteroscedasticity-consistent covariance matrix estimator and a direct test for heteroscedasticity. *Econometrica*, 48, 817–838.
- Willenborg, M. (1999). Empirical analysis of the economic demand for auditing in initial public offerings. *Journal of Accounting Research*, 37, 225–238.

APPENDIX. MODEL DERIVATION

The value relevance of accounting information can be assessed by examining the association between (a) the level of accounting data and the level of market value of equity, or (b) changes in accounting data and changes in market value of equity (i.e., stock returns). The returns approach focuses on the timeliness of information by examining whether investors react to a particular disclosure during a specific period of time. Since stock price at a given time reflects all returns since firm inception, the price-level approach addresses the value relevance of accounting information independent of the timing of the disclosure. The returns approach is not appropriate for examining the value relevance of cumulative income disclosures. In an efficient market, information is impounded in stock prices at the time it is released. Thus, the subsequent re-release of information in the form of cumulative data should not alter investors' expectations regarding the firm. Accordingly, we employ the price-level approach in this study.

We model the market value of equity for firm i at time t ($MVE_{i,t}$) as a function of the book value of equity ($BVE_{i,t}$), current net income ($NI_{i,t}$), and other information ($OTHER_{i,t}$)

$$MVE_{i,t} = \alpha_0 + \alpha_1 BVE_{i,t} + \alpha_2 NI_{i,t} + \alpha_3 OTHER_{i,t} + \varepsilon_{i,t} \quad (A.1)$$

We then modify Eq. (A.1) in several respects. To examine the value relevance of cumulative net income (CUMNI) disclosed pursuant to SFAS 7, we separate the book value of equity into CUMNI and BVE^* , where BVE^* equals BVE minus CUMNI. Since current income statement amounts are included in the inception-to-date totals, NI and CUMNI are highly correlated (i.e., collinear). The primary consequence of collinearity is

that the variances of the subject coefficient estimates may be large, resulting in less powerful tests (Kennedy, 1998). Accordingly, we remove current net income from CUMNI; the resulting variable measures historical net income (HISTNI) from inception through the beginning of the current year.

The OTHER term is often excluded from studies examining mature operating firms. In this regard, Hand (2005) demonstrates that the value relevance of financial statement data vis-à-vis non-financial statement information increases as firms mature. In contrast, much of the value of a firm in the pre-operating stage is attributable to potential investment opportunities that are not recognized in GAAP financial statements. Thus, the OTHER term assumes much greater importance for development stage firms. We incorporate “other” information in several ways. First and foremost, we draw on Darrough and Ye (2007), who investigate the valuation of firms that report persistent losses but remain in business over an extended period. Specifically, they find that cash holdings and the ability to obtain external financing are important value drivers for loss firms. Clearly, the ability of a firm to survive a period of unprofitable operations is increasing in the amount of cash held (CASH). The ability to raise external financing is important because of the scrutiny applied by potential investors and creditors with respect to factors such as quality of management, proprietary knowledge, etc. Darrough and Ye (2007, p. 71) assert that “obtaining external financing is a testimonial by the market about the future prospects of the firm They are likely to have assets that are not recorded in accounting but are valued by the market in the form of unrecorded ‘goodwill,’ ‘intangibles,’ or ‘hidden assets.’” Following Darrough and Ye (2007), we include separate variables for external issuances of stock (STKISS) and debt (DBTISS). Second, we include a set of annual intercept terms (YEAR) to capture time-dependent factors (e.g., interest rates and business cycle). Third, we add a set of industry-specific intercept terms, INDUSTRY (see Table 1 for industry definitions).

These modifications result in the following model

$$\begin{aligned}
 MVE_{i,t} = & \beta_0 + \beta_{0t} \sum_{t=1}^{T-1} YEAR_t + \beta_{0n} \sum_{n=1}^{N-1} INDUSTRY_i \\
 & + \beta_1 CASH_{i,t} + \beta_2 STKISS_{i,t} + \beta_3 DBTISS_{i,t} \\
 & + \beta_4 BVE_{i,t}^* + \beta_5 NI_{i,t} + \beta_6 HISTNI_{i,t} + \varepsilon_{i,t} \quad (A.2)
 \end{aligned}$$

where N is the number of industries and T is the number of years covered by the sample.

A problem with Eq. (A.2) is that it unrealistically constrains the coefficients on the components of net income to be equal. For example, [Joos and Plesko \(2005\)](#) find that, for firms with persistent losses, R&D expense is on average priced as an asset. Thus, we decompose NI into: operating revenues (SALES), research and development expense (RD), other operating expenses (OPEXP), and non-operating income (NONOP). Similarly, HISTNI is decomposed into HISTSALES, HISTRD, HISTOPEXP, and HISTNON. This results in the model presented in the text.⁸

PART II:
RESEARCH REPORTS

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PROVISION OF NON-AUDIT SERVICES AND INDIVIDUALS' INVESTMENT DECISIONS: EXPERIMENTAL EVIDENCE

Lucy F. Ackert, Bryan K. Church
and Arnold Schneider

ABSTRACT

We conduct an experiment to investigate whether concerns about an auditor's independence and reputation affect individuals' investment decisions. We examine whether the disclosure of audit and non-audit fees affects participants' investment decisions. We find that investment in clients of a less reputable auditor is reduced relative to that in other companies when non-audit fees exceed audit fees. Participants' investment in companies audited by a reputable auditor, however, is not affected by fee disclosures.

1. INTRODUCTION

This paper reports the results of an experiment designed to investigate the effect of the provision of non-audit services (NAS) on individuals' portfolio allocation decisions. A commonly held belief, espoused by the media and

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political pundits, is that when a CPA firm generates a large amount of revenues from NAS, auditor independence is impaired. In the United States, companies filing with the SEC have been required to disclose audit and NAS fees separately in proxy statements since February 5, 2001. Moreover, the Sarbanes-Oxley Act of 2002 has restricted the type of NAS that are allowed for audit clients.

The necessity of restricting NAS is still subject to debate. [Albrecht and Sack \(2000\)](#) contend that prohibitions on NAS may negatively impact accounting firms' ability to hire and retain highly qualified individuals. Research findings are mixed on the matter. We directly investigate whether the magnitude of NAS fees has an effect on individuals' investment decisions. As discussed subsequently the auditor's reputation may mediate the effect of NAS fees on individuals' perceptions of audit quality and, in turn, their investment decisions.

We focus on individual investors for three reasons: (1) this subset of the market is significant and potentially impacts security prices (e.g., [DeLong, Shleifer, Summers, & Waldman, 1989, 1990, 1991](#))¹; (2) the SEC is primarily concerned with individual investors (in terms of welfare effects); and (3) insight into individuals' behavior is necessary to refine and develop theoretical models of market outcomes (e.g., [Daniel, Hirshleifer, & Subrahmanyam, 1998; Bossaerts, 2001](#)).

We use an experimental method in our investigation, which allows us to carefully regulate the information available to participants. To enhance the richness of our setting and to promote external validity, the information presented to participants is based on real companies. In our experiment, participants make investment decisions that have real economic consequences. Participants are endowed with cash, which they allocate among a set of investment opportunities. They are paid at the end of the experiment based on the actual performance of the companies in which they invest. This approach allows us to investigate participants' actions as opposed to eliciting their beliefs or behavioral intentions. By focusing on economic decisions (i.e., those that directly impact participants' wealth), we are able to determine whether concerns about NAS have a meaningful effect on individuals' behavior.²

2. RESEARCH QUESTIONS

Archival evidence is mixed as to whether the market is concerned about the magnitude of NAS fees received by the auditor (e.g., [Frankel, Johnson, & Nelson, 2002; Ashbaugh, LaFond, & Mayhew, 2003](#)). Experimental

research also has examined factors that affect users' perceptions of auditor independence, including the auditor's provision of NAS and the relative amount of NAS fees (e.g., McKinley, Pany, & Reckers, 1985; Pany & Reckers, 1984, 1987, 1988; Lowe & Pany, 1995, 1996). Like the archival evidence, experimental findings are mixed.

Though the media and policy makers suggest that large NAS fees can result in the auditor compromising independence, investors may not necessarily be influenced by such disclosures. Other variables may be much more prominent for decision making, including current and historical stock prices, measures of financial performance, growth expectations, and analysts' recommendations. Furthermore, the media frenzy over NAS occurred in the time period surrounding Andersen's demise, meaning that large NAS fees were inextricably linked to a less reputable auditor. To properly assess the effect of NAS fees on individuals' behavior, however, the auditor's reputation must be considered.

For a reputable auditor (e.g., a large CPA firm that is not being publicly sanctioned or vilified in the media), individuals appear to have a general faith that auditors maintain independence as needed for the proper functioning of capital markets, regardless of the provision of NAS (American Accounting Association Financial Accounting Standards Committee, 2001). Audited financial statements are presumed to be reliable and, in fact, users often view the auditor's report as a guarantee that financial statements are error free (McEnroe & Martens, 1998, 2001). Our first research question is as follows.

RQ1. *For reputable auditors, are individuals' investment decisions affected by NAS fees?*

Extant research suggests that when the auditor's reputation is tainted (e.g., by regulatory action or adverse publicity), the stock market reacts negatively (e.g., Firth, 1990; Lennox, 1999; Chaney & Philipich, 2002). For a less reputable auditor, large NAS fees may create concerns for investors. Having a less reputable auditor is likely to evoke a perceptual reaction that is quite negative and, in turn, individuals may have apprehension about investing in firms associated with the auditor (Ackert, Church, & Schneider, 2006). Cognitively, the affective reaction prompts a belief that subsequently guides information search and processing (Zajonc, 1980). Other information that reinforces the belief is likely to be attended to, such that the affective reaction becomes more negative. Individual investors' may perceive that increasing NAS fees (relative to audit fees) provides a less reputable auditor with an added incentive to bias the quality and integrity of its audits.

Hence, the magnitude of NAS fees may affect individuals' investment in companies that are associated with a less reputable auditor. Our second research question is as follows.

RQ2. *Do individuals allocate money away from companies audited by a less reputable firm when non-audit fees are high (i.e., in excess of audit fees)?*

3. RESEARCH METHOD

3.1. Overview

We conduct a one-shot “investment” experiment. Participants are endowed with cash to allocate among six investment opportunities. Our experimental design includes two groups. In the first group, the amount of audit and NAS fees is withheld (referred to as NoFees). In the second group, the respective fees are disclosed (referred to as Fees). All other information is *held constant* across the two groups. A comparison allows us to determine the effect of disclosing the amount of audit and NAS fees on investor behavior.

3.2. Participants

We recruited 47 students from a medium-sized university in the United States to participate in the experiment: 24 in NoFees and 23 in Fees. The majority (60%) are business students who have taken, on average, 2.45 accounting and finance courses at the university level.³

3.3. Procedures

We conducted the experiment in June 2002, just preceding Andersen's demise. According to the instructions, participants are endowed with \$1 million in cash and asked to allocate the funds among six available stocks. Participants are given an information sheet on each investment opportunity, including a brief narrative of the firm's operations, the firm's standard industrial classification (SIC), selected financial information, and historical and current stock prices. In each case, the information sheet indicates that the firm received a clean audit report. Specific information on the amount of audit and NAS fees differs between the two groups – this is

the only information that differs between groups. For the six companies, two paid more for NAS fees than audit fees.

Participants are instructed that the information sheets were developed using data from the annual reports of actual companies for fiscal years ended in 2001. To conceal the firms' identities, five-character alphanumeric codes are used to identify the investment opportunities. To operationalize auditor reputation, we vary the auditor's identity across the six companies. Two companies are audited by a less reputable auditor (Andersen) and four by reputable auditors (other large CPA firms).

Participants are informed that two of the six firms announced an earnings restatement 3 months after fiscal year end, though they are not told which two companies. Both firms revised their earnings number downward and, in turn, experienced a negative stock price reaction: stock price 3 months after fiscal year end was below that at year end. Participants are also told that for the other four firms, stock price 3 months after fiscal year end was above that at year end.

In selecting the sample companies, we first identified two restatement firms (experiencing a stock reaction as described above). For each restatement firm, we chose two comparable firms based on two-digit SIC codes. We maintained a balance across the six firms regarding the firm's auditor and the amount paid for audit and NAS fees. The six firms used in the study, including relevant information, are identified in [Table 1](#).

Participants use the information sheets to allocate \$1 million among the six stocks. After making their investment decisions, the final prices are announced: the closing price actually observed 3 months after fiscal year end. Participants liquidate their portfolios at these prices and are paid 0.000030 times the ending portfolio value.

4. RESULTS

Initially we examine the effect of audit and NAS fee disclosures on investor behavior in companies that are audited by a reputable CPA firm.⁴ For each participant in the Fees group, we compute the difference between investment in the company with a fee ratio > 1 and average investment in the three companies with a fee ratio < 1 . We find that the difference is positive, which indicates that participants invest more per company, on average, when audit fees exceed NAS fees (the mean difference is 0.008). We compute a similar measure for each participant in the NoFees group, which serves as a benchmark to gauge investment behavior (i.e., in the

Table 1. Firms Used in the Study.

Firm ^a	SIC Code	Auditor Identity	Audit Fees (NAS Fees) ^c	Audit to NAS Fees ^d
American power conversion ^b	3600	KPMG	\$901,246 (\$1,509,294)	0.59
Genlyte group	3600	Andersen	\$336,300 (\$314,500)	1.07
Excel technologies	3600	Ernst & Young	\$130,000 (\$223,763)	0.58
CryoLife ^b	3800	Andersen	\$104,000 (\$248,000)	0.42
Zoll medical	3800	Ernst & Young	\$326,000 (\$126,354)	2.58
Varian medical systems	3800	PricewaterhouseCoopers	\$391,018 (\$638,940)	0.61

^aA five character alphanumeric code was used to denote firms in the experimental materials.

^bThese firms had earnings restatements.

^cThe NAS fees denotes non-audit service fees.

^dAudit to NAS fees refers to the ratio of audit fees to non-audit fees.

absence of fee disclosures). We find that the difference is positive and slightly larger (the mean difference is 0.050). Next, we perform a Mann–Whitney test and find that the difference between the two groups is not statistically significant ($z = -0.82$, $p = 0.412$, two-tailed test). Participants' investment in companies audited by a reputable CPA firm is not affected by fee disclosures.

Next, we examine the effect of fee disclosures on investor behavior in companies audited by a less reputable CPA firm. For each participant in the Fees group, we compute the difference between investment in the company audited by Andersen and average investment in the three companies audited by others. We find that the difference is negative, which indicates that participants invest less per company when the auditor is Andersen (the mean difference is -0.081). We compute a similar measure for each participant in the NoFees group and find that the difference is negative, but closer to 0 (the mean difference is -0.005). We perform a Mann–Whitney test to compare the two groups and find a statistically significant difference ($z = -1.822$, $p = 0.034$, one-tailed test). Participants allocate money away from the company audited by Andersen, relative to the companies audited by others, when the fee ratio is < 1 .

5. CONCLUSION

We conducted an experiment to investigate the effect of NAS fees on participants' investment decisions. Our results provide evidence that fee disclosures have an effect on investment in clients of a less reputable auditor, but not on investment in other companies. We find that investment in clients of a less reputable auditor is reduced relative to that in other companies when NAS fees exceed audit fees. In this case, participants appear to interpret the provision of NAS as creating an additional strain on the credibility of financial data. Importantly though, participants' investment in companies audited by reputable accounting firms is *not* affected by fee disclosures. Our findings suggest that as long as the auditor's reputation has not suffered, users are not overly concerned about the relative magnitude of audit to NAS fees.

Caution should be exercised in assessing the weight of evidence provided by this study due to its possible limitations. One limitation is that the study's participants were students from one university who would generally have some familiarity with investment decisions, but one might not be able to generalize to a population of more experienced investors. Another limitation relates to the type of information provided to the participants about the investment opportunities. While the information appears to have been reasonable and relevant, investors may obtain more information about companies before making investment decisions.

The Sarbanes-Oxley Act of 2002 in the United States prohibits the auditor from providing certain NAS. The necessity of this restriction, however, is unclear. Some research suggests that knowledge spillovers occur as a result of the auditor providing NAS, which may ultimately benefit the client (e.g., Simunic, 1984; Beck, Frecka, & Solomon, 1988). A restriction on NAS obviously eliminates this benefit. Our findings suggest that if the auditor's reputation has not suffered, users' perceptions are not affected by the magnitude of NAS fees. Raghunandan's (2003) recent study of shareholder ratification of the auditor is consistent with our results. He concludes that the perceptions of the vast majority of shareholders are not affected by the magnitude of NAS fees. We encourage research to further investigate the welfare implications of restrictions on NAS.

NOTES

1. Approximately 34 million individuals invest directly in the stock market (The New York Stock Exchange, 2001). Such investors may be characterized as a widely dispersed, heterogeneous group.

2. Research in economics indicates that hypothetical and real decisions do not always coincide (e.g., Holt & Laury, 2002). Research in psychology also suggests that the association between attitudes and behavior is often tenuous (Ajzen & Fishbein, 1980).

3. Libby, Bloomfield, and Nelson (2002) suggest that experiments that focus on the behavior of general or novice investors only require participants to have a basic familiarity with business and investing.

4. We investigate whether participants' perception of auditor reputation are consistent with our operationalization. Participants rated the auditors used in the experimental materials in terms of perceived quality. We perform a repeated-measures ANOVA with auditor rating (for each of four CPA firms) as the dependent measure. Planned contrasts indicate that Andersen is rated lower than each of the other auditors at $p < 0.001$. Hence, other auditors are viewed as more reputable than Andersen.

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REFERENCES

- Ackert, L. F., Church, B. K., & Schneider, A. (2006). Auditor reputation and individuals' investment decision. *Research on Professional Responsibility and Ethics in Accounting*, 11, 89–103.
- Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.
- Albrecht, W. S., & Sack, R. J. (2000). *Accounting education: Charting the course through a perilous future*. Sarasota, FL: American Accounting Association.
- American Accounting Association Financial Accounting Standards Committee. (2001). SEC auditor independence requirements. *Accounting Horizons*, 15, 373–386.
- Ashbaugh, H., LaFond, R., & Mayhew, B. W. (2003). Do non-audit services compromise auditor independence? *The Accounting Review*, 78, 611–639.
- Beck, P. J., Frecka, T. J., & Solomon, I. (1988). An empirical analysis of the relationship between MAS involvement and auditor tenure: Implications for auditor independence. *Journal of Accounting Literature*, 7, 65–84.
- Bossaerts, P. (2001). Experiments with financial markets: Implications for asset pricing theory. *American Economist*, 45, 17–32.
- Chaney, P. K., & Philipich, K. L. (2002). Shredded reputation: The cost of audit failure. *Journal of Accounting Research*, 40, 1221–1245.

- Daniel, K., Hirshleifer, D., & Subrahmanyam, A. (1998). Investor psychology and security market under- and overreactions. *Journal of Finance*, 53, 1839–1886.
- DeLong, J., Shleifer, A., Summers, L., & Waldman, R. (1989). The size and incidence of the losses from noise trading. *Journal of Finance*, 44, 681–696.
- DeLong, J., Shleifer, A., Summers, L., & Waldman, R. (1990). Noise trader risk in financial markets. *Journal of Political Economy*, 98, 703–738.
- DeLong, J., Shleifer, A., Summers, L., & Waldman, R. (1991). The survival of noise traders in financial markets. *Journal of Business*, 64, 1–19.
- Firth, M. (1990). Auditor reputation: The impact of critical reports issued by government inspectors. *RAND Journal of Economics*, 21, 374–387.
- Frankel, R. M., Johnson, M. F., & Nelson, K. K. (2002). The relation between auditors' fees for non-audit services and earnings management. *The Accounting Review*, 77, 71–105.
- Holt, C. A., & Laury, S. K. (2002). Risk aversion and incentive effects. *American Economic Review*, 92, 1644–1655.
- Lennox, C. S. (1999). Audit quality and auditor size: An evaluation of reputation and deep pockets hypotheses. *Journal of Business Finance and Accounting*, 26, 779–805.
- Libby, R., Bloomfield, R., & Nelson, M. (2002). Experimental research in financial accounting. *Accounting, Organizations and Society*, 27, 775–810.
- Lowe, D. J., & Pany, K. (1995). CPA performance of consulting engagements with audit clients: Effects on financial statement users' perceptions and decisions. *Auditing: A Journal of Practice and Theory*, 14, 35–53.
- Lowe, D. J., & Pany, K. (1996). An examination of the effects of type of engagement, materiality, and structure on CPA consulting engagements with audit clients. *Accounting Horizons*, 10, 32–51.
- McEnroe, J. E., & Martens, S. C. (1998). Individual investors' perceptions regarding the meaning of US and UK audit report terminology: "Present fairly in conformity with GAAP" and "give a true and fair view". *Journal of Business Finance and Accounting*, 25, 289–307.
- McEnroe, J. E., & Martens, S. C. (2001). Auditors' and investors' perceptions of the "expectations gap". *Accounting Horizons*, 15, 345–358.
- McKinley, S., Pany, K., & Reckers, P. M. J. (1985). An examination of the influence of CPA firm type, size, and MAS provision on loan officers' decisions and perceptions. *Journal of Accounting Research*, 23, 887–896.
- New York Stock Exchange. (2001). *Fact Book*. New York, NY: New York Stock Exchange.
- Pany, K., & Reckers, P. M. J. (1984). Non-audit services and auditor independence – A continuing problem. *Auditing: A Journal of Practice and Theory*, 3, 89–97.
- Pany, K., & Reckers, P. M. J. (1987). Within- vs. between-subject experimental designs: A study of demand effects. *Auditing: A Journal of Practice and Theory*, 7, 39–53.
- Pany, K., & Reckers, P. M. J. (1988). Auditor performance of MAS: A study of its effects on decisions and perceptions. *Accounting Horizons*, 2, 31–38.
- Raghunandan, K. (2003). Nonaudit services and share holder ratification of auditors. *Auditing: A Journal of Practice and Theory*, 22, 155–163.
- Simunic, D. A. (1984). Auditing, consulting, and auditor independence. *Journal of Accounting Research*, 22, 679–702.
- Zajonc, R. B. (1980). Feeling and thinking: Preferences need no inferences. *American Psychologist*, 35, 151–175.

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FINANCIAL REPORTING AFTER THE SARBANES-OXLEY ACT: CONSERVATIVE OR LESS EARNINGS MANAGEMENT?

Jian Zhou

ABSTRACT

One of the goals of the Sarbanes-Oxley Act (hereafter SOX) was to restore confidence in financial reporting by providing incentive for firms to report financial results that reflect the underlying economic performance. Early findings are inconclusive on the success of the Act. Cohen, Dey, and Lys (2005) show that firms engage in less earnings management post-SOX, but Lobo and Zhou (2006) find that firms report earnings more conservatively. Reporting more conservatively could be consistent with greater earnings management. We simultaneously examine conservatism using discretionary accruals and earnings management using the absolute value of discretionary accruals. Our findings suggest that firms are reporting more conservatively (i.e., reporting lower discretionary accruals), but also engaging in less overall earnings management (i.e., reporting lower absolute value of discretionary accruals). Our paper contributes to the literature by investigating the impact of SOX on financial reporting and reconciling potentially conflicting findings in other studies.

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1. INTRODUCTION

The collapse of companies such as Enron, Worldcom, and the auditing firm Arthur Andersen increased investors' concern about the integrity of financial reporting. To restore investors' confidence in financial reporting, Congress passed the Sarbanes-Oxley Act (hereafter SOX) on July 25, 2002. Given that the purpose of SOX is "to protect investors by improving the accuracy and reliability of corporate disclosures", several papers investigate how SOX has influenced financial reporting (e.g., Cohen, Dey, & Lys 2005; Jain & Rezaee, 2004; Lobo & Zhou, 2006).

Using absolute values of three different measures of discretionary accruals as well as four other measures of earnings management,¹ Cohen et al. (2005) find that there is a significant decline in earnings management after SOX. They also find real earnings management has increased in the SOX period. Using discretionary accruals from the modified Jones model and performance-adjusted modified Jones model and Basu (1997) measure of conservatism, Lobo and Zhou (2006) conclude that SOX and the resultant SEC certification requirement altered management's discretionary reporting behavior to make it more *conservative*. Jain and Rezaee (2004) analyze market-value-based, accrual-based, and earnings/returns relation measures of conservatism in the pre-SOX period and post-SOX period. They do not find that SOX induced more conservative financial reporting as determined by their three measures of accounting conservatism.

This research report summarizes our attempt to reconcile the conflicting findings between less earnings management and conservatism. Less earnings management and conservatism have different implications for financial reporting: less earnings management means that firms are reporting financial information more reflective of the underlying operating performance while conservatism means that firms deliberately report less favorable information compared to the underlying operating performance. There are potential conflicts between less earnings management and conservatism. For example, if a firm already understated its earnings before SOX and understated its earnings even more in the SOX period through discretionary accruals, this behavior is consistent with increased conservatism in Lobo and Zhou (2006), but is *not* consistent with lower levels of earnings management as documented in Cohen et al. (2005).

In contrast to previous studies using either discretionary accruals (Lobo & Zhou, 2006) or absolute value of discretionary accruals (Cohen et al., 2005), we compare *both* measures in the period prior to (hereafter pre-SOX) and the period following SOX (hereafter post-SOX).² We find that there is a

significant decline in discretionary accruals in the SOX period. This result is consistent with Lobo and Zhou (2006) that firms are reporting more *conservatively* through discretionary accruals in the SOX period. Since firms with lower discretionary accruals report lower income, these firms will also report lower net assets. Given that the systematic understatement of net assets is the hallmark of conservatism (Watts, 2003), these firms are reporting more conservatively in the SOX period. In addition, we find that there is a significant decline in the absolute value of discretionary accruals in the SOX period, which is consistent with Cohen et al. (2005) that firms are engaging in *less earnings management* in the SOX period. Thus, this paper contributes to the literature in the following ways: (1) we investigate how SOX has influenced firms' financial reporting and provides evidence that firms are engaging in less earnings management *and* are reporting more conservatively in the SOX period; (2) we reconcile the conflicting findings in Cohen et al. (2005) and Lobo and Zhou (2006). In the remainder of this paper, we synthesize the motivation, our hypotheses, the sample selection, the research design, the findings, and the conclusions.

2. BACKGROUND AND HYPOTHESES

SOX requires CEOs and CFOs to certify the "material accuracy and completeness of the financial statements" and imposes significant penalties on CEO/CFOs who knowingly violate the requirement. Thus, the potential legal liability faced by CEO/CFOs and the probability of successful prosecution has increased suggesting that risk-averse CEO/CFOs are likely to be more conservative. Prior research suggests that firms facing legal or regulatory scrutiny tend to use income-decreasing accruals.

Given the increased legal liability and legal scrutiny associated with SOX and the asymmetrical implications of aggressive financial reporting versus conservative financial reporting,³ CEO/CFOs are more likely to engage in conservative financial reporting to minimize their increased legal liability. Therefore, we posit the following:

Hypothesis 1. Firms are more conservative in their financial reporting through lower discretionary accruals in the SOX period.

The overriding purpose of SOX is "to protect investors by improving the accuracy and reliability of corporate disclosures". Thus, the goal of SOX is unbiased accounting – avoiding earnings understatements as well as earnings overstatements. Regulators have made this clear by expressing

concern with systematic understatements of earnings (e.g., “cookie jar” accounting used to smooth earnings; overstatement and immediate write-off of in process R&D in mergers and acquisitions).

Using absolute value of discretionary accruals to measure earnings management, Cohen et al. (2005) reports an increase in earnings management prior to SOX and a decrease in earnings management after SOX. Given the evidence from Cohen et al. (2005) and that SOX is really concerned about the accuracy of financial reporting instead of the aggressiveness of financial reporting, we posit the following:

Hypothesis 2. Firms engage in *less earnings management* through lower *absolute value* of discretionary accruals in the SOX period.

3. RESEARCH DESIGN

We test our hypotheses using a regression models that examine accruals before and after SOX while controlling for auditor size (Big 5/non-Big 5), firm size, and firm performance. We also include variables to capture earnings management to avoid a year over year loss, to avoid reporting negative earnings, to avoid debt covenant violation, to increase performance in advance of seasoned equity offerings, and to decrease earnings in advance of share buybacks. Discretionary accruals are estimated using the modified Jones model. We test the hypotheses using a sample of 15,852 observations as firm-year observations (7,926 in the pre-SOX period and 7,926 in the post-SOX period).

4. RESULTS

In a univariate test, we find that the mean (median) discretionary accruals are 0.0032 (0.0078) in the pre-SOX period and -0.0134 (-0.0073) in the post-SOX period. This finding is consistent with Hypothesis 1 that firms are more conservative in the SOX period. The mean (median) absolute discretionary accruals are 0.1182 (0.0737) in the pre-SOX period and 0.1011 (0.0642) in the post-SOX period. This finding is consistent with Hypothesis 2 that firms engage in less earnings management in the post-SOX period.

In multivariate tests, we also find evidence of lower discretionary accruals and lower absolute value of discretionary accruals while controlling for non-SOX related factors. These univariate and multivariate findings are

consistent with more conservatism as well as less earnings management in the post-SOX period. Interestingly, both discretionary accruals and absolute value of discretionary accruals are negatively related to auditor type, which suggests that Big 5 auditors are associated with higher levels of conservatism and less earnings management. We also find evidence that firms with strong operating cash flow report more conservatively and engage in less earnings management.

Our results hold in the following robustness checks: (1) using performance-adjusted discretionary accruals as in [Cohen et al. \(2005\)](#); (2) regressing the modified Jones model in a 3-digit SIC industry instead of a 2-digit SIC industry; (3) limiting the sample to firms with four years' observations; (4) controlling for different industries; (5) using log of total assets and log of market value to measure firm size instead of log of total sales; and (6) eliminating the extreme value of discretionary accruals.

5. SUMMARY AND CONCLUSIONS

The goal of SOX is to restore the integrity of financial reporting. This suggests that less earnings management and more unbiased accounting should be observed after SOX. The extant research literature presents potentially conflicting findings. [Cohen et al. \(2005\)](#) show that earnings management declined after the passage of SOX, while [Lobo and Zhou \(2006\)](#) find that firms are reporting more conservatively in the SOX period. We reconcile these findings by showing that discretionary accruals declined significantly post-SOX, but so did the absolute value of discretionary accruals. As a result, we find that firms report more conservatively, but also appear to engage in less earnings management in post-SOX. This is evidence that SOX has achieved the stated objectives.

NOTES

1. The three different measures of discretionary accruals are discretionary accruals estimated using the modified Jones model, the modified Jones model controlling for performance, and the modified Jones model controlling for both performance and growth, respectively. The other four measures of earnings management are the ratio of the absolute values of total accruals and cash flow from operations, the ratio of the change in accounts receivables to the change in sales, the ratio of the change in inventory to the change in sales, and the frequency of negative special items. They

also use a summary measure for earnings management by performing a principal factor analysis of the different earnings management metrics.

2. For convenience of presentation, we use SOX period and post-SOX period interchangeably in the paper.

3. Watts (1993) indicates that CEO/CFOs are more likely to be sued for aggressive financial reporting.

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REFERENCES

- Basu, S. (1997). The conservatism principle and the asymmetric timeliness of earnings. *Journal of Accounting and Economics*, 24(1), 3–38.
- Cohen, D., Dey, A., & Lys, T. (2005). *Trends in earnings management and informativeness of earnings announcements in the pre- and post-Sarbanes Oxley Periods*. Working Paper. Northwestern University.
- Jain, P. K., & Rezaee, Z. (2004). *The Sarbanes-Oxley Act of 2002 and Accounting Conservatism*. Working Paper. University of Memphis.
- Lobo, G., & Zhou, J. (2006). Did conservatism in financial reporting increase after the Sarbanes-Oxley act? Initial evidence. *Accounting Horizons*, 20(1), 57–73.
- Watts, R. (1993). *A proposal for research on conservatism*. Working Paper. University of Rochester (presented at the American Accounting Association national meeting, San Francisco, CA).
- Watts, R. (2003). Conservatism in accounting part I: Explanations and implications. *Accounting Horizons*, 17(3), 207–221.

REGULATORY CHANGE AND THE QUALITY OF COMPLIANCE TO MANDATORY DISCLOSURE REQUIREMENTS: EVIDENCE FROM BANGLADESH

Tanweer Hasan, Waresul Karim and Shakil Quayes

ABSTRACT

This study investigates the effectiveness of changes in the regulatory environment on the quality of compliance to mandatory disclosure requirements in Bangladesh. Statistical analysis of the Mandatory Disclosure Index, as developed in this paper using annual reports of the exchange-listed firms pre and post changes in the regulatory environment, shows a significant improvement in the quality of compliance during the more regulated time period. The size of the firm, the qualification of its accounting staff that prepares financial statements and the reputation of its auditing firm have significant positive impact on the quality of compliance. The analysis points to two additional important findings: lack of a firm's profitability does not seem to affect the quality of its compliance, and the performance of domestic firms are at par with foreign affiliated firms as far as the quality of the compliance is concerned. The findings reported in the present study lend support to the conventional

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notion that well packaged and timed regulations can foster sustainable development in the overall reporting environment of a country.

1. INTRODUCTION

Changes in the regulatory environment, specifically in a developing country setting, often fail to produce the desired policy outcomes. Countries across the world are now more inclined to adopting the more complete version of the international accounting standards than ever before. A key step in that process involves policy changes at the macro level with the hope of revamping the existing accounting practices of each individual firm. The revamped accounting practices are expected to induce improvement in the overall accounting standards, which ultimately results in better regulatory compliance. Like most developing countries the quality of compliance to the disclosure requirements, in general, is poor in Bangladesh (Ahmed & Nicholls, 1994; Ahmed, 1996; Karim, 1995; Parry & Groves, 1990; Parry & Khan, 1984). Up until recently companies referred to the Companies Act of 1913 for guidelines on disclosure requirements. However, the country witnessed three major changes in the regulatory environment, as it relates to corporate financial reporting, during the period 1993–1997. First, the Securities and Exchange Commission (SEC) was established in 1993. Second, Companies Act of 1994 was enacted replacing century-old Companies Act of 1913. Finally, the SEC extensively amended the 1987 Securities and Exchange Rules in 1997. While the Companies Act of 1994 spelled out the new disclosure requirements, crafted to suit the changed economic environments, the SEC focused on further formulation as well as enforcement of rules with the objective of raising the overall standard of corporate financial reporting with respect to compliance, comprehensiveness and reliability.

Against the backdrop of these major regulatory changes at the macro level it would be interesting to investigate whether the changes in accounting policies had any impact on the quality of compliance to mandatory disclosure requirements at the firm-specific level in Bangladesh. Insights might be gained into the *power* of similar policy changes. Statistical analysis of the mandatory disclosure index, as developed in this paper using annual reports of the exchange-listed firms before and after the changes in the regulatory environment, show a significant improvement in the quality of compliance to the mandatory disclosure requirements during the more

regulated time period. A multivariate analysis was conducted to investigate the firm-specific attributes that contribute to the higher quality of compliance. An interesting set of results comes out of this analysis. While firm size, the qualification of its accounting staff that prepares financial statements, and the reputation of its auditing firm seem to contribute positively to the quality of compliance, the level of profitability of the firm does not. Furthermore, the performance of the domestic firms is at par with the foreign affiliated firms as far as the quality of the compliance is concerned. These findings lend support to the conventional notion that well packaged and timed regulations can foster sustainable improvement in the overall reporting environment of a country.

The paper is organized as follows. [Section 2](#) summarizes the important features of the three major changes in the regulatory environment as they relate to the compliance requirements in Bangladesh. [Section 3](#) describes the data and the methodology used, while empirical results are reported in [Sections 4](#). Finally, [Section 5](#) contains concluding remarks.

2. MAJOR CHANGES IN THE REGULATORY ENVIRONMENT IN BANGLADESH: 1993–1997

A brief overview of the three major changes in the regulatory environment in Bangladesh during the years 1993–1997, explains the regulatory environment.

The SEC was established in 1993 under the provisions of the Securities and Exchange Ordinance 1969. The objectives of the commission as laid down in the SEC Act 1993 are to protect the interests of investors in securities, to regulate and develop securities markets, and to ensure proper issuance of securities. The commission eventually adopted the International Accounting Standards (IASs) and International Standards on Auditing (ISAs) in the preparation of financial statements and auditing procedures of listed companies. The SEC does not have any disclosure requirements but has the authority to impose penalties on companies for publishing misleading information or for not otherwise complying with general accounting and reporting requirements set out by the law.

The Companies Act 1994 is the cornerstone in the regulatory framework for companies in Bangladesh. The Act was modeled after the British Act of 1908 and was originally enacted as the Indian Companies Act 1913. The accounting provisions in the 1913 Act were “seriously out of date”

(Parry & Khan, 1984) and hence were limited to very minimum disclosure by companies. Consequently, this act was replaced in 1994 with the enactment of the Companies Act 1994. Notable new disclosures required by the 1994 Act include: disclosure of capacity and actual output; the nature of activities and any changes thereof; information and explanation on any reservation, qualification or adverse remark in the auditor's report; assets acquired on hire purchase; details of investments; debts due to associated companies; maximum of debt due by directors or officers of the company; repayment terms, nature of security and interest rate of long-term debt; restricted cash; short-term debt; sales for each class of goods; raw materials consumed; inventory details; amount of foreign exchange earned; amount spent in foreign exchange to procure management advisory services; number of non-resident shareholders; restriction on title of assets; amounts paid to the auditor for auditing and management advisory services.

The accounting provisions of the Securities and Exchange Rules (SER) of 1987 and 1997 apply to exchange-listed companies. While the SER 1987 contains the most detailed disclosure requirements, extensive amendments were made to it in 1997. Some of the most important features of the SER 1987 are the specification of detailed requirements and guidelines for the preparation of the balance sheet and the profit and loss account (income statement); the audit thereof by a chartered accountant (CA) and the format of the auditor's report; furnish copies of the annual report to the shareholders at least 14 days before the Annual General Meeting (AGM), to the stock exchange and to the government. On the other hand, the major amendments that surfaced in the SER in 1997 include: requiring listed companies to publish cash flow statements, as per the prescribed format, in their annual reports; publish half-yearly financial statements within 1 month of the close of the first half-year, audited or otherwise; requiring preparation of financial statements of listed companies in accordance with the IASs as adopted by the ICAB; requiring compliance to the ISAs as adopted by the ICAB in addition to complying with applicable local GAAP.

3. DATA AND METHODOLOGY

The years 1991 and 1998 were used to proxy for the less regulated and the more regulated environments, respectively. Out of a total of 138 companies, listed at the Dhaka Stock Exchange (DSE) in 1991, annual reports for both periods were available for only 86 companies. Consequently, the present

study is based on 86 matched pairs of companies under the less regulated (1991) and the more regulated (1998) environments in Bangladesh. All the relevant data for years 1991 and 1998 were collected from Annual Reports of the listed companies (from the DSE and SEC libraries) and the *Members Handbook* published by the ICAB (the ICAB library).

A Mandatory Disclosure Index (MDI) was developed, following the path-breaking study by Cerf (1961), by including all information items whose disclosure was mandatory under the two regulatory regimes – the less regulated environment (1991) and the more regulated environment (1998). The mandatory disclosure requirements during the two regulatory regimes were different. Therefore, the 1991 sub-sample was measured against disclosure items that were mandatory in 1991, while the 1998 sub-sample was measured against items that were mandatory in 1998. The 1991 MDI is based on the information items whose disclosure was mandatory under the Companies Act 1913 and the SER of 1987. The mandatory disclosure requirements of these two pieces of legislations were strictly limited to minimum disclosure.

Since the two sub-samples were measured against two different disclosure indices, a relative, rather than absolute, measure of disclosure was considered appropriate. Disclosure was operationally defined as the appearance of an item of information in the annual reports of the sample companies. A company was awarded a score of 1 if an item is relevant to the company and was disclosed and 0 if the item was relevant but not disclosed. The MDI for a company, under each regulatory regime, was thus the total number of mandatory items disclosed by the company divided by the total number of items from the respective disclosure indices that applies to the company. A rise (fall) in the MDI so constructed can therefore be taken to mean higher (lower) quality of compliance. This variable, MDI, is used as the dependent variable in the multivariate analysis discussed below.

The following multiple linear regression model is used to investigate the association between regulatory changes and quality of compliance to mandatory disclosure requirements in Bangladesh:

$$\text{MDI} = \alpha + \beta_1 \text{YR} + \beta_2 \text{QSA} + \beta_3 \text{AR} \\ + \beta_4 \text{LVG} + \beta_5 \text{SZE} + \beta_6 \text{MNA} + \beta_7 \text{PRFT}$$

If the quality of compliance to the mandatory disclosure requirements is better in 1998 from that of in 1991 then the coefficient of β_1 should come out with a significantly positive sign. The variable is coded 1 if the firm observation is in 1998 and 0 for 1991. Other explanatory variables were

picked based on careful reading of the relevant literature on the disclosure behavior within the context of both developed and developing countries.

The qualification of the staff accountants (QSA) employed by the firm may be seen as an important determinant of compliance to mandatory disclosure requirements because a higher degree of compliance can be expected from the financial statements prepared by professionally qualified accountants compared to those by unqualified accountants. The variable is captured by a dummy variable, which has the value of 1 if the company employed one or more chartered accountant(s) and 0 otherwise.

The reputation of the auditors of a firm can be expected to play a critical role on the quality of its compliance to financial disclosure requirements. Empirical evidence generally shows that auditors' reputation (AR) affects the audit quality and thereby, the quality of compliance. Firms auditing the exchange-listed stocks during the years 1991 and 1998 were divided into "big" and "small" firms with the size of the audit firm taken a proxy for its reputation. Audit firms having four or more chartered accountants (including partners) and affiliation of international big or non-big firms were treated as "big" or otherwise "small."

One would expect a positive association between leverage (LVG) and the quality of compliance given the constant oversight by creditors. While empirical evidence shows such a positive association in the developed country setting (Robbins & Austin, 1986), the evidence on developing countries (Chow & Wong-Boren, 1987; Ahmed & Nicholls, 1994) shows no significant association between leverage and disclosure levels.

Size (SZ) of the firm is the most widely used variable in the extant literature to explain its disclosure levels. With a few exceptions (Stanga, 1976; Spero, 1979) most empirical studies (Cerf, 1961; Singhvi & Desai, 1971; Firth, 1979; Wallace, 1988; Cooke, 1989; Wallace, Naser, & Mora, 1994; Inchausti, 1997; Owusu-Ansah, 1998) found that corporate size significantly explains disclosure levels and variability. In the present study logarithm of sales is used to proxy for firm size.

Subsidiaries of multinational firms operating in developing countries are expected to disclose more information and observe higher reporting standards compared to the domestic counterparts because they have to comply with the regulations of both the host country and the parent company's country, where standards of accounting and reporting are substantially higher in general. Ahmed and Nicholls (1994) reported multinational affiliation (MNA) of a company to be the most significant variable explaining disclosure levels in Bangladesh. The variable MNA, in the present study, is operationalized by means of a dummy variable with a

value of 1 for companies with multinational affiliation and 0 for the domestic companies.

The state of the profitability (PRFT) of the company can be expected to affect the quality of disclosure in both developed and developing countries. Empirical studies, in general, report positive association between profitability and disclosure (Cerf, 1961; Singhvi, 1967; Singhvi & Desai, 1971; Inchausti, 1997; Owusu-Ansah, 1998). In the present study the ratio of net profit to sales is taken to proxy profitability.

4. EMPIRICAL RESULTS

Utilizing Haitovsky's (1969) test failed to indicate any evidence of multicollinearity. The second test involved checking the variance inflation factors (VIF) and condition numbers, which likewise did not suggest the presence of multicollinearity. If the residuals of a regression model are found to follow certain trend instead of having a constant variance, heteroskedasticity problem is said to exist. We carried out the White's test to detect heteroskedasticity. It entails regressing the squared residuals on the explanatory variables, their squared forms and their joint products. The significance of the *F*-statistics determines if the hypothesis of homoskedasticity can be rejected, and the hypothesis of homoskedasticity could not be rejected for the model used in the present study.

Finally, the stability of the model is tested using the Chow test, which involves splitting the sample into two sub-samples and running the regressions separately for both the sub-samples. In the present study, the sample was divided into two sub-samples on the basis of the median of the variable SZE, and the regressions were run for both of them. No significant difference was found in the significant and insignificant variables across the sub-samples. Therefore, the results can be expected to remain valid across samples of companies from the same population.

There has been an increase in the number of qualified accountants employed by the firms during the more regulated environment. Also, more companies have used increased leverage and engaged auditing firms, with better reputation, for auditing their accounts while the profitability has declined during the more regulated environment.

All but two of the explanatory variables used in the model have significant and positive correlations with the dependent variable – MDI. The correlation coefficients (not reported here) are in line with the expected signs of the explanatory variables. Some pairs of explanatory variables have

significant correlations between them, for example, correlation between QSA and AR is 0.354, between QSA and SZE is 0.392, between QSA and MNA is 0.378 and finally, between QSA and PRFT is 0.251. Significant correlations also appear to exist between AR and SZE (0.235), between AR and MNA (0.459), between LVG and PRFT (-0.304), and between SZE and MNA (0.341). Significant negative correlation between leverage and profitability makes sense in the context of Bangladesh where profitability of highly leveraged firms appears to be, in general, poor. Although the presence of significant correlations between these pairs of explanatory variables tends to indicate potential multicollinearity problem in the model it may be noted here that the specific tests of multicollinearity, as reported in Section 4, do not suggest any serious multicollinearity problem.

The primary objective of the multivariate analysis was to identify the effect of the variable YR on the quality of mandatory disclosure compliance after controlling for the possible effects of relevant corporate attributes. As reported in Table 1, it was found that the year of data (YR) representing regulatory changes during 1993 to 1997, firm size (SZE), qualification of the staff accountants employed by the firm (QSA) and auditors' reputation (AR) are significantly associated with the extent of mandatory disclosure compliance. The significance of the variable YR implies that the extent or quality of compliance to mandatory disclosure requirements has increased

Table 1. Determinants of Mandatory Disclosure Requirement Compliance.

Variable	Coefficient	t-Value
Qualification of the staff accountants	0.031	1.901***
Auditors' reputation	0.043	2.602**
Year	0.089	6.794*
Leverage	-0.001	-0.925
Size	0.046	4.325*
Multinational affiliation	0.018	0.646
Profit	0.024	0.501
Intercept	0.640	28.564
Adjusted R^2	0.416	
F	18.268	

*Significance at 1% level.

**Significance at 5% level.

***Significance at 10% level.

under the more regulated environment (1998) compared to that under the less regulated environment (1991). While the reported significance of the variable QSA contradicts the findings of Parry and Groves (1990) it is in line with the evidence reported in a more recent study by Ahmed and Nicholls (1994) on Bangladesh. On the other hand, leverage (LVG), profitability (PRFT) and specifically, multinational affiliation (MNA) are found not to have any statistically significant bearing on the extent or quality of mandatory disclosure compliance. The sign and insignificance of the variable LVG, reported in the present study, is in agreement with the extant literature on developing countries. The reported lack of significance of the variables PRFT and specifically, MNA is equally important as it implies that domestic and not so profitable firms comply at the same level as multinational subsidiaries and profitable companies, respectively, under the more regulated environment. Previous studies on accounting environment in Bangladesh by Parry and Groves (1990) and Ahmed and Nicholls (1994) reported that the disclosure level of the multinational firms was consistently higher than that of the domestic firms. Therefore, the lack of significance of the variables PRFT and MNA could be taken to imply an overall sustainable improvement in financial reporting standard under the more regulated environment.

5. CONCLUDING REMARKS AND POLICY IMPLICATIONS

This study investigated the impact of changes in the regulatory environment on the extent or quality of the compliance to mandatory disclosure requirements in Bangladesh. A multivariate analysis, using firm-specific data under both the less regulated and the more regulated environments, was conducted for the purpose. The results indicate that overall the reporting environment in Bangladesh improved significantly during the more regulated years. There are several implications. From the end-user perspective it means that both analysts and investors may attach more importance to the linkage between the quality of compliance of a firm to the disclosure requirements and the size of the firm, the qualification of the staff accountants it employs and the reputation of the firm that audits it under the more regulated environment. From the perspective of the regulators it means that it is possible to lift the standards of compliance at the firm level by making policy changes at the macro level which, in turn, should be very reassuring when considering,

debating and crafting policy changes geared toward the adoption of the more complete version of the IASs and the ISAs in different countries around the globe.

REFERENCES

- Ahmed, K. (1996). Disclosure policy choice and corporate characteristics: A study of Bangladesh. *Asia Pacific Journal of Accounting*, 184–203.
- Ahmed, K., & Nicholls, D. (1994). The impact of non-financial company characteristics on mandatory disclosure compliance in developing countries: The case of Bangladesh. *The International Journal of Accounting Education and Research*, 29, 62–77.
- Cerf, A. R. (1961). *Corporate reporting and investment decisions*. Berkeley: University of California Press.
- Chow, C. W., & Wong-Boren, A. (1987). Voluntary financial disclosure by Mexican corporations. *The Accounting Review*, 62, 533–541.
- Cooke, T. E. (1989). Disclosure in the corporate annual reports of Swedish companies. *Accounting and Business Research*, 19, 113–124.
- Firth, M. (1979). The impact of size, stock market listing, and auditors on voluntary disclosure in corporate annual reports. *Accounting and Business Research*, 273–280.
- Haitovsky, Y. (1969). Multicollinearity in regression analysis: Comment. *Review of Economics and Statistics*, 51, 486–489.
- Inchausti, B. G. (1997). The influence of company characteristics and accounting regulation on information disclosed by Spanish firms. *The European Accounting Review*, 6, 45–68.
- Karim, W. (1995). *Provision of corporate financial information in Bangladesh*. Unpublished Ph.D. thesis, University of Leeds, UK.
- Owusu-Ansah, S. (1998). The impact of corporate attributes on the extent of mandatory disclosure and reporting by listed companies in Zimbabwe. *The International Journal of Accounting*, 33, 605–631.
- Parry, M. J., & Groves, R. E. (1990). Does training more accountants raise the standards of accounting in third world countries? A study of Bangladesh. In: R. S. O. Wallace, J. M. Samuels & R. J. Briston (Eds), *Research in third world accounting* (Vol. 1). London: JAI Press.
- Parry, M. J., & Khan, F. A. (1984). *Survey of published accounts in Bangladesh*, Institute of Chartered Accountants of Bangladesh (ICAB) and The United Nations Department of Technical Co-operation and Development (UNDTDC), Dhaka.
- Robbins, W. A., & Austin, K. R. (1986). Disclosure quality in government financial reports: An assessment of the appropriateness of a compound measure. *Journal of Accounting Research*, 24(2), 412–421.
- Singhvi, S. S. (1967). *Corporate disclosure through annual reports in the USA and India*. Unpublished doctoral dissertation, Graduate School of Business, Columbia University.
- Singhvi, S. S., & Desai, H. B. (1971). An empirical analysis of the quality of corporate financial disclosure. *The Accounting Review*, 129–138.
- Spero, L. L. (1979). *The extent and causes of voluntary disclosure of financial information in three European capital markets: an exploratory study*, Doctoral dissertation, Harvard University Graduate School of Business.

- Stanga, K. G. (1976). Disclosure in published annual reports. *Financial Management*, 42–52.
- Wallace, R. S. O. (1988). Corporate financial reporting in Nigeria. *Accounting and Business Research*, 18, 352–362.
- Wallace, R. S. O., Naser, K., & Mora, A. (1994). The relationship between the comprehensiveness of corporate annual reports and firm characteristics in Spain. *Accounting and Business Research*, 25, 41–53.

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THE IMPACT OF SARBANES-OXLEY ACT ON COSMETIC EARNINGS MANAGEMENT

June Y. Aono and Liming Guan

ABSTRACT

This study examines the mitigating effect of Sarbanes-Oxley Act on cosmetic earnings management, referred by Kimmunen and Koskela (2003) as earnings manipulative behavior to round earnings such that they result in an upward bias. This behavior reports income numbers to achieve key cognitive reference points represented by $N \times 10^k$. Using Benford's law, our analysis compares the distribution of second digits in reported annual net income for publicly listed US companies between a 2-year periods before and after the year 2002 when Sarbanes-Oxley Act went into effect. Our empirical results suggest that, in the 2-year period prior to the Act, there was evidence of cosmetic earnings management. However, such behavior in manipulating net income has noticeably decreased in the period after the Act. This finding is consistent with the notion that Sarbanes-Oxley Act has a deterring impact on corporate America's manipulative behavior to report earnings that achieve certain key reference points.

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INTRODUCTION

Since earnings have been regarded as one of the most important items in the financial reports to investors, analysts, boards, and senior executives, standard setters are very concerned with how earnings numbers are derived (Beaver, 1998). Following the debacle of Enron, earnings management has attracted extensive attention by regulators, accounting academics, and the investment community. A primary purpose of the Sarbanes-Oxley Act (hereafter SOX) is to protect investors by improving the accuracy and reliability of corporate disclosures and to restore investors' confidence in the integrity of companies' financial reporting (Lobo & Zhou, 2006). However, due to the recentness of SOX, there are only a handful of empirical studies examining its impact on mitigating managers' behavior in manipulating earnings.

The purpose of this study is to examine the impact of SOX on deterring firms from reporting earnings that was rounded upward. Prior to SOX, research had reported that many companies reported earnings that tended to be rounded upward (Carslaw, 1988; Thomas, 1989; Van Caneghem, 2002; Kinnunen & Koskela, 2003; Skousen, Guan, & Wetzel, 2004; Guan, Skousen, & Wetzel, 2005). Kinnunen and Koskela (2003) referred to such earnings manipulative behavior as the cosmetic earnings management. Our study complements other recent studies that examined the mitigating effect of SOX on earnings management (see Cohen, Dey, & Lys, 2005; Lobo & Zhou, 2006). These studies used various accrual models to estimate management discretion over accounting choices and found that earnings management (measured by discretionary accruals) decreased in the post-SOX period as compared to the pre-SOX period.¹ Our study differs from these studies in that we examine the rounding upward of income in an attempt to address cosmetic earnings management. One advantage of the method is that we do not have to estimate the potentially noisy abnormal accruals (Healy & Wahlen, 1999). Another appealing feature is that we can identify a large set of potential earnings manipulators without invoking specific assumptions about earnings management motivation or methods (Burgstahler & Dichev, 1997).

LITERATURE REVIEW AND DEVELOPMENT OF HYPOTHESIS

SOX was passed by Congress as a result of the corporate scandals of companies such as Enron and WorldCom. SOX was designed to improve the reliability of financial reporting by requiring CEOs and CFOs of public

companies to certify the accuracy and completeness of the financial statements. SOX also imposes severe criminal penalties, fines, and other penalties on CEO/CFOs for issuing false statements and for securities fraud. Thus, SOX is expected to result in less biased and more conservative accounting practices.

Several studies have investigated the effects of the passage of SOX on financial reporting. Lobo and Zhou (2006) found a decrease in discretionary accruals after SOX and that companies incorporate losses more quickly than gains into income after SOX than in the years preceding SOX. Hence, this suggests aggressive accounting practices declined after SOX and resulted in the improvement of the quality of earnings. Using an accrual model to measure the extent of earnings management, Cohen et al. (2005) found that earnings management increased steadily during the period preceding SOX, but declined significantly after SOX.

Thomas (1989) proposed two general reasons why managers may engage in cosmetic earnings management. One reason relates to earnings numbers as key cognitive reference points in the eyes of financial statement users. The pricing phenomenon of “\$1.99” in marketing suggests that consumers view a product priced at \$1.99 to be significantly cheaper than a product priced at \$2.00. Similarly, earnings of \$698,000 may be perceived by investors to be much lower than \$700,000. Therefore, if current income is perceived as being lower and changes the investors’ expectation of future earnings, then managers may have incentives to report income which is rounded upward. The use of budgeting, lending, and bonus and options contracts provides another reason why managers occasionally round earnings numbers upward. Due to uncertainty related to managers’ productive efforts, these contracts tend to be based on ex ante estimates and rounded to rough figures that emphasize the first digit in the contractual number (Carslaw, 1988). Thus, small changes in such contractual parameters may have a large cash flow effect (Thomas, 1989).

This study investigates the cosmetic earnings management of publicly listed US companies with the expectation that earnings are less likely to be overstated following SOX. We compare the rounding upward of earnings for the pre-SOX period compared to the post-SOX period by analyzing the proportion of zeros in the second digit of reported net income. Since an excess in the number of zeros as the second digit of reported earnings indicates an upward bias in the rounding of earnings, we expect that the magnitude of the upward bias diminishes after SOX. Thus, the primary hypothesis to be tested in this study is stated as follows:

Hypothesis. The degree of cosmetic earnings management is significantly lower after the Sarbanes-Oxley Act.

SAMPLE AND RESULTS

The sample used in this study was obtained from Standard & Poor's *Research Insight* database. The original sample included positive annual net incomes of publicly listed US firms from 2000 to 2004. We excluded net incomes with less than three digits because any truncation method used by *Research Insight* in reporting data to the nearest thousands of dollars could have unpredictable impact on our analysis of the distribution of the second digits. Our empirical analysis involved a comparison of the distribution of zero as the second digit of net incomes between the pre-SOX period (2000 and 2001) and the post-SOX period (2003 and 2004).² Observations in year 2002 (the year SOX went into effect) were excluded because this was a transition period. In order to reduce the possibility of spurious statistical inference due to different sample sizes of the pre-SOX and post-SOX periods, we limited the pre-SOX years to 2000 and 2001.³ Our final sample consisted of 10,413 observations for the pre-SOX period and 9,809 observations for the post-SOX period.⁴

If managers manipulate net income upward so that the numbers achieve certain key reference points, denoted by $N \times 10^k$, we would expect to observe more zeros in the second digit or reported income. Benford (1938) developed formulas (see Appendix) for the distribution of naturally occurring numbers. This series of formulas for digit distribution of naturally occurring numbers is known as Bendord's law. Benford's law applies to many types of data such as market values, net incomes, and daily trading on the NYSE. Nigrini (1994, 1996, 1997) also applied these formulas to population growth, taxes, and fraud detection.

Table 1 reports the results of distribution of digits 0–9 in the second place of earnings numbers for both the pre-SOX and post-SOX periods. In the pre-SOX period (years 2000 and 2001), the proportion of zeros as the second digit, expected to be 11.97 percent of the sample, is actually higher by 0.79 percent (Z -statistic = 2.45, $p = 0.014$ for two-tailed test and 0.007 for one-tailed test). The results also indicate a systematic lack of nines as the second digit of earnings. The proportion of nines, expected to be 8.5 percent of the sample, is actually lower by 0.55 percent (Z -statistic = 1.99, $p = 0.047$ for two-tailed test and 0.023 for one-tailed test). This result confirms the findings of Thomas (1989) using a sample of more recent time period. While the direction of the deviation of zeros and nines in the second place of earnings is the same as in Thomas (1989), the magnitude of the deviation is smaller. In particular, Thomas (1989, p. 776) documented an excess of

Table 1. Comparison of Deviations of Digits in Second Place of Positive Earnings between the Pre-SOX and the Post-SOX Period.

Digit	Expected Frequency (%)	Pre-SOX Period (n = 10,413)			Post-SOX Period (n = 9,809)			Change from Pre- to Post-SOX Period	
		Observed frequency (%)	Observed deviation (%)	Z-statistics	Observed frequency (%)	Observed deviation (%)	Z-statistics	Difference in deviation (%)	Z-statistics
0	11.97	12.76	0.79	2.45**	11.85	-0.12	0.36	-0.91	1.94*
1	11.39	11.09	-0.30	0.94	11.48	0.09	0.27	0.39	0.85
2	10.88	10.33	-0.55	1.78*	10.85	-0.03	0.09	0.51	1.16
3	10.43	10.53	0.10	0.32	10.85	0.42	1.36	0.32	0.72
4	10.03	10.33	0.30	1.01	9.95	-0.08	0.25	-0.38	0.88
5	9.67	9.62	-0.05	0.14	9.70	0.03	0.07	0.07	0.15
6	9.34	9.26	-0.08	0.26	9.30	-0.04	0.12	0.04	0.07
7	9.04	9.25	0.21	0.74	9.36	0.32	1.10	0.11	0.25
8	8.76	8.88	0.12	0.40	8.60	-0.16	0.55	-0.28	0.68
9	8.50	7.95	-0.55	1.99**	8.07	-0.43	1.49	0.12	0.30

Note: Pre-SOX period includes years 2000 and 2001, and post-SOX period includes years 2003 and 2004. **, *, : significant at 0.05 and 0.10, respectively.

1.09 percent of zeros and a lack of 0.76 percent of nines in the second place of earnings numbers.

The distribution of digits in the second place of earnings during the post-SOX period exhibits a noticeably different pattern from the pre-SOX period. In the post-SOX period (years 2003 and 2004), none of the digits in the second place of earnings significantly deviates from the proportions predicted by Benford's law. Thus, the observed pattern of an excess of zeros and lack of nines in the pre-SOX period does not repeat in the post-SOX period. In the post-SOX period, the deviations of zeros and nines in the second places of earnings from the expected proportions are -0.12 and -0.43 , respectively, and neither is statistically significant. This result suggests that in the 2-year period immediately after the SOX, cosmetic earnings management does not appear to be an apparent phenomenon.

The impact of the SOX on cosmetic earnings management is formally tested by a comparison of the degree of deviation of zeros and nines in the second place of earnings between the pre- and post-SOX periods. Table 1 also reports the result of the test. While the lack of nines in the second place of earnings decreases from the pre-SOX period to the post-SOX period (i.e., from 0.55 to 0.43 percent of the sample), the decrease is not statistically significant (Z -statistic = 0.30). However, there is a significant decrease in the deviation of zeros in the second place of earnings from the pre-SOX period to the post-SOX period. While there is an excess of zeros in the pre-SOX period (0.79 percent of the sample), there is a decrease of zeros in the post-SOX period (-0.12 percent of the sample). The decrease of 0.91 percent is statistically significant (Z -statistic = 1.94, $pr = 0.052$ for two-tailed test and 0.026 for one-tailed test). Overall, our findings suggest that cosmetic earnings management has changed from significantly apparent in the pre-SOX period to statistically less apparent in the post-SOX period, and that the change is mostly due to the decrease of the deviation of zeros in the second place of earnings. This lends support to our hypothesis that SOX has a deterring impact on cosmetic earnings manipulative behavior.

SUMMARY AND CONCLUSIONS

Our empirical analysis involved comparing the distribution of digits in income numbers for all publicly listed US companies between the pre-SOX period (2000 and 2001) and the post-SOX period (2003 and 2004). Consistent with prior studies, we find that cosmetic earnings management is pervasive in the pre-SOX period. Specifically, there are significantly more

zeros and fewer nines in the second place of the earnings numbers. However, such earnings manipulative behavior has largely disappeared in the post-SOX period. Further analysis shows that the decrease in the magnitude of cosmetic earnings management is largely due to the decrease of zeros in the second place of earnings. We interpret this finding as being consistent with the notion that SOX has a deterring effect on corporate America's earnings manipulative behavior to report earnings that achieve certain key reference points.

A limitation of the study is that it examines the impact of SOX on a particular type of earnings management: achieving threshold represented by $N \times 10^k$. Other types of earnings management to achieve certain thresholds include: (1) avoid losses, (2) avoid earnings decreases, and (3) avoid negative earnings surprises (see Burgstahler & Dichev, 1997; Degeorge, Patel, & Zeckhauser, 1999). While Degeorge et al. (1999) suggested that the earnings threshold hierarchy follows the above sequence, Brown and Caylor (2005) found that the hierarchy has reversed in a more recent time period and that for the period 1996–2002, avoiding negative earnings surprises is the most important earnings management incentive. Our study does not examine how cosmetic earnings management fits into the hierarchy nor does it examine whether SOX has an impact on these other types of threshold-achieving earnings manipulative behavior. It should also be noted that there are other types of earnings management. For example, income smoothing has been documented in many studies (Buckmaster, 2001). If SOX deters the cosmetic earnings management, it is likely that these other types of earnings manipulative behavior are also mitigated after the passage of the SOX. We encourage future studies to investigate these important issues.

NOTES

1. It should be noted that inferences drawn from these studies are a joint test of both incentives to manage earnings and the construct validity of the accrual models used to estimate managers' accounting discretion. Beneish (1997) provided evidence that the accrual models have low detective ability even among firms whose behavior is extreme enough (i.e., GAAP violators) to warrant the attention of regulators. Thomas and Zhang (2000) found that the accrual models are of low power in detecting earnings management. Thus, to the extent that the models fail to correctly extract the discretionary portion from total accruals, the results from studies using the accrual models should be interpreted with caution.

2. While expanding the time length in the two periods would increase the sample size, it also introduces the noises of the confounding factors. Restricting to a 2-year period may provide a reasonably clean test of the immediate impact of SOX on

earnings management because no other significant federal regulations specifically targeting the quality of financial reporting were passed during this period. The research design of the long-term effect SOX on earnings management would, at the minimum, need to control for other confounding events and/or the history effect.

3. We also conducted the same analysis for the pre-SOX period for up to 5 years, and found stronger evidence of the decrease in cosmetic earnings management in the post-SOX period. Specifically, although the magnitude of proportion of zero in the second place exhibited similar decrease from the various pre-SOX periods to the post-SOX period, the *Z*-statistics of the difference in the proportions are larger. Because larger sample size due to the longer pre-SOX windows would increase the *Z*-statistic used to measure the significance of changes in the observed proportion of digits between the two periods, the results using 2 years for the pre-SOX period are the most conservative.

4. Similar empirical analysis is also conducted on firms reporting losses. Of the 8,737 reported losses in the period of 2000 and 2001, there were 0.67 percent fewer zeros in the second place than expected (*Z*-statistic = 1.92). Of the 5,935 reported losses in the period of 2003 and 2004, there were 0.77 percent fewer zeros in the second place than expected (*Z*-statistic = 1.87). There was no significant change in the deviation of zeros in the second place of losses between the two periods. Other numbers (1–9) in the second place of losses did not exhibit significant deviation from the expected proportions in either period. This result suggests that firms reporting losses have also engaged in cosmetic earnings management. For example, when a firm's true loss was $-\$2.01$ million, the management may have rounded the loss down to, say, $-\$1.98$ million so that the loss could be perceived to be much smaller than $-\$2.01$ million (in magnitude). Such behavior did not seem to change significantly from the pre-SOX period to the post-SOX period. Thus, the deterring effect of SOX on cosmetic earnings management is observed only among firms reporting profits.

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REFERENCES

- Beaver, W. (1998). *Financial reporting: an accounting revolution* (3rd ed.). New Jersey: Prentice-Hall, Inc.
- Beneish, M. (1997). Detecting GAAP violation: Implications for assessing earnings management among firms with extreme financial performance. *Journal of Accounting and Public Policy*, 16(3), 271–309.

- Benford, F. (1938). The law of anomalous numbers. *Proceedings of the American Philosophical Society*, March, pp. 551–572.
- Brown, L., & Caylor, M. (2005). A temporal analysis of quarterly earnings thresholds: Propensity and valuation consequences. *The Accounting Review*, 80(2), 423–440.
- Buckmaster, D. (2001). *Development of income smoothing literature 1893–1998: A focus on the United States*. Amsterdam, The Netherlands: Elsevier Science, Ltd.
- Burgstahler, D., & Dichev, I. (1997). Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics*, 24(1), 99–126.
- Carlsaw, C. (1988). Anomalies in income numbers: Evidence of goal oriented behavior. *The Accounting Review*, 63(2), 321–327.
- Cohen, D., Dey, A., & Lys, T. (2005). *Trends in earnings management and informativeness of earnings announcements in the pre- and post-Sarbanes Oxley periods*. Working Paper. Northwestern University.
- DeGeorge, F., Patel, J., & Zeckhauser, R. (1999). Earnings management to exceed thresholds. *Journal of Business*, 72(1), 1–33.
- Fleiss, J. (1981). *Statistical methods for rates and proportions* (2nd ed.). Hoboken, NJ: Wiley.
- Guan, L., Skousen, C., & Wetzel, T. (2005). Unusual patterns in reported earnings: Additional evidence. *Journal of Forensic Accounting*, 6(2), 317–332.
- Healy, P. M., & Wahlen, J. M. (1999). A review of the earnings management literature and its implications for standard setting. *Accounting Horizons*, 13(4), 365–383.
- Kinnunen, J., & Koskela, M. (2003). Who is Miss World in cosmetic earnings management? A cross-national comparison of small upward rounding of net income numbers among eighteen countries. *Journal of International Accounting Research*, 2(2), 39–68.
- Lobo, G., & Zhou, J. (2006). Did conservatism in financial reporting increase after the Sarbanes-Oxley act? Initial evidence. *Accounting Horizons*, 20(1), 57–73.
- Nigrini, M. (1994). Using digital frequencies to detect fraud. *The White Paper* (April), 3–6.
- Nigrini, M. (1996). A taxpayer compliance application of Benford's law. *The Journal of the American Taxation Association*, 18(1), 72–91.
- Nigrini, M., & Mittermaier, L. (1997). The use of Benford's law as an aid in analytical procedures. *Auditing: A Journal of Practice and Theory*, 16(2), 52–67.
- Skousen, C., Guan, L., & Wetzel, T. (2004). Anomalies and unusual patterns in reported earnings: Japanese managers round earnings. *Journal of International Financial Management and Accounting*, 15(3), 212–234.
- Thomas, J. (1989). Unusual patterns in reported earnings. *The Accounting Review*, 64(4), 773–787.
- Thomas, J., & Zhang, X. (2000). Identifying unexpected accruals: A comparison of current approaches. *Journal of Accounting and Public Policy*, 19(4/5), 347–376.
- Van Caneghem, T. (2002). Earnings management induced by cognitive reference points. *British Accounting Review*, 34(2), 46–57.

APPENDIX. BENFORD'S LAW AND TEST OF DEVIATIONS

Benford (1938) demonstrated that the expected distributions of naturally occurring numbers are skewed toward the number one for the first digit

(i.e., left-most digit) and zero for the second digit. He then generalized this finding by formulating the approximated proportions or occurrence of a number as the first digit in a number series as follows:

$$\text{proportion } (a \text{ is the first digit}) = \text{Log}_{10}(a + 1) - \text{Log}_{10}(a) \tag{A.1}$$

Table A1 shows the expected occurrences of each digit in the first and second places.

Further, the expected proportion of a given number a as the first digit and the number b as the second digit can be found in the following relation:

$$\text{Log}_{10}\left(a + \frac{b + 1}{10}\right) - \text{Log}_{10}\left(a + \frac{b}{10}\right) \tag{A.2}$$

Using the above equations and summing over all possible a values for any b value gives an overall expected proportion for b as the second digit. This equation is as follows:

$$\text{proportion } (b \text{ is the second digit}) = \sum \left(\text{Log}_{10}\left(a + \frac{b + 1}{10}\right) - \text{Log}_{10}\left(a + \frac{b}{10}\right) \right) \tag{A.3}$$

The expected proportion of the numbers in the third, fourth, fifth digit, and so on can be similarly derived. This series of formulas for digit

Table A1. Expected Frequency Occurrences for Each Digit in the First and Second Places.

Digit	First Digit Expected Frequency (%)	Second Digit Expected Frequency (%)
0	–	11.968
1	30.103	11.389
2	17.609	10.882
3	12.494	10.433
4	9.691	10.031
5	7.918	9.668
6	6.695	9.337
7	5.799	9.035
8	5.115	8.757
9	4.576	8.500

Source: Nigrini and Mittermaier (1997).

distributions of naturally occurred numbers have since been known as Benford's law.

To test the null hypothesis of no managerial effort to round earnings, we compared the observed frequency for each number x in the second place of earnings numbers to the expected occurrences of the number as predicted by Benford's law (Eqs. (A.1)–(A.3)). To perform a significance test of the observed deviations from the expected proportions, a normally distributed Z -statistic has been used:

$$Z = \frac{|p - p_0| - (1/2n)}{\sqrt{(p_0(1 - p_0))/n}} \quad (\text{A.4})$$

where p and p_0 are the observed and expected proportions, respectively. The sample size is represented by n . The second term in the numerator is a correction term, and should be applied only when it is smaller than $|p - p_0|$ (Thomas, 1989). These Z -statistics would reject the null hypothesis at the 10, 5, and 1 percent level if their values exceed 1.64, 1.96, and 2.57, respectively.

In addition, a Z -statistic is used to test the difference in the deviation between the pre-SOX period and the post-SOX period. The formula used to calculate the Z -statistic is:

$$Z = \frac{|p_i - p_j| - 1/2(1/n_i + 1/n_j)}{\sqrt{\bar{p}\bar{q}(1/n_i + 1/n_j)}} \quad (\text{A.5})$$

where $\bar{q} = 1 - \bar{p}$, $\bar{p} = n_i/(n_i + n_j)$, n_i is the total observations in quarter i , n_j is the total observations in quarter j , p_i = proportion of zero as the second digit in quarter i , and p_j = proportion of zero as the second digit in quarter j . The formula is adapted from Fleiss (1981, p. 23).

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**PART III:
FEATURE**

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DEVELOPMENTS IN ACCOUNTING REGULATION: A SYNTHESIS AND ANNOTATED BIBLIOGRAPHY OF EVIDENCE AND COMMENTARY IN THE ACADEMIC LITERATURE (2005–2006)

Stephen R. Moehrle, Jennifer A. Reynolds-Moehrle
and Pamela Stuerke

ABSTRACT

In this article, we synthesize, in annotated bibliography form, recent regulation-related findings and commentaries in the academic literature. This annotated bibliography is the third in a series of bibliographies that will summarize regulation-related academic research for at least the period from 1990 forward. We reviewed academic outlets such as The Accounting Review, The Journal of Accounting Research, The Journal of Accounting and Economics, Accounting Horizons, The Journal of Accounting, Auditing and Finance, The Journal of Accounting and Public Policy, The Journal of Business, Finance & Accounting, Auditing: A Journal of Practice and Theory, and Research in Accounting Regulation. We annotate results of regulation-related research studies and key points from regulation-related commentaries.

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INTRODUCTION

In this article, we develop an annotated bibliography of research findings in the 2005–2006 academic literature as they relate to accounting regulation. We reviewed key academic outlets including *The Accounting Review*, *The Journal of Accounting Research*, *The Journal of Accounting and Economics*, *Accounting Horizons*, *The Journal of Accounting, Auditing and Finance*, *The Journal of Accounting and Public Policy*, *The Journal of Business, Finance & Accounting*, *Auditing: A Journal of Practice and Theory*, and *Research in Accounting Regulation*. While research in these journals is aimed primarily at informing the academic audience, the findings are often relevant to the current regulatory debate as well. To this end, our paper provides a convenient and detailed summary and analysis of the regulation-related literature for the benefit of practitioners and regulators. The paper is also a comprehensive literature overview for the academic audience.

Our time period for this article is 2005 and 2006. Obviously, we could not review every article that is at least tangentially related to the regulatory debate. However, we have tried to identify and discuss the articles that are particularly relevant to the most important regulatory topics during the period. For the years 2005–2006, our annotations are categorized as follows (see Table 1):

- Assessing the need for reform of the current accounting model
- The impact of Sarbanes-Oxley
- Earnings management
- Regulation G
- Financial and segment disclosures
- Individual transactions
 - Private equities
 - Share-based payments
 - Fair value measurements
 - Liabilities
 - Intangible assets and software development costs
- Audit issues
 - Audit regulation
 - Audit quality
 - Audit tenure/rotation
 - Non-audit services
 - Others
 - Auditor judgment
 - Corporate governance

Table 1. Evidence and Commentary from the Academic Literature
2005–2006 Financial Reporting Issues.

<i>Assessing the need for reform of the current accounting model</i>	
Beaver et al. (2005)	Find evidence of deteriorating usefulness of accounting-based ratios
Nobes (2005)	Attempts to explain how accounting for certain transactions became especially rule-based
Chandra (2006)	Finds that possible shortcomings in principles-based guidance can be partially remedied by providing responsibility reminders and disclosure examples
Ohlson (2006)	Proposes an alternative model of earnings measurement which emphasizes sustainable income
Barth (2006)	Describes different ways that estimates can be incorporated into financial statements to enhance usefulness
Bushman and Piotroski (2005)	Demonstrate an incentive for conservative financial reporting (enforcing accounting-based contracts) and an incentive for aggressive financial reporting (political risk)
<i>The impact of Sarbanes-Oxley</i>	
Lobo and Zhou (2006)	Find that accounting conservatism did increase post Sarbanes-Oxley
Vermeer (2005)	Documents lower income-increasing discretionary accruals with voluntary certification by the CEO/CFO
Chang et al. (2006)	Report positive abnormal returns at initial financial statement certification and subsequent increased liquidity
Jennings et al. (2006)	Find that audit firm rotation reduces perceived auditor liability for fraudulent reporting
Williams (2005)	Provides a descriptive analysis of financial experts on audit committees
Defond et al. (2005)	Find positive abnormal returns around appointments of accounting financial experts to audit committees
Krishnan (2005)	Documents a negative association between disclosed internal control weaknesses and financial experts and outside directors on the audit committee
Rama and Read (2006)	Find evidence of increased auditor conservatism in the post-SOX era
Ge and McVay (2005)	Describe factors related to disclosure of internal control weaknesses
<i>Earnings management</i>	
Ewert and Wagenhofer (2005)	Demonstrate that tighter accounting standards increase earnings quality, but also lead to increased economic transactions to manage earnings
Graham et al. (2005)	Provide evidence about financial executives and earnings management
Hunton et al. (2006)	Find that increased reporting transparency decreases earnings management

Table 1. (Continued)

Lang et al. (2006)	Find that foreign firms' reconciliations may not be comparable to US GAAP
Tucker and Zarowin (2006)	Provide evidence that stock prices better impound future earnings with income smoothing
Altamuro et al. (2005)	Find that, following SAB No. 101, earnings of affected companies are less informative
<i>Regulation G</i>	
Nichols et al. (2005)	Find that Regulation G did curb pro forma abuses but also that a significant number of companies continue to report pro forma measures that are not consistent with the spirit of Regulation G
Entwistle et al. (2006)	Find that SEC Regulation did reduce abuses related to pro forma earnings disclosures
Marques (2006)	Finds that the SEC warning led to a decrease in non-earnings financial measure disclosures, but not non-GAAP earnings measures; however, the issuance of Reg G did lead to a decrease in the propensity of firms to disclose non-GAAP earnings measures
<i>Financial and other disclosures</i>	
Bushee and Leuz (2005)	Find extensive delisting from OTC Bulletin Board in response to new SEC requirement to register and file
Bowen et al. (2005)	Document decreased emphasis on pro forma earnings in earnings releases following SEC cautionary guidance
Elliott (2006)	Finds that analysts and non-professional investors interpret earnings releases including pro forma earnings differently
Ahmed et al. (2006)	Find that disclosure and recognition are not equivalent for financial derivatives
Koonce et al. (2005)	Provide evidence about investors' interpretation of financial instrument risk disclosures
Francis et al. (2006)	Find richer information environment following Reg FD for both US firms and ADRs, suggesting that the change is due to contemporaneous events
Glover et al. (2005)	Propose an alternative financial reporting system that separately discloses known amounts and estimates
Botosan and Stanford (2005)	Find evidence that segment information improved post-SFAS 131
Ettredge et al. (2005)	Find evidence that segment information improved post-SFAS 131
Ettredge et al. (2006)	Find evidence that SFAS 131 improved the transparency of segment profit disclosures and led to more useful information about the various operating segments at firms
<i>Individual transactions</i>	
<i>Private equities</i>	
AAAFASC (2006)	Opines that the committee considering the need for private company rules is suboptimal and that the need for separate rules for private company financial reporting remains unclear

Table 1. (Continued)

<i>Share-based payment</i>	
AAAFASC (2005)	Reiterates support for recognition of expense, does not endorse single valuation methodology, and calls for enhanced disclosures
Landsman et al. (2006)	Find evidence that stock option accounting under SFAS 123R remains suboptimal because it fails to fully reflect the ongoing dilution impact of options
Beams et al. (2005)	Demonstrate that substantial discretion in assumptions remains and must be considered when interpreting stock option expense
Aboody et al. (2006)	Provide evidence that the option life, expected price volatility, and dividend yield assumptions are used to manage earnings
Bauman et al. (2005)	Find that it is income-reducing guidance more than income-increasing accruals that help stock option-granting firms to meet earnings targets
Frederickson et al. (2006)	Find that users perceive mandated expense disclosures under SFAS 123R to be more reliable
<i>Fair value measurement</i>	
AAAFASC (2005)	Expresses support for a single standard to guide fair value across accounts and support the additional disclosures called for under the proposal but call for even more; finally, the committee encourages the FASB not to eliminate historical cost information
Hodder et al. (2006)	Find evidence that net income and comprehensive income for banks fail to present a complete picture of the fair value risk exposure at the bank
Martin et al. (2006)	Synthesize the extant literature for audits of fair value emphasizing the auditor's need to understand how fair value measurements are made and the audit steps required to opine on the fair value measurements
<i>Liabilities</i>	
Botosan et al. (2005)	Summarize conceptual issues associated with the definition, recognition, derecognition, classification, and measurement of liabilities
Picconi (2006)	Finds evidence that investors did not fully incorporate off-balance-sheet pension information into stock price pre-SFAS 152
<i>Intangible assets and software development costs</i>	
Wyatt (2005)	Finds evidence that limiting managers' intangible asset recognition choices reduces the quality of the investors' information set
Mohd (2005)	Finds evidence that allowing managers to capitalize R&D costs can reduce information asymmetry

ASSESSING THE NEED FOR REFORM OF THE CURRENT ACCOUNTING MODEL

Much research examines the overriding usefulness of the current accounting model and how the model might be improved. Beaver, McNichols, and Rhie (2005) find some deterioration in the predictive ability of financial statement ratios, but the problem appears to be offset by improvements in the predictive ability of market-based ratios. Nevertheless, other researchers examined this observed usefulness deterioration in financial statements. Nobes (2005) identifies six transactions that have especially rule-based accounting guidance and suggests that the usefulness deterioration is due to the absence of principles or the use of principles that are not consistent with higher order principles. Chandra, Ettredge, and Stone (2006) find evidence that shortcomings in principle-based guidance can be offset by providing disclosure examples. Ohlson (2006) proposes an alternative accounting model emphasizing sustainable income. In his model, the balance sheet has two classes of net assets: financial and operating and the income statement reports operating cash earnings and all other expenditures. Barth (2006) suggests enhancing usefulness via the inclusion of future estimates in financial statements.

Beaver, W. H., McNichols, M. F., & Rhie, J. (2005). Have financial statements become less informative? Evidence from the ability of financial ratios to predict bankruptcy. *Review of Accounting Studies*, 10, 93–122.

The extant literature has conflicting conclusions regarding whether financial statements have become less informative. Beaver et al. (2005) provide additional evidence by investigating whether ratios calculated using financial statement amounts have become less effective at predicting bankruptcy. The authors point to three financial reporting trends that could influence the ability to predict bankruptcy using financial statement amounts: (1) FASB standards; (2) the perceived increase in discretionary reporting; and (3) the increase in unrecorded assets (e.g., intangible) and unrecorded obligations (e.g., financial derivatives). The authors apply a hazard model to a sample of 8,130 bankruptcy firm years and 74,823 non-bankruptcy firm years between 1962 and 2002.¹ The explanatory variables are a profitability variable (return on assets (ROA)), a cash flow variable (EBITDA to total liabilities (ETL)), and a leverage variable (total liabilities to total assets (LTA)). Overall, the authors find slight deterioration of the predictive ability of financial ratios due to either increased discretion or the increase in intangible assets not completely offset by improvements in FASB

standards. However, the lost predictive ability of the financial statement ratios is offset by improvements in the predictive ability of market-based ratios such as market capitalization, returns, and the standard deviation of returns.

Nobes, C. W. (2005). Rules-based standards and the lack of principles in accounting. *Accounting Horizons*, 19(1), 25–34.

The FASB is considering whether accounting rules should be more rules-based or principles-based. Nobes (2005) identifies and discusses six accounting topics for which more technical rule-based accounting guidance is applied: lease accounting, employee benefits, financial assets, government grants, subsidiaries, and equity accounting. He argues that rules arise because appropriate principles are lacking or because principles are present, but are inconsistent with higher-order accounting principles. For example, lease accounting rules predate clear definitions of assets and liabilities and equity investments are accounted for using the “principle” of significant influence that is not found in the FASB or IASB conceptual frameworks. For leasing, Nobes suggests that the existing principle, transfer of ownership risks and rewards, be replaced by the definitions of assets and liabilities. For employee benefits, Nobes suggests that protection of the financial statements from volatility be replaced by faithful representation. Nobes suggests that the “rogue principles” associated with financial assets (documentation of directors intentions) and with equity method investments (significant influence) be removed. For government grants (IFRS), Nobes suggests that the matching principle be replaced by the definition of a liability. Finally, for subsidiary accounting, Nobes suggests that the US principle of ownership be replaced by the definition of an asset and the principle of control.

Chandra, U., Ettredge, M. L., & Stone, M. S. (2006). Enron-era disclosure of off-balance-sheet entities. *Accounting Horizons*, 20(3), 231–252.

In response to heightened interest in off-balance-sheet entities (OBSE) post-Enron, the SEC issued Financial Release (FR) No. 61, which reinforced the need to follow existing SEC guidance on disclosures of liquidity and capital resources information in the MD&A section of the annual report. FR-61 discusses disclosure objectives, but does not require specific disclosures. Chandra et al. (2006) examine the response of companies to FR-61 as an indicator of the effectiveness of objectives-based guidance. They find that 42% of the firms known to have OBSEs

before the Enron debacle did not disclose the existence of their OBSEs until after Enron/FR-61. After Enron/FR-61, they observe a significant increase in OBSE disclosures. The pre-Enron/FR-61 under-disclosure suggests that objectives-based guidance can result in under-disclosure and large disparity in disclosure. The post-Enron/FR-61 findings suggest that shortcomings in principles-based guidance can be partially remedied by providing reminders of responsibility and examples of disclosure.

Ohlson, J. A. (2006). A practical model of earnings measurement. *The Accounting Review*, 81(1), 271–279.

Ohlson (2006) describes an accounting model, which emphasizes measurement of sustainable income. Ohlson believes the following suboptimal aspects of current Generally Accepted Accounting Principles (GAAP) are avoided in his model: (1) non-recurring or special charges are not a part of his model; (2) inconsistent and arbitrary capitalization is avoided (e.g., R&D expenditures and overhead expenditures in the manufacturing process); (3) arbitrary complexity is avoided (e.g., leases and pensions); and (4) ambiguity in other comprehensive income amounts is avoided.

Ohlson's model splits the balance sheet into two classes of net assets: financial assets/liabilities and net operating assets (NOA). The net financial assets are those assets and liabilities that generally approximate their cash-equivalent values. Ohlson calls these assets the cash and cash equivalents (CCE). The NOA balance represents the values of operating assets and liabilities such as inventories, prepaid and accrued expenses, unamortized property, plant, and equipment, research and development expenditures, purchased goodwill, post-retirement obligations, etc.

Operating cash earnings on the income statement is cash collected from customers less sales-sustaining expenditures. Operating cash earnings plus or minus financial revenues and expenses (including unpredictable financial items) is comprehensive cash earnings. All operating expenditures are debited to a master account and then passed on to the income statement against revenues that they helped to generate (like cost of goods sold). Operating activity-related expenditures that will benefit a future period are capitalized and expensed as sales sustaining in the future period.

Barth, M. E. (2006). Including estimates of the future in today's financial statements. *Accounting Horizons*, 20(3), 271–285.

Barth (2006) opines that it is a matter of how, not if, estimates of the future should be incorporated into financial statements. She points out that under current GAAP, most amounts in financial statements today reflect some

estimates of future outcomes. Thus, Barth seeks to advance the debate by describing different ways that estimates can be incorporated into financial statements and identifying the resulting implications.

Barth bases her discussion in the definitions of assets and liabilities provided by the Framework for the Preparation and Presentation of Financial Statements (IASCB, 1989). These definitions identify the existing assets and liabilities of the entity (e.g., “past transactions or events under the present control of the entity are recognized as assets” Barth, 2006, p. 276). Any future cash inflows or outflows related to the entity’s assets and liabilities become candidate amounts to contain future estimates. Notice that the use of the entity definition means that expectations of the future reflect the entity’s own plans and special rights or skills. Currently, a mixed model of market fair values and entity-specific fair values is used, which can make interpretation difficult.

Barth points out that some of the entity’s equity is related to expectations of future transactions. These estimates would not be in the financial statements under the current definition of an asset. Income statement amounts are a function of the chosen definitions of assets and liabilities. Barth indicates that the IASB uses a Hicksian (Hicks, 1946) view of income where income for the period equals the change in wealth for that period (i.e., the change in the net assets for the period). Amounts that are not estimated and reported can be communicated via disclosure. Also, the inputs to the process used for estimated amounts that are recognized can also be useful to users and therefore communicated via disclosures. Finally, risk assessments about future amounts can be communicated via disclosure.

THE IMPACT OF SARBANES-OXLEY

The impact of the Sarbanes-Oxley Act (SOX) on financial reporting remains a foremost topic of academic research. Lobo and Zhou (2006) examine whether financial reporting became more conservative post-SOX. Vermeer (2005) and Chang, Chen, Liao, and Mishra (2006) examine the impact that CEO/CFO certification of financial statements has had on financial reporting. Williams (2005), Defond, Hann, and Hu (2005), and Krishnan (2005) examine the impact of required financial experts on the audit committee. Jennings, Pany, and Reckers (2006) examine changed perceptions of auditor independence post-SOX. Finally, Ge and McVey (2005) examine the impact of disclosures of internal control weakness as required under SOX.

Lobo, G. J., & Zhou, J. (2006). Did conservatism in financial reporting increase after the Sarbanes-Oxley act? Initial evidence. *Accounting Horizons*, 20(1), 57–73.

Sarbanes-Oxley contains provisions that impose greater penalties on CEOs and CFOs for earnings overstatements than for earnings understatements. With this and other SEC regulation, CEOs and CFOs have greater incentives to avoid overstating earnings after Sarbanes-Oxley. Lobo and Zhou examine whether aggressive accounting declined by comparing several conservatism measures before and after the regulation. Using two approaches to measure conservatism, the authors present evidence that firms are more conservative, on average, after Sarbanes-Oxley. They find a reduction in discretionary accruals and an increase in the Basu (1997) conservatism measure. The authors importantly stress that it cannot yet be known whether the observed increase in conservatism will persist. That is, we cannot rule out that the increased conservatism is a response to the environment as a whole rather than just the new regulation. Thus, the persistence of the conservatism post-Sarbanes-Oxley remains an open question.

Vermeer, T. E. (2005). Do CEO/CFO certifications provide a signal of credible financial reporting? *Research in Accounting Regulation*, 18, 163–175.

Vermeer (2005) examines whether discretionary accruals, as a measure of earnings management, are lower for firms whose executives voluntarily certify financial statements. His results indicate that voluntary CEO/CFO certification is negatively associated with income-increasing discretionary accruals and leverage, and positively associated with total assets and operating cash flows as a percent of total assets. However, absolute discretionary accruals do not differ between firms with CEO/CFO certification and those without. These results suggest that Section 302 of Sarbanes-Oxley may be affecting earnings management.

Chang, H., Chen, J., Liao, W. M., & Mishra, B. K. (2006). CEOs'/CFOs' swearing by the numbers: Does it impact share price of the firm? *The Accounting Review*, 81(1), 1–27.

Chang et al. use an event-study methodology to examine whether the initial SOX section 302 certification by the CEOs/CFOs increased reporting credibility and reduced information asymmetry, and influenced stock price. The results of their tests provide evidence of positive abnormal returns around the certification date, and reduced bid-ask spreads following the certification date. Further, variables that significantly explain abnormal

returns at certification are SEC investigation, audit by Andersen, and aggressive revenue recognition policies. These findings suggest that Section 302 certifications have value to investors.

Jennings, M. M., Pany, K. J., & Reckers, P. M. J. (2006). Strong corporate governance and audit firm rotation: Effects on judges' independence perceptions and litigation judgments. *Accounting Horizons*, 20(3), 253–270.

Mandatory audit firm rotation was considered by legislators as a way to increase auditor independence. Ultimately, rotation of audit partners, rather than audit firms, became a requirement of SOX. Jennings et al. (2006) provide evidence that perceived auditor independence is enhanced by audit firm rotation and stronger corporate governance. They conduct an experimental study, using judges as subjects, of the effects of enhanced corporate governance and audit firm rotation on perceptions of auditor independence and liability. They manipulate the quality of corporate governance and audit partner versus audit firm rotation between subjects, and ask subjects to evaluate (1) auditor independence and (2) auditor liability in the condition of fraudulent reporting. The results of this experiment suggest that (1) perceived auditor independence is enhanced by both stronger corporate governance and audit firm rotation, and (2) in the presence of weak (but not strong) corporate governance, auditor liability for fraudulent reporting is decreased by audit firm rotation.

Williams, S. P. (2005). Meet the experts. *Accounting Horizons*, 19(4), 255–265.

Section 407 of the SOX of 2002 requires firms to disclose whether the audit committee includes a financial expert, and if not, the reason for the lack of a financial expert. Williams (2005) collects proxy statements after the effective date of this requirement for 489 firms, and provides a descriptive analysis of the financial experts. In her sample, 98% of the firms designate at least one financial expert, 38% designate more than one expert, and for 44%, the chair of the audit committee is a financial expert. Of the 821 financial experts in her sample, 28.7% were added that year and 43% were retired executives. They are predominantly male (89%), average 60 years of age, have been on the board for 6.51 years, and serve on 2.15 other boards. Professional experience of the financial experts includes various corporate executive roles, CPAs, academics, and others. These findings indicate that many companies already had financial experts on the board of directors, and suggest that initial concerns about the availability of financial experts to serve on audit committees were largely unfounded.

Defond, M. L., Hann, R. N., & Hu, X. (2005). Does the market value financial reporting expertise on audit committee boards of directors? *Journal of Accounting Research*, 43(2), 153–194.

The SOX requires companies to disclose whether the audit committee includes a financial expert. Originally, financial experts were primarily defined as accounting financial experts, but the final legislation broadens the definition to include non-accounting financial experts. Defond et al. (2005) provide evidence about the importance of accounting financial expertise for corporate governance. They collect press releases for 702 appointments of outside directors between 1993 and 2002, and examine 3-day cumulative abnormal returns to those announcements. They find a positive reaction when financial experts are appointed to the audit committee. However, when they separately examine accounting and non-accounting experts, they find a positive market reaction only for accounting financial experts, and only in the presence of strong corporate governance.

Krishnan, J. (2005). Audit committee quality and internal control: An empirical analysis. *The Accounting Review*, 80(2), 649–675.

Krishnan (2005) examines differences in audit committee quality between companies that disclose internal control weaknesses and those that do not. Her sample of companies that changed auditors between 1994 and 2000 consists of 128 companies that disclosed reportable events of internal control weaknesses, and 128 companies, matched on industry and stock exchange listing, that did not disclose reportable events. Her results indicate that internal control weaknesses are negatively related to the proportion of independent members and the number of financial experts on the audit committee. These results provide support for the current regulatory focus on audit committee composition.

Rama, D., & Read, W. (2006). Resignations by the Big 4 and the market for audit services. *Accounting Horizons*, 20(2), 97–109.

Rama and Read examine resignations of Big 4 auditors to assess auditors' claims of a more conservative policy regarding client retention after Sarbanes-Oxley (SOX). From the AuditorTrac database, the resignations of Big 4 auditors from SEC clients are collected for the years 2001 and 2003. The samples are restricted to the instances where the authors were able to verify that the auditors resigned from the annual audit (2001 – 103, and 2003 – 140). Univariate tests and logistical regressions are used to assess the relative resignation activity. The results indicate that Big 4 auditors

resigned more often in 2003, and that the 2003 resignation client firms were relatively healthier than the 2001 resignation client firms. The authors also find that in 2003 the fees charged by the successor Big 4 auditors were relatively higher than successor auditor fees in the 2001 sample. The authors interpret the results as supporting Big 4 auditors' claims of heightened conservatism in the post-SOX period.

Ge, W., & McVay, S. (2005). The disclosure of material weaknesses in internal control after the Sarbanes-Oxley act. *Accounting Horizons*, 19(3), 137–158.

The SOX requires disclosure of material weaknesses in internal control. Ge and McVay (2005) provide information about 261 companies that disclosed a total of 493 material weaknesses between August 2002 and November 2004. They document that material weaknesses are positively related to firm complexity, and negatively related to firm size and profitability. They also document that management frequently attributes material weaknesses to insufficient accounting personnel or policies.

ACCOUNTING CONSERVATISM

Accounting conservatism remains a topic of interest. Lobo and Zhou (2006) find that conservatism increased after Sarbanes-Oxley and Bushman and Piotroski (2006) demonstrate that conservatism is further enhanced by enforceable accounting-based contracts.

Bushman, R. M., & Piotroski, J. D. (2006). Financial reporting incentives for conservative accounting: The influence of legal and political institutions. *Journal of Accounting and Economics*, 42(1&2), 107–148.

Bushman and Piotroski examine whether the institutional structure of the domestic economy (e.g., the legal/judicial system, securities laws, political economy, and tax regime) affects financial reporting. They assess the degree of accounting conservatism as a function of high- and low-quality judicial systems, high and low private (enforcement through contracting incentives) and public (enforcement by motivated state official such as the SEC) enforcement of securities laws, political economies with high versus low risk of government confiscation of the firm's wealth, high versus low state ownership of the enterprise, and high and low tax burden countries.

The authors find that firms in countries with high-quality judicial systems and strong public enforcement of securities laws reflect bad news in earnings earlier than good news. However, private enforcement aspects have

negligible impact on conservatism. Firms in higher-risk political economies report good news sooner and bad news later than firms in countries with lower political risk. Findings were mixed and inconclusive regarding the impact of tax policy on financial reporting conservatism. Overall, the results suggest that a means of enforcing accounting-based contracts is an important incentive for conservative financial reporting and political risk provides incentive for more aggressive financial reporting.

EARNINGS MANAGEMENT

Earnings management research during the period produced several troubling findings. Several papers distinguish between making accounting choices to affect income (accounting earnings management) and entering into economic transactions to affect income (real earnings management). Ewert and Wagenhofer (2005) present a theoretical model that addresses the influence of accounting standards on earnings management. Their results demonstrate that earnings quality improves with tighter standards, but that improved earnings quality leads to increased real earnings management. Graham, Harvey, and Rajgopal (2005) provide evidence that financial executives focus on short-term earnings over long-term value, and prefer real earnings management with negative economic consequences to accounting earnings management. In contrast, Hunton, Libby, and Mazza (2006) provide evidence that increased reporting transparency decreases real earnings management. Lang, Raedy, and Wilson (2006) document higher levels of earnings management in cross-listed foreign firms than in US firms, suggesting that reconciled data may not be comparable to US GAAP. Finally, two articles consider the relation between earnings management and earnings informativeness. Tucker and Zarowin (2006) present results suggesting that stock price better impounds future earnings in the case of income smoothing. Altamuro, Beatty, and Weber (2005) examine the influence of Staff Accounting Bulletin No. 101, and find that earnings of affected companies are *less* informative following implementation of Staff Accounting Bulletin (SAB) No. 101.

Ewert, R., & Wagenhofer, A. (2005). Economic effects of tightening accounting standards to restrict earnings management. *The Accounting Review*, 80(4), 1101–1124.

Earnings management may take the form of either manipulating accounting numbers or entering into transactions for the primary purpose of affecting

net income (real earnings management). In their rational expectations equilibrium model, Ewert and Wagenhofer (2005) examine whether the tightness of accounting standards can affect earnings management. They assume that standard setters can affect accounting earnings management, but not real earnings management. Their model predicts that earnings quality improves with tighter accounting standards. However, improved earnings quality leads to increased real earnings management, and may increase rather than decrease total earnings management.

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

Graham et al. (2005) provide a link between academic research and the opinions and decisions of financial executives about earnings management and voluntary disclosure. They survey and interview financial executives about decision-making and reporting practices as related to meeting earnings benchmarks. The results of these surveys indicate that executives focus on earnings targets, such as the consensus forecast and same-quarter prior-year earnings, rather than cash flows, and prefer smooth earnings over volatile earnings. They make decisions that lead to achieving short-term earnings benchmarks, even when these decisions do not maximize long-term value. Further, executives are more likely to manage earnings through taking economic actions with negative consequences than through accounting choices. Finally, executives make voluntary disclosures for reputational reasons, to reduce the firm's information risk, and to improve the usefulness of mandatory disclosures, but try to avoid creating expectations about disclosures.

Hunton, J. E., Libby, R., & Mazza, C. L. (2006). Financial reporting transparency and earnings management. *The Accounting Review*, 81(1), 135–157.

Hunton et al. (2006) examine whether earnings management is less likely in a setting of increased financial transparency. Their experiment uses 62 executives in a between-subjects design that manipulates comprehensive income reporting format and whether projected earnings are greater or less than forecasted earnings. Their setting presents subjects with a portfolio of equity securities and the amount of cash needed for a required debt payment, and asks subject to decide which security to sell. Results of their experiment indicate that executives are more likely to manage earnings through selective sale of securities in the low-transparency condition. These

results provide support for improved financial reporting transparency as a means to reduce earnings management.

Lang, M., Raedy, J. S., & Wilson, W. (2006). Earnings management and cross listing: Are reconciled earnings comparable to US earnings? *Journal of Accounting and Economics*, 42(1&2), 255–283.

Foreign firms that cross-list securities on US exchanges are required to provide a reconciliation of their net income and stockholders' equity to US GAAP. Lang et al. (2006) question whether these reconciliations provide information that is fully comparable to that provided by US firms. Their sample consists of 698 cross-listed firm years from 1991 to 2002 that are matched to US firms by year, industry, and growth. Their results indicate that cross-listed firms are more likely to smooth earnings and manage earnings to a target, and are less timely in loss recognition. Further, accounting data for US firms are more value-relevant than for cross-listed firms. Their evidence implies that more earnings management may be present in accounting data of cross-listed firms, and thus, that regulators should consider whether the reconciled data provided by these firms is comparable to that of firms that follow US GAAP.

EARNINGS MANAGEMENT AND EARNINGS INFORMATIVENESS

Tucker, J. W., & Zarowin, P. A. (2006). Does income smoothing improve earnings informativeness. *The Accounting Review*, 81(1), 251–270.

Income smoothing is a form of earnings management intended to lessen variability of reported earnings. Unlike most earnings management research, which focuses on costs of earnings management, Tucker and Zarowin (2006) examine the potential benefits of allowing managers reporting discretion to communicate private information about future earnings. Using a sample of 17,019 firm-year observations from the period of 1993 to 2000, they estimate discretionary accruals, and test the relationship between discretionary accruals and the extent to which stock price impounds future earnings. Their results imply that future earnings information is impounded in stock price only in the case of income smoothing, and therefore, that financial reporting discretion allows managers to increase earnings informativeness.

Altamuro, J., Beatty, A. L., & Weber, J. (2005). The effects of accelerated revenue recognition on earnings management and earnings informativeness: Evidence from SEC staff accounting bulletin no. 101. *The Accounting Review*, 80(2): 373–401.

Staff Accounting Bulletin (SAB) No. 101 mandated changes in revenue recognition practices for firms that used accelerated revenue recognition. Altamuro et al. (2005) examine whether firms used accelerated revenue recognition to manage earnings, and whether earnings that include accelerated revenue recognition better predict future cash flows. Their sample consists of 229 firms that reported a cumulative adjustment to earnings from adoption of SAB No. 101, and a control sample matched on two-digit SIC code and asset size. They define a pre-adoption period as 1997–1999, the 3 years preceding the implementation date of SAB No. 101, and a post-adoption period as 2001–2003. Using quarterly data, they demonstrate that, in the pre-adoption period, firms in both samples are more likely to report small positive earnings than small negative earnings. In contrast, in the post-adoption period, this tendency decreases for SAB No. 101 firms, but not for control firms. They then examine the ability of earnings to predict future cash flows for the firms in both samples. They find that the ability of earnings to predict future cash flows declined for SAB-affected firms in the post-adoption period, but did not change for control firms. Finally, they examine the association between announcement-period returns and unexpected earnings, and find a smaller reaction to earnings in the post-adoption period for SAB firms, but not for control sample firms. These results, taken together, provide evidence that the requirements of SAB No. 101 decreased earnings informativeness for firms that were affected, even in the presence of earnings management.

REGULATION G

A number of papers (Nichols, Gray, & Street, 2005; Entwistle, Feltham, & Mbagwu, 2006; Marques, 2006) show that SEC intervention via Regulation G reduced the effect of potentially misleading non-GAAP performance measures. However, Nichols et al. (2005) do conclude that a significant number of companies continue to report pro forma disclosures that are not consistent with the spirit of Regulation G.

Nichols, N. B., Gray, S. J., & Street, D. L. (2005). *Pro forma adjustments to GAAP earnings: Bias, materiality, and SEC action. Research in Accounting Regulation, 18, 29–52.*

Nichols et al. (2005) use a longitudinal study over the years 1999–2004 to examine changes in pro forma reporting post-Regulation G. They examine the specific items included in pro forma adjustments and their frequency, the magnitude of the adjustments, and the stated rationale for the adjustments. They find that Regulation G did reduce the number of companies disclosing non-GAAP performance measures and has improved transparency. However, adjustments that still exist are biased to show significantly higher earnings relative to GAAP and a significant number of companies continue to make pro forma disclosures that are not consistent with the spirit of Regulation G.

Entwistle, G. M., Feltham, G. D., & Mbagwu, C. (2006). *Financial reporting regulation and the reporting of pro forma earnings. Accounting Horizons, 20(1), 39–55.*

Entwistle et al. (2006) seek to determine whether firms changed the way they use, calculate, and present pro forma earnings following SEC regulation. To this end, the authors compared the S&P 500 companies' pro forma reporting in 2001 (before SEC regulation) and 2003 (after regulation). The percentage of firms reporting pro forma measures dropped from 77 to 54%. They also find less bias in the pro forma measures after regulation. In 2001, 85% of firms that reported pro forma earnings reported an amount exceeding GAAP net income. In 2003, only 67% of firms that report pro forma earnings report an amount exceeding GAAP net income. The per share difference between pro forma earnings and GAAP earnings fell from 76 cents in 2001 to 33 cents in 2003. Last, the authors document differences in the way the companies present pro forma earnings. By 2003, pro forma earnings are 44% less likely to be reported in the press release headline. Also, discussion of pro forma earnings is 77% less likely to dominate discussion of GAAP earnings in the text of the press release. Finally, when pro forma earnings are cited in the press release headline, only three of these headlines (down from 38 in 2001) used misleading terminology that suggests the amount could be GAAP earnings. These findings suggest that abuses of pro forma earnings reporting have been reduced by SEC regulation.

Marques, A. (2006). SEC interventions and the frequency and usefulness of non-GAAP financial measures. *Review of Accounting Studies*, 11, 549–574.

The SEC twice intervened to preempt opportunistic reporting of non-GAAP performance measures. In December 2001, the SEC cautioned firms that they have an obligation not to mislead investors using the non-GAAP measures. In July 2003, the SEC issued Regulation G to further regulate and control the reporting of non-GAAP measures. Using quarterly press releases by the S&P 500 firms, Marques (2006) analyzes firms' propensity to disclose non-GAAP measures and valuation of those measures before the SEC warning, between the warning and the issuance of Regulation G, and after Regulation G. She finds that the 2001 warning led to a decrease in the propensity to disclose financial measures other than earnings, but not a decrease in the propensity to disclose non-GAAP earnings measures. However, Regulation G led to a decrease in the propensity of firms to disclose non-GAAP earnings measures. Marques also finds that, while the market did not value non-GAAP earnings information disclosure before Regulation G, post-Regulation G, the market assigns positive value to the disclosure of a non-GAAP earnings number. Overall, these findings suggest that efforts by the SEC to reduce misleading non-GAAP earnings information did reduce the frequency of such measures. Further, her findings suggest that the market appears to appropriately value non-GAAP adjustments after Regulation G.

FINANCIAL AND OTHER DISCLOSURES

A variety of topics related to financial and other disclosures were addressed by research during the period. Bushee and Leuz (2005) provide evidence about the cost of financial disclosures by investigating firms' decisions in response to the SEC's 1999 filing requirement for firms listed on the OTC Bulletin Board. Two articles consider how the inclusion of *pro forma* earnings in an earnings release influences investors. Bowen, Davis, and Matsumoto (2005) examine factors relating to the relative emphasis on pro forma earnings and GAAP earnings in earnings releases, and document decreased emphasis on pro forma earnings in press releases following the SEC's 2001 cautionary advice. Elliott (2006) conducts an experiment comparing nonprofessional investors and analysts, and finds differences in

responses to characteristics of earnings releases including pro forma earnings between these two groups. Ahmed, Kilic, and Lobo (2006) document that, for financial derivative instruments, disclosure is not a substitute for recognition. The results of an experiment conducted by Koonce, Lipe, and McAnally (2005) suggests that investors interpret the risk of financial instruments differently, depending upon (1) how the instrument was labeled, and (2) whether the exposure disclosures were loss-only or two-sided. Francis, Nanda, and Wang (2006) employ foreign firms listed as ADRs to demonstrate that Regulation Fair Disclosure (FD) may not have lead to a richer public information environment. Glover, Ijiri, Levine, and Liang (2005) proposes an alternative approach to financial reporting that separately discloses known amounts and estimated amounts. Finally, Ge and McVay (2005) provide evidence about factors related to disclosed internal control weaknesses following Sarbanes-Oxley.

Bushee, B. J., & Leuz, C. (2005). Economic consequences of SEC disclosure regulation: Evidence from the OTC bulletin board. *Journal of Accounting and Economics*, 39(2), 233–264.

Compliance with SEC reporting requirements is a costly activity. In 1999, the SEC expanded the group of firms that must meet these requirements to include all firms trading on Over-The-Counter Bulletin Board (OTCBB). This regulatory change presented 3,503 OTCBB firms that had not previously filed with a decision: delist from OTCBB or incur the costs of filing with the SEC. Bushee and Leuz (2005) examine the impact of this regulatory change on OTCBB firms. They document that 2,677 of these firms were delisted for non-compliance, implying that the costs of meeting SEC reporting requirements exceeds the benefits of being publicly traded. They compare non-compliant and newly compliant firms, and find that non-compliant firms are smaller, less leveraged, and more profitable than newly compliant firms. They also observe negative abnormal returns and reduced liquidity for non-compliant firms upon delisting, in contrast to positive returns at key dates and increased liquidity for both previously compliant and newly compliant firms.

Bowen, R. M., Davis, A. K., & Matsumoto, D. A. (2005). Emphasis on pro forma versus GAAP earnings in quarterly press releases: Determinants, SEC intervention, and market reactions. *The Accounting Review*, 80(4), 1011–1038.

In 2001, the SEC issued cautionary advice about the use of pro forma information in earnings releases. Bowen et al. (2005) examine the determinants of emphasis on GAAP and pro forma earnings, and whether the

relative emphasis changed following that cautionary advice. Their sample consists of 1,199 firm quarters of data for 208 firms that provided press releases between April 7 and June 7 2001 reporting pro forma earnings. Their results indicate that firms decreased emphasis on pro forma earnings and increased emphasis on GAAP earnings following the SEC's cautionary advice. Further, pro forma earnings are more likely to be emphasized over GAAP earnings when (1) earnings have low value-relevance, (2) pro forma earnings portray better performance, and (3) the firm experiences greater media exposure. Finally, the stock market responds to the relative emphasis in the press release.

Elliott, W. B. (2006). Are investors influenced by pro forma emphasis and reconciliations in earnings announcements? *The Accounting Review*, 81(1), 113–133.

Elliott (2006) examines how the influence of pro forma earnings characteristics differs between non-professional investors and analysts. She reports the results of an experiment in which MBA students and sell-side analysts viewed a hypothetical earnings press release, judged earnings performance, and made an investment decision. The press release was varied by whether (1) pro forma earnings were included, (2) GAAP or pro forma earnings were emphasized by management, and (3) a reconciliation of pro forma earnings to GAAP earnings was presented. Her results indicate that non-professional investors and analysts respond differently to the inclusion of pro forma earnings in an earnings release. She finds that non-professional investors are influenced by the management's emphasis, but that a quantitative reconciliation reduces this influence. In contrast, analysts were likely to view pro forma earnings as more reliable in the presence of a quantitative reconciliation.

Ahmed, A. S., Kilic, E., & Lobo, G. J. (2006). Does recognition versus disclosure matter? Evidence from value-relevance of banks' recognized and disclosed derivative financial instruments. *The Accounting Review*, 81(3), 567–588.

Ahmed et al. (2006) investigate whether disclosure is equivalent to recognition for fair values of financial derivatives. Prior to SFAS 133, fair values of derivatives were disclosed, but recognition was dependent upon the use of the derivative instrument and the accounting treatment of the underlying asset or liability. Thus, it was possible for firms to hold both recognized and unrecognized but disclosed derivatives. SFAS 133, however, requires recognition of fair values. Ahmed et al. use a sample of bank

holding companies to examine the value-relevance of recognized and disclosed fair values. They find that, in the period before SFAS 133, recognized fair values are value-relevant, but disclosed fair values are not. They also compare the value-relevance of disclosed derivatives (pre-SFAS 133) to that of recognized derivatives following implementation of SFAS 133, and find additional evidence that recognized derivatives are valued, but that disclosed derivatives are not. These results suggest that, for financial derivatives, disclosure is not a substitute for recognition.

Koonce, L., Lipe, M. G., & McNally, M. L. (2005). Judging the risk of financial instruments: Problems and potential remedies. *The Accounting Review*, 80(3), 871–895.

Koonce et al. (2005) conduct a series of experiments about investors' risk judgments of financial instruments, using MBA students as subjects. The results from these experiments indicate judgment problems arising from financial instrument disclosures. First, when subjects were presented with three equivalent financial instruments with different labels, they evaluated the risk of these instruments as different. This labeling effect persisted when the subjects were presented with additional economic information. Second, when presented with disclosures that describe only loss exposures, subjects' inferred that undisclosed potential gains were smaller than the disclosed loss exposure. Unlike the labeling effect, this problem was mitigated by additional information, specifically providing two-sided disclosures. This second judgment problem has particular implications for disclosure regulation, as current GAAP requires the disclosure of financial instrument loss-exposure, and permits, not requires, disclosure of potential gains. The results of this study suggest that loss-only disclosure is misleading to financial statement users.

Francis, J., Nanda, D., & Wang, X. (2006). Re-examining the effects of regulation fair disclosure using foreign listed firms to control for concurrent shocks. *Journal of Accounting and Economics*, 41(3), 271–292.

Regulation Fair Disclosure (Reg FD) was intended to level the informational playing field between analysts and investors. While all publicly traded US firms are subject to Reg FD, foreign firms that trade as ADRs on US exchanges are exempt. Francis et al. (2006) compare the changes in public information and analyst information metrics for US firms and ADRs. Their results suggest that the previously documented richer public information environment subsequent to the implementation of Reg FD is related to other events in the post-Reg FD period. Their results also suggest

that the decrease in informativeness of analyst reports is attributable to Reg FD.

Glover, J. C., Ijiri, Y., Levine, C. B., & Liang, P. J. (2005). Separating facts from forecasts in financial statements. *Accounting Horizons*, 19(4), 267–282.

Glover et al. (2005) propose an extension to current financial reporting that separately presents known amounts and amounts that are estimates that would clarify the use of estimates in financial reporting. They define as “facts” any transaction with no remaining uncertainty, or no uncertainty about amounts, and all other transactions as “forecasts.” Then they describe a reporting system that separately reports these facts and forecasts, as well as total amounts that are comparable to current GAAP. They suggest that this separate disclosure of estimates may allow financial statement users to better understand the varying degrees of reliability that currently exist in financial reporting.

SEGMENT DISCLOSURES

Botosan, C. A., & Stanford, M. (2005). Managers’ motives to withhold segment disclosures and the effect of SFAS no. 131 on analysts’ information environment. *The Accounting Review*, 80(3), 751–771.

SFAS 131 increased the amount of information that companies must provide about significant operating segments. Botosan and Stanford (2005) examine managers’ incentives for withholding segment information under the former guidance (SFAS 14) and the impact that SFAS 131 had on segment disclosures. The authors use a sample of firms that reported only one operating segment under SFAS 14, but reported multiple segments upon adoption of SFAS 131. These firms are used because it is likely that these firms were taking advantage of discretion allowed under SFAS 14 to avoid reporting segment information.

The authors find evidence that the concealed segments did operate in a less competitive industry than the firm’s primary industry. This is consistent with firms using discretion in SFAS 14 to avoid reporting segment information for segments where excess profits are more likely to be earned. The authors also find significant increases both in analysts’ consensus and analysts’ uncertainty for the firms in the change sample relative to the firms in the control sample. The authors interpret this finding as evidence that analysts rely less on costly private information when they receive enhanced

public information via enhanced segment disclosures. This latter finding was sensitive to the subset of firms examined as the result disappeared in a more lengthy time series test involving fewer firms. Overall, the findings suggest that segment information did improve following SFAS 131.

Ettredge, M. L., Kwon, S. Y., Smith, D. B., & Zarowin, P. A. (2005). The impact of SFAS no. 131 business segment data on the market's ability to anticipate future earnings. *The Accounting Review*, 80(3), 773–804.

Ettredge et al. (2005) conduct an archival study to analyze the ability of stock market participants to predict future earnings before and after firms' adoption of SFAS 131. The authors use a pre-131 period of December 1995 through November 1998 and a post-131 period of December 1999 through November 2002. In all, the sample consists of 6,827 firms and 21,698 firm years. They divided the firms into firms that reported multiple segments before and after SFAS 131, firms that reported a single segment before but multiple segments after adoption, and firms that reported a single segment both before and after adoption of SFAS 131. The authors expect the firms in the latter group to be least affected by SFAS 131 adoption. The authors' proxy for the market participants' ability to predict future earnings is the future earnings response coefficient (FERC), which is estimated by regressing current year stock returns against 1 year forward earnings and control variables. If SFAS 131 allows users to better predict future earnings, higher FERCs should be found after SFAS 131 is adopted. First, they find that firms that reported multiple segments before SFAS 131 experienced an increase in the FERC following adoption. Second, they find that many firms went from single to multiple segment disclosers, and this group of firms also experienced an increase in the FERC following SFAS 131. Lastly, they find no increase in the FERC for firms that reported a single segment both before and after adoption of SFAS 131. These findings suggest that SFAS 131 generated its desired outcomes of more segments disclosed and more meaningful segment information.

Ettredge, M. L., Kwon, S. Y., Smith, D. B., & Stone, M. S. (2006). The effect of SFAS no. 131 on the cross-segment variability of profits reported by multiple segment firms. *Review of Accounting Studies*, 11, 91–117.

The authors examine whether SFAS 131 improved disclosure in multiple segment firms by changing disclosure category from the industry-based to management-based. The authors argue that SFAS 131 discourages

aggregation of segments with different economic characteristics. If the changes to GAAP were successful, an increase in the variability of cross-segment reported profits should be observed for firms that reported multiple segments both before and after adoption of SFAS 131. The authors begin by showing that firms that reported multiple segments both before and after are more diverse, profitable, and complex. Interestingly, these multiple segments before and after firms are also less dependent on external financing. The results suggest that, consistent with the intent of the guidance, SFAS 131 did increase information about operating diversity. After SFAS 131, these firms reported more about segment profitability and increased the transparency of segment profit disclosures. The authors also find evidence that managers continue to find ways to conceal differences in segment profitability that could bring competition. Finally, the authors find that multiple segment firms with more external financing needs disclose more about differences in operating profitability after adoption of SFAS 131. These results suggest that SFAS 131 successfully increased the amount of useful information about the various management-based operating segments at firms.

FINANCIAL REPORTING ISSUES: SPECIFIC TRANSACTIONS

Developments in financial reporting were extensively researched. The American Accounting Association's (AAA) Financial Accounting Standards Committee (FASC) opined on several issues including private equities, share-based payments, and fair value measurements. Regarding share-based payments, Landsman, Peasnell, Pope, and Yeh (2006) find that stock option accounting under SFAS 123R, while an improvement, remains suboptimal. Beams, Amoruso, and Richardson (2005) and Aboody, Barth, and Kasznik (2006) conclude that volatility assumptions under SFAS 123R cause expense interpretation challenges. Further, Bauman, Braswell, and Shaw (2005) find evidence that it is management guidance rather than accounting accruals that help stock option granting firms to meet analysts' earnings targets. Frederickson, Hodge, and Pratt (2006) provide evidence that users perceive the mandated option expense recognition to be more reliable. Regarding fair value measurements, Hodder, Hopkins, and Wahlen (2006) show that bank fair value disclosures present an incomplete picture of the fair value risk exposure and Martin, Rich, and Wilks (2006) provide a

synthesis of fair value auditing research. Botosan, Koonce, Ryan, Stone, and Wahlen (2005) examine conceptual issues and research evidence related to liabilities. Picconi (2006) investigates the measurement of one large liability – defined benefit pension obligations. Regarding intangible assets, Wyatt (2005) finds that limiting managerial recognition choices reduces the quality of the user’s information set. Similarly, Mohd (2005) shows that allowing the capitalization of R&D costs can reduce information asymmetry. Finally, Botosan and Stanford (2005), Ettredge et al. (2005), and Ettredge et al. (2006) examine the impact of SFAS 131, which relates to segment reporting. The three studies find consistent evidence that SFAS 131 enhanced segment reporting and increased the amount of useful segment information available to financial statement users.

Private Equities

American Accounting Association’s (AAA) Financial Accounting Standards Committee (FASC). (2006). Financial accounting and reporting standards for private entities. *Accounting Horizons*, 20(2), 179–194.

The International Accounting Standards Board (IASB), the Financial Accounting Standards Board (FASB), and a task force of the [American Institute of Certified Public Accountants \(AICPA\)](#) are all studying whether a separate set of generally accepted accounting principles should be established for smaller non-publicly traded businesses. This is colloquially known as the “Big GAAP/Little GAAP” debate. The AICPA task force issued a report entitled “Private Company Financial Reporting.” The FASB asked the AAAFASC to comment on the report. The AAAFASC developed five primary conclusions.

First, the committee suggests that the need for such regulation is unclear in countries where market forces shape private company reporting practices (e.g., US). If separate GAAP is to be created, a separate set of foundation principles will be required to guide the development of standards for private company financial reporting. Second, the committee addresses the motivation for separate standards pointing out that some argue that the stewardship objective dominates the valuation objective for private companies. The committee expresses uncertainty regarding the sufficiency of arguments for separate private company GAAP based on differential user needs. Third, the committee reinforces that market forces are a key driver in the process of developing successful standards. To this end, a market-driven standard-setting body might be the most effective alternative. Such a body

would likely be more responsive to users' needs, less affected by lobbying, and might even create healthy competition for private company standards. Fourth, the committee expresses concerns about the research underlying the task force report. The quality of the survey data may be compromised by response bias and context-induced measurement errors. The committee also feels the recommendations are not adequately linked to the survey results. Fifth, the committee implores the IASB to cautiously respond to requests by private companies for GAAP exceptions.

Share-Based Payment

AAAFASC. (2005). Response to the FASB's exposure draft on share-based payment: An amendment of FASB statements No. 123 and No. 95. *Accounting Horizons*, 19(2), 101–114.

In March 2004, the FASB issued an Exposure Draft entitled "Share-Based Payment: An Amendment of FASB's No. 123 and No. 95." The exposure draft called for the expensing of the fair value of employee stock options at the date they are granted. In cases that require option value estimation, the exposure draft indicates a preference for a lattice model such as the binomial options pricing model. The committee reiterates its support for the recognition of expense and encourages the FASB not to succumb to pressures it faces to weaken the standard. Regarding the value estimation, the committee does not believe that a single option-pricing model or methodology should be specified. In the case of options that are settled in cash, the committee views these as liabilities that should be reported at the fair value of the obligation at the end of each reporting period. The committee encourages the FASB to mitigate grant date accounting shortcomings by calling for enhanced disclosure including the fair value of the stock options outstanding at the end of each reporting period, a comparison of grant date fair value to settlement date intrinsic value for all options exercised or expired during the period, and sensitivity analysis of the effect of important valuation model assumptions and estimates.

Landsman, W. R., Peasnell, K. V., Pope, P. F., & Yeh, S. (2006). Which approach to accounting for employee stock options best reflects market pricing? *Review of Accounting Studies*, 11, 203–245.

Landsman et al. (2006) evaluate the accounting for employee stock options from a theoretical and an empirical perspective. The authors consider four

treatment alternatives: the intrinsic value approach (APB 25 approach), the recognition of expense (SFAS 123R approach), the recognition of an intangible asset and subsequent amortization (the 1993 FASB Exposure Draft approach), and the recognition of an asset, amortization of the asset, and the recognition of a liability that is marked to market (the asset and liability approach).

From a theoretical standpoint, the authors find support for the asset and liability approach. The APB 25 and the Exposure Draft approaches result in overestimates of the value of current shareholder equity. Specifically, when these approaches are used, Residual Income Valuation is shown to be the value of the shareholders equity plus the value of the employee stock options. Neither of these methods accounts for the ongoing employee stock option dilution effects. The SFAS 123R approach also leads to overstated equity value under Residual Income Valuation although the overestimation is not as large as under the APB 25 and the Exposure Draft approaches. The overvaluation is the value of the existing equity plus a portion of the value of the employee stock options. Only the asset and liability approach reflects all gains and losses attributable to existing shareholders (super clean surplus accounting).

Next, the authors examine how well the four approaches reflect actual market pricing of the shares. The authors estimate the book value and net income that would be reported under the respective methods and then value the shares of the S&P 500 firms from 1997 to 2001 under the Residual Income Valuation approach. They expect that the Asset and Liability approach will yield the lowest prediction error, followed by the Exposure Draft, the SFAS 123R method, and the APB 25 method. Their empirical findings largely support these predictions. Overall, these findings suggest that stock option accounting under SFAS 123R remains suboptimal because it fails to fully reflect the ongoing dilution effects of employee stock options.

Beams, J. D., Amoruso, A. J., & Richardson, F. M. (2005). Discretionary reporting of stock options by IPO firms. *Accounting Horizons*, 19(4), 223–236.

Under SFAS 123R firms must expense the fair value of stock options and companies can no longer assume zero stock price volatility when estimating option values. Instead, if a company does not have sufficient stock price history to develop a reliable volatility assumption, the company should use volatilities observed in a comparable industry sector. Beams et al. (2005) examine undervaluing of options that resulted from the zero volatility assumption using a sample of 156 companies that filed registration

statements and priced an IPO in the second and third quarters of 2000. The authors divided the firms into two groups – firms that used a zero volatility assumption before the IPO and firms that used a non-zero volatility assumption. Nearly 75% of the pre-IPO sample used a zero volatility assumption. The zero volatility firms tended to be smaller than the non-zero volatility firms and obviously reported significantly greater increases in the volatility assumption in the period after the IPO. The authors compared reported option values with option values using a peer group estimate of volatility. For zero volatility firms, they find average option values of \$3.69 using peer group volatility, which is 40% higher than the \$2.63 mean reported option value. Surprisingly, option values increased in the non-zero volatility group by an average of \$2.08. These results indicate that substantial discretion in volatility assumptions remains and should be considered when interpreting recognized option values and the related expense.

Aboody, D., Barth, M. E., & Kasznik, R. (2006). Do firms understate stock option-based expense disclosed under SFAS 123? *Review of Accounting Studies*, 11, 429–461.

Option pricing model inputs (e.g., expected option life, expected stock price volatility, expected dividend yield, and the risk-free interest rate) result in substantial managerial discretion for stock-based compensation expense under SFAS 123. Managers have at least two incentives to understate option values: to increase reported earnings and to reduce the likelihood of claims of excessive managerial compensation. Aboody et al. (2006) use the S&P 1,500 firms to examine whether reported option values are related to these incentives. The authors estimate option values using historical volatility for that firm, a dividend yield based on that firm's historical yields, the grant year average yield on zero coupon US Treasury bills for the risk-free interest rate, and a model-developed option life estimate. They find that firms understate option values overall, and find that understatement is greater for firms with higher expense and weaker corporate governance.

Next, the authors seek to determine which discretionary inputs firms use to understate option values. Expected option life is related to magnitude of expense, perceived excessiveness of executive pay, and weaker corporate governance. Expected stock price volatility is related to the magnitude of expense and weaker corporate governance. Expected dividend yield is related to weaker corporate governance. The interest rate assumption is not related to any of the understatement incentives. Overall, the findings

suggest that firms use discretion in expected option life, expected price volatility, and to a lesser extent, expected dividend yield to manage reported option expense. They find no evidence that the risk-free interest rate assumption is used for earnings management. These results indicate that firms use option valuation assumptions to opportunistically manage stock option-related expense and provide evidence about the particular assumptions used.

Bauman, M. P., Braswell, M., & Shaw, K. W. (2005). The numbers game: How do managers compensated with stock options meet analysts' earnings forecasts? *Research in Accounting Regulation*, 18, 3–28.

Using a sample of S&P 1,500 firms from 1992 to 2002, Bauman et al. (2005) find evidence that expectations-reducing guidance to analysts better explains the ability of stock option granting firms to meet analysts' forecasts than income-increasing accruals. The authors used two key dependent variables: (1) an indicator variable for firm quarters with income-increasing abnormal accounting accruals, and (2) an indicator variable for firm quarters when the firm met the latest guidance target but would have missed an earlier target. They find that firms that have greater levels of stock option compensation are no more likely to have abnormal income-increasing accruals in meet/beat quarters, but are likely to have expectation-reducing guidance. The authors interpret their findings as suggesting that regulation to curb management guidance is more important than accounting regulation for stock options.

Frederickson, J. R., Hodge, F. D., & Pratt, J. H. (2006). The evolution of stock option accounting: Disclosure, voluntary recognition, mandated recognition, and management disavowals. *The Accounting Review*, 81(5), 1073–1093.

Frederickson et al. (2006) use an experiment to examine whether informed users perceived differences in the reliability of mandated option expense under SFAS 123R as compared to voluntarily recorded expense under SFAS 123. Besides providing evidence about the impact of SFAS 123, this question also provides evidence regarding whether the source of the recognition decision (management choice or FASB mandate) influences user reliability assessments. Finally, the question provides evidence about mandating treatments versus allowing management choice of accounting treatment. The authors predict that users will perceive FASB mandated amounts to be more reliable.

The subject pool used by the authors includes from 1,000 alumni that earned an accounting or finance degree from a major US business school.

The authors ultimately received 220 usable responses from subjects with an average of 11 years of work experience. The results indicate that users perceived increased reliability for mandated disclosures for two reasons. First, the source of the recognition decision (FASB mandate rather than management choice) brought additional reliability perceptions. Second, recognition rather than disclosure in the footnote-generated incremental perceived reliability. Finally, authors found some evidence that management disavowals of recognized stock option expense had some ability to impact users' perceptions.

Fair Value Measurements

AAAFASC. (2005). Response to the FASB's exposure draft on fair value measurements. *Accounting Horizons*, 19(3), 187–196.

In June 2004, the FASB issued an Exposure Draft (ED) entitled "Fair Value Measurements." The ED calls for expanded disclosure about methods and inputs used to generate estimates of fair values for assets and liabilities. The ED proposes a single standard to guide all fair value estimates. The ED defines "fair value" as "an exchange price in a current hypothetical transaction between knowledgeable, unrelated, and willing parties" (p. 188). The ED also provides guidance for fair value determination. It establishes three levels of bases for estimation: (1) quoted prices, (2) quoted prices for identical assets or liabilities in active markets adjusted as necessary for factors relevant to the specific item being measured, and (3) estimates derived from internal valuation models. Three valuation techniques are identified: (1) the market approach, (2) the income approach, and (3) the cost approach. These are to be applied consistently. Finally, the ED specifies disclosures about fair values including information on the fair values at the end of the period, how the fair values were determined, and the effect of the remeasurements on that period's earnings.

The committee expresses support for a single standard to guide fair value determination across accounts. The committee also supports the additional disclosures called for under the ED, but feels that even more disclosures are justified. For example, the committee wishes to see sensitivity analyses and a breakdown of unrealized gains and losses based on the way the fair values were determined. These disclosures would further aid users in assessing the reliability of the reporting amounts. Finally, the committee cautions the FASB against the complete elimination of historical cost information, as research has demonstrated that historical cost

information provides value-relevant information beyond that contained in fair values.

Hodder, L. D., Hopkins, P. E., & Wahlen, J. M. (2006). Risk-relevance of fair-value income measures for commercial banks. *The Accounting Review*, 81(2), 337–375.

Hodder et al. (2006) compare the volatility of three performance measures: net income, comprehensive income, and full fair value accounting. They use a sample of 202 US Commercial Banks that filed form Y9-C reports with the Federal Reserve from 1996 to 2004. The authors predict that full fair value will be a more complete representation of the outcomes of banks' risk management activities than will comprehensive income, and that comprehensive income is a more complete representation than net income. They find that full fair value income volatility is greater than comprehensive income in 77% of the banks and greater than net income in 90% of the banks.

Next, the authors examine which of the three measures is most closely associated with market-based risk measures (market model beta, short-term and long-term interest rate betas, and stock return volatility) and with measures of banks' exposures to market-based risks (exposure to derivatives and the gap between short-term fixed rate assets and fixed rate liabilities). The authors predict that, because full fair value income includes fair value changes for nearly all financial instruments, it will be more closely associated with risk. They find that all three measures are correlated with risk factors, with net income exhibiting the most consistent correlations with risk factors and the strongest correlations with the standard deviation in stock returns. However, full fair value does have incremental correlation beyond that in the other measures. Finally, the authors predict and find that the incremental volatility in full fair value measurements negatively moderates the capitalization of abnormal earnings in bank stock prices and that bank stock returns are increasing in the incremental volatility. Overall, the authors interpret their findings as suggesting that banks are not fully hedged against fair value changes, and that net income and comprehensive income present an incomplete picture of the fair value risk exposure.

Martin, R. D., Rich, J. S., & Wilks, T. J. (2006). Auditing fair value measurements: A synthesis of relevant research. *Accounting Horizons*, 20(3), 287–303.

Martin et al. (2006) synthesize the academic literature related to the auditing of fair value measurements. Their synthesis has two components: the auditor's need to understand how fair value measurements are prepared

and the audit steps and procedures necessary to opine on fair value measurements, as well as possible biases related to audits of fair value measurements. The body of research about the relevance and reliability of fair value estimates generally concludes the obvious: fair market values based on inputs from actively traded markets are more reliable than those from thinly traded markets or from entity-specific inputs. The body of research on the verifiability of fair market values is less extensive. As a result, the authors focus attention on guidance in auditing standards and academic research in psychology and economics that relates to the policies and procedures for auditing fair market value measurements. One significant conclusion from the literature is that audit team structure, expertise, and incentives may not be compatible with audits that require specialized knowledge of valuation techniques. Finally, the authors consider research regarding biases. This research presents evidence that preparers of fair value measurements may be subject to errors and biases, such as overconfidence in fair value estimations and inconsistency and errors when making predictions. Past research regarding audit biases and errors suggests that auditors do not adequately audit the internal controls over the fair value estimation process and must avoid confirmation bias, in which they limit their search to information that supports management's assertions. Unfortunately, some audit guidance calls for such behavior (e.g., AU Sec. 332.35, AICPA, 2000). Finally, auditors must be technically able and devote necessary efforts to identifying and testing the reasonableness of key model assumptions.

Accounting for Liabilities

Botosan, C. A., Koonce, L., Ryan, S. G., Stone, M. S., & Wahlen, J. M. (2005). Accounting for liabilities: Conceptual issues, standard setting, and evidence from academic research. *Accounting Horizons*, 19(3), 159–186.

Botosan et al. (2006) summarize conceptual issues associated with the definition, recognition, derecognition, classification, and measurement of liabilities. They also highlight problems with existing liability-related accounting standards and make suggestions for improvement. In all cases, they summarize relevant research from the extant literature and provide interpretation. Within the definition of a liability, the authors focus on differing interpretations of “probable” obligations and difficulties in identifying obligating events. They point out inconsistencies in obligation

recognition and derecognition (e.g., unvested employee benefits, asset retirements, guarantees, contracts with customers, and obligations to transfer shares of the entity's equity). The ultimate conclusion drawn by the authors is that the FASB will need to provide guidance regarding which characteristics of obligations trigger the recognition of liabilities.

The authors then turn their attention to issues for which current GAAP offers little guidance. First, they discuss problems distinguishing whether financing instruments are debt or equity. Second, they discuss criteria for extinguishing recognized liabilities (e.g., legal release, risk release, method of settlement, or some combination). Third, they discuss difficulties that arise in separating liability and equity components in complex financing arrangements.

Picconi, M. (2006). The perils of pensions: Does pension accounting lead investors and analysts astray? *The Accounting Review*, 81(4), 925–955.

Picconi (2006) examines whether investors and analysts are able to fully process reported pension information and changes in that information. First, Picconi examines whether analysts process changes in pension plan expense determinants (discount rate, expected return on plan assets, and expected rate of compensation increase) that have a measurable effect on future earnings by examining whether forecast errors are systematic following changes in the determinants. He finds that pension plan parameter changes are predictive of forecast errors in the following three quarters. Eventually, analysts do appear to incorporate most of the change into their forecasts, but only after observing unexpected earnings in quarters subsequent to the quarter in which the change was first publicly available. Picconi concludes that this delay is due to task complexity, not information availability. Second, Picconi examines whether the market efficiently impounds pension accounting changes in stock prices. He examines changes in the funded status of the plan (on and off balance sheet) as well as the key accounting assumptions. He finds that the PBO, off-balance-sheet liabilities, and the assumed rate of compensation increase are consistently predictive of abnormal returns over the 1–5 year horizon. Picconi interprets his findings as suggesting that investors can appropriately value on-balance-sheet net obligation information and information recorded in earnings, but do not fully incorporate off-balance-sheet information into the stock price. His findings support SFAS 152, which requires companies to report the full unfunded position of the pension plan as an obligation on the balance sheet and report deferred expense amounts in other comprehensive income.

Intangible Assets

Wyatt, A. (2005). Accounting recognition of intangible assets: Theory and evidence on economic determinants. *The Accounting Review*, 80(3), 967–1003.

Wyatt (2005) examines managerial accounting choices related to recognition of intangible assets. Specifically, she seeks to determine whether managers choose to record intangibles for opportunistic purposes (signaling or contracting) and/or to better reflect the underlying economics. Wyatt uses a sample of Australian companies that did or did not record intangible assets during the period 1993–1997. During these years, Australian companies had wide discretion with respect to recording internally generated identifiable intangible assets. Recognition was permitted when the item would lead to future benefits and the item had a cost or other value that could be reliably measured. Wyatt hypothesizes that recorded intangible assets will be greater when the profitability potential is greater (technology strength), when the time to commercial viability is less (technology cycle time), and when the firm's claim to the property rights is stronger. Further, Wyatt hypothesizes that these variables will be more highly correlated with capitalization for voluntary intangibles than for the more regulated purchased goodwill and R&D. She finds support for each of these predictions. Further, she finds that recognition is much more highly correlated with the economic variables than with the contracting and signaling variables. Her results suggest that limiting managers' intangible asset recognition choices will tend to reduce rather than improve the quality of the investors' information set.

Software Development Costs

Mohd, E. (2005). Accounting for software development costs and information asymmetry. *The Accounting Review*, 80(4), 1211–1231.

SFAS 86 (FASB, 1985) requires capitalization of costs incurred for software development projects that have reached technical feasibility (i.e., successful efforts). This is contrary to SFAS 2 (FASB, 1974), which calls for all R&D costs to be expensed. Mohd (2005) examines whether capitalizing the successful efforts costs conveys useful information. Mohd compares proxies for information asymmetry in 67 software firms before (1983–1985) and after (1986–1988) adoption of SFAS 86. He also compares this group of firms to a control group of 448 other high-tech firms with significant R&D efforts that are not capitalized. This cross-sectional analysis is conducted for

firm years 1986–1995 using bid-ask spread and share turnover as proxies for information asymmetry. Mohd finds that proxies for information asymmetry declined within firms after adoption of SFAS 86, and that cross-sectionally, information asymmetry declined for the software firms relative to the other group of high-tech firms. Mohd interprets these findings as suggesting that allowing the capitalization of R&D costs can reduce information asymmetry. Mohd acknowledges that his findings assume that results from the software development setting can be generalized to other R&D efforts.

Audit Regulation

Audit regulation-related research during the period emphasized the audit environment, audit quality, and auditor judgment. Related to the audit environment, Kinney (2005) provides a broad, theoretical discussion of the audit regulatory environment over the last 25 years, Messier, Martinov-Bennie, and Eilifsen (2005) summarize research on materiality, Hilary and Lennox (2005) examine the credibility of the profession's program of self-regulation, and Rama and Read (2006) find evidence of increased auditor conservatism in the post-SOX era.

Audit quality research emphasized the impact of auditor tenure and rotation, non-audit services, audit firm size, and executive affiliation with audit firms. First, support is found for requiring partner rotation within firms (Ghosh & Moon, 2005), but not mandatory rotation of audit firms (Carey & Simnett, 2006; Favere-Marchesi & Emby, 2005). Nagy (2005) does find some evidence that mandatory audit firm change can improve audit quality for smaller firms. Regarding non-audit services emphasized the recent requirement to disclose fees, including fees paid to audit firms for non-audit services. Gaynor, McDaniel, and Neal (2006) find that investors prefer non-audit services by the audit firm if audit quality is improved, but audit committee members are less likely to approve such services in the face of disclosed fees. Krishnan, Sami, and Zhang (2005) find evidence of reduced investors' perceptions of independence with high non-audit services fees, and Francis and Ke (2006) demonstrate that this is especially true when accruals are also high. Francis and Wang (2005) find evidence that the efficiency of audit pricing is enhanced in the fee disclosure era. Regarding firm size, Geiger and Rama (2006) find evidence of improved quality with Big 4 firms, and Lennox (2005) finds some evidence that audit quality is reduced when client executives were previously employed by the audit firm.

Regarding auditor judgment, Nelson, Smith, and Palmrose (2005) demonstrate that it is optimal for auditors to apply both the cumulative misstatement approach and the current period misstatement approach when evaluating materiality and Allen, Hermanson, Kozloski, and Ramsay (2006) provide insights from the academic literature related to auditor risk assessments as a contribution to the PCAOB project on risk assessment (Table 2).

The Audit Environment

Kinney Jr., W. (2005). Twenty-five years of audit deregulation and re-regulation: What does it mean for 2005 and beyond? *Auditing: A Journal of Practice & Theory*, 24(suppl.), 89–109.

Kinney (2005) discusses trends in audit conditions, audit constants, and shocks to the audit environment over the last 25 years. Audit conditions discussed include the 1980 audit regulatory environment and the onset of the deregulation period, which greatly impacted self-regulation (such as the AICPA's Public Oversight Board). The discussion of conditions extends forward to the PCAOB and government-mandated oversight of accounting and auditing standards through the SOX of 2002. The implications for future auditing scholars and practitioners are discussed. The author considers several constants across the changing conditions: audit value, the expectations gap between user and auditor, the organizational structure of audit firms, and engagement contracts. The major shocks discussed include industry deregulation, increased social importance of audited financial reporting, and information technology advances.

Messier Jr., W., Martinov-Bennie, N., & Eilifsen, A. (2005). A review and integration of empirical research on materiality: Two decades later. *Auditing: A Journal of Practice & Theory*, 24(suppl.), 153–188.

This study synthesizes empirical research on materiality since 1982. The authors discuss implications of the research and point out a number of areas where further examination is needed. The paper begins with synthesis of the definition of materiality according to various regulatory bodies and a brief summary of materiality research prior to 1982. The authors continue with a literature review organized by source of research: archival studies from auditor-related sources, archival studies from public sources, experimental studies of users, experimental studies of auditors, and experimental studies of comparative groups. The authors

Table 2. Evidence and Commentary from the Academic Literature
2005–2006 Audit Issues.

<i>Audit regulation</i>	
Kinney et al. (2005)	Provide a broad discussion of the audit regulatory environment over the last 25 years
Messier et al. (2005)	Summarize research on materiality since 1982
Hillary and Lennox (2005)	Point out the credibility of the self-regulation process and acknowledge weaknesses as well
<i>Audit quality</i>	
<i>Auditor tenure and rotation</i>	
Ghosh and Moon (2005)	Find a positive relationship between audit firm tenure and audit quality
Carey and Simnett (2006)	Find evidence to support partner rotation after 7 years
Favere-Marchesi and Emby (2005)	Find evidence that within firm rotation can positively impact audit firm judgments
Nagy (2005)	Finds evidence that mandatory audit firm change and improve audit quality for smaller firms
<i>Non-audit services</i>	
Gaynor et al. (2006)	Demonstrate that while investors prefer non-audit services by the audit firm if audit quality is improved, the audit committee members are less likely to approve such services when disclosure is required
Krishnan et al. (2005)	Provide evidence of reduced investors' perceptions of independence with high non-audit services fees
Francis and Ke (2006)	Find evidence that investors' perceive lower independence when non-audit services fees and accruals are high
Francis and Wang (2005)	Conclude that public disclosure has improved the precision of audit pricing
<i>Others</i>	
Geiger and Rama (2006)	Find evidence of a Big 5 audit-quality difference in going-concern reporting
Lennox (2005)	Provides evidence of reduced audit quality when client executives were previously employed by the audit firm
<i>Auditor judgment</i>	
Nelson et al. (2005)	Opine that auditors should be required to apply both the cumulative misstatement approach and the current period misstatement approach when evaluating materiality
Allen et al. (2006)	Provide insights from the academic literature related to auditor risk assessments as a contribution to the PCAOB project on risk assessment

conclude from the archival studies that net income is the most significant factor in auditors' materiality and disclosure decisions. This finding holds in the review of experimental studies as well. Findings in the experimental studies suggest that materiality judgments are affected by qualitative factors (e.g., client integrity, culture, and level of moral judgment), experience, firm type, and authoritative guidance. Areas of future research suggested by the authors include: establishing planning materiality, evaluation materiality decisions, nature of items examined, materiality of internal control deficiencies, multi-location audits, and materiality in attest engagements.

Hilary, G., & Lennox, C. (2005). The credibility of self-regulation: Evidence from the accounting profession's peer review programs. *Journal of Accounting and Economics*, 40, 211–229.

Hilary and Lennox (2005) describe the peer review process and examine the impact of published peer review results on audit firms. The study uses data from the AICPA Public File for the years 1997–2003. The final sample includes 1,001 reviews. The variable of interest is the change in the number of clients in the year following the public disclosure of peer review results (using counts from the Auditor-Trak database). Consistent with their expectation, the authors find firms gained clients after receiving clean opinions and lost clients after receiving modified or adverse opinions. The authors emphasize the quick public release of peer review opinions through the AICPA Public File and contrast this with the PCAOB plan of keeping the review results private. The authors view the contribution of this study primarily as evidence for the literature on self-regulation, pointing out the credibility of the process and acknowledging weaknesses in the process as well.

Audit Quality

Auditor Tenure/Rotation

Ghosh, A., & Moon, D. (2005). Auditor tenure and perceptions of audit quality. *The Accounting Review*, 80(2), 585–612.

Ghosh and Moon (2005) investigate how auditor tenure affects investors and financial intermediaries (investors, stock analysts, and debt analysts). The perceived quality of earnings is measured using earnings response coefficients in a regression of earnings on returns. The impact of tenure on

equity and debt analysts is measured using S&P stock rankings and S&P debt ratings. The sample includes publicly traded firms over the period 1990 through 2001. The authors find a positive relation between auditor tenure and investors' earnings response coefficients and a positive relation between auditor tenure and stock rankings. There is no significant relation found between debt ratings and auditor tenure. The authors interpret their findings as suggesting that mandatory auditor rotation could lead to unintended negative consequences for capital market participants, who appear to view auditor tenure as a favorable influence on audit quality.

Carey, P., & Simnett, R. (2006). Audit partner tenure and audit quality. *The Accounting Review*, 81(3), 653–676.

Carey and Simnett (2006) investigate the relation between audit partner tenure and audit quality using data from Australia during a time period when partner rotation was not mandatory. Audit quality measures include going-concern opinions, abnormal working capital accruals, and just beating (missing) earnings benchmarks. The test is conducted cross-sectionally, using publicly traded (Australian Stock Exchange) Australian companies in 1995, before audit partner rotation was mandatory and before early voluntary adoptions of the policy. The findings indicate a negative relation between going-concern opinions and long audit partner tenure (>7 years) and a positive relation between just beating (missing) earnings benchmarks and long audit partner tenure. Both of these findings suggest a decline in audit quality associated with long audit partner tenure, though the authors note that this evidence is specifically associated with non-Big 6 audit firms. There was no finding of a relation between audit partner tenure and abnormal working capital accruals. The authors conclude that the results provide support for the introduction of a rotation policy after 7 years of partner tenure.

Favere-Marchesi, M., & Emby, C. (2005). The impact of continuity on concurring partner reviews: An exploratory study. *Accounting Horizons*, 19(1), 1–10.

This study examines the impact of within-firm auditor rotation on audit judgments using an experiment involving concurring partner reviews. A case study is used with an experimental sample of 52 audit partners from all of the Big 4 firms. A goodwill impairment judgment is the experimental setting. The design manipulated the concurring partner's continuity with the client (new or continuing). The results are consistent with the authors' expectations in that continuing partners were less likely to say goodwill may

be impaired in a setting where the engagement partner had determined no impairment was necessary. The authors conclude that within firm rotation is likely to affect audit firm judgments.

Nagy, A. (2005). Mandatory audit firm turnover, financial reporting quality, and client bargaining power. *Accounting Horizons*, 19(2), 51–68.

Nagy (2005) uses the Arthur Anderson (AA) demise to explore the affect of mandatory auditor change on audit quality. This empirical study uses abnormal accruals as a proxy for audit quality and uses the pre- and post-AA time to capture auditor change for AA clients. Size and relative size are also used in the study as proxies for client bargaining power. The sample includes firms audited by Big 5/Big 4 audit firms in the 2000–2003 time frame. The results indicate an increase in audit quality in the post-AA time period for former AA client firms with less bargaining power (smaller firms). The results for larger firms reflect more bargaining power, but no significant change in audit quality in the post-AA time period. The author suggests more research is necessary to determine if forced auditor change would improve audit quality in larger firms.

Non-Audit Services

Gaynor, L., McDaniel, L., & Neal, T. (2006). The effects of joint provision and disclosure of nonaudit services on audit committee members' decisions and investors' preferences. *The Accounting Review*, 81(4), 873–896.

The authors use an experiment to examine the extent to which mandated disclosures of non-audit service fees affect pre-approval decisions by audit committees. The experiment used 100 corporate directors, assigned to roles as audit committee member (81) or investor (19), to investigate the extent to which required audit fee disclosures affect audit committee decisions regarding the use of the presiding audit firm or an unaffiliated firm for non-audit services. The design manipulated the type of service (risk management or human resource) and the public disclosure of fees (yes or no). The results indicated that audit committee members were less likely to approve joint service if public disclosure was required, even if audit quality would be improved by the joint service. Conversely, investors were found to prefer joint services if audit quality would be improved. The authors interpret their results as evidence that audit committee members take pre-approval decisions seriously and their judgment is affected by public disclosure of non-audit service fees.

Krishnan, J., Sami, H., & Zhang, Y. (2005). Does the provision of nonaudit services affect investor perceptions of auditor independence? *Auditing: A Journal of Practice & Theory*, 24(2), 111–136.

The authors examine the association between fee-based measures of non-audit services and earnings response coefficients (ERCs) to explore the effect of disclosures on the perception of auditor independence. The authors use a 2001 sample of firms to examine the ERCs for the three quarters following the release of the initial non-audit service fees disclosure. The authors find that non-audit fees are negatively associated with ERCs in 2001. The authors interpret their findings as evidence that investors did perceive non-audit service as impairing auditor independence.

Francis, J., & Ke, B. (2006). Disclosure of fees paid to auditors and the market valuation of earnings surprises. *Review of Accounting Studies*, 11, 495–523.

Francis and Ke (2006) examine the impact of non-audit fee disclosure on market perceptions of auditor independence. The authors examine the market's response to quarterly earnings surprises (via earnings response coefficients) in the year before and the year after a firm's initial public disclosure of fees paid for audit and non-audit services. They expect earnings response coefficients to be lower for firms that report higher levels of non-audit fees due to a perception of compromised auditor independence resulting in lower earnings quality. The results are consistent with these expectations. Further investigation reveals that the lower earnings response coefficients are driven by a subset of firms with high non-audit fees and large magnitudes of accruals. The authors conclude that investors believe the payment of high non-audit fees to a firm's auditor may compromise auditor independence.

Francis, J., & Wang, D. (2005). Impact of the SEC's public fee disclosure requirement on subsequent period fees and implications for market efficiency. *Auditing: A Journal of Practice & Theory*, 24(suppl.), 145–160.

Francis and Wang (2005) examine the impact of public fee disclosure on audit fees in subsequent periods. They develop a model that predicts that initial public disclosure of fees leads to greater precision and reduced dispersion in subsequent period fees. This model is empirically tested using unexpected fees as an independent variable in a model of differences in fees between 2000 and 2001. The results indicate smaller variances in audit fees and higher precision in audit fees in 2001 compared to 2000. The authors conclude that public disclosure has improved the precision of audit pricing.

Others

Geiger, M., & Rama, D. (2006). Audit firm size and going-concern reporting accuracy. *Accounting Horizons*, 20(1), 1–17.

Geiger and Rama (2006) investigate the relation between audit firm size and audit quality where audit quality is measured using going-concern reporting accuracy. The authors examine the two types of reporting errors: the type I error where going-concern modified reports are issued to a client who does not subsequently go bankrupt, and the type II error, where clients go bankrupt without having received a going-concern modification. The sample includes Big 4 international firms, national firms, and regional/local firms and examines audit reports over the period 1990 through 2000. The authors collect a sample of companies receiving first-time going-concern reports to test for the type I errors (1,042 sample firms) and collect a sample of bankrupt firms for the tests of the type II errors (710 sample firms). The authors use logistic regression models to explain the probability of the type I errors and the type II errors. The results indicate that both type I and type II errors are significantly lower for Big 4 firms compared to non-Big 4, but indicate no significant difference in error rates between national and regional/local firms. The authors interpret the evidence as suggesting a Big 4 audit quality difference in going-concern reporting.

Lennox, C. (2005). Audit quality and executive officers' affiliations with CPA firms. *Journal of Accounting and Economics*, 39, 201–231.

Lennox (2005) investigates the relation between audit quality and executives' affiliations with CPA firms. The author constructed a sample of 968 executives with prior CPA experience, including 339 executives who were previously employed by the firm that audits their company. The author finds that companies with affiliated executives receive clean opinions more often and these executives experience lower turnover following clean opinions than do unaffiliated executives.

Auditor Judgment

Nelson, M., Smith, S., & Palmrose, Z. (2005). The effects of quantitative materiality approach on auditors' adjustment decisions. *The Accounting Review*, 80(3), 897–902.

Nelson et al. (2005) provide evidence on auditors' likelihood of requiring audit adjustments under two alternative approaches currently used in

practice, the cumulative misstatement approach and the current period misstatement approach. The authors conduct an experiment using 234 audit partners and managers (all from one Big 4 firm) and 8 audit cases that require a judgment on causing recognition of or waiving recognition of a proposed audit adjustment. Across all eight cases the audit firm, the client, the misstatement, and the proposed audit adjustment remained constant while the misstatement size, subjectivity, income effect, precision of estimates, quality of earnings reporting, and materiality approach were manipulated. The authors find that the auditors were more likely to require adjustment under the approach (cumulative or current period misstatement) that made the misstatement appear to have higher quantitative materiality. These results were robust for seven of the eight cases (there was no effect found when the estimate was less precise, presented as a lower bound of a range of possible misstatements). The authors believe auditors should be required by standard setters to apply both approaches and waive only adjustments found to be immaterial under both.

Allen, R., Hermanson, D., Kozloski, T., & Ramsay, R. (2006). Auditor risk assessment: Insights from the academic literature. *Accounting Horizons*, 20(2), 157–177.

The authors provide insights and conclusions on the risk-assessment process, as a contribution to the PCAOB project on risk assessment. Questions posed by the PCAOB in a 2005 briefing paper are addressed, including the usefulness of a business process focus in assessing client risks; the importance of industry expertise and specialization in risk assessment; the usefulness of systems dynamics as a framework to assess potential risk; the extent to which inherent risk is assessed; the enhancement of fraud risk assessments by uniquely considering fraud risks and brainstorming about fraud risks; and the difficulty in interpreting, measuring, and weighing individual fraud risk factors. The authors also provide insights on the markedly increased rate of testing of and reliance on internal controls, the weak positive link between assessed risk and subsequent audit testing, the challenges of responding to global factors in risk assessments, and the apparent soundness of the audit risk model.

Corporate Governance

Corporate Governance was considered from several perspectives during the period. Several papers examined the role of financial experts on the audit

committee. Williams (2005) provides a descriptive analysis of financial experts serving on audit committees, based on proxy statements from the year following the implementation of the Sarbanes-Oxley Act. Defond et al. (2005) examine abnormal returns around press releases of outside director appointments, and finds that the market values the appointment of accounting experts when the company has strong corporate governance. Krishnan (2005) compares the audit committee quality of companies that disclose internal control weaknesses and those that do not, and finds that internal control weaknesses are negatively related to both the number of financial experts and the proportion of outside members on the audit committee. Several papers also investigate the role of corporate governance as it relates to fraud. Farber (2005) studies firms cited for reporting fraud, and documents: (1) subsequent improvements in corporate governance by those firms, and (2) improved abnormal buy-and-hold returns for firms that increase outside directorship. Miller (2006) provides evidence about the role of the press in identifying accounting fraud. Jennings et al. (2006) conduct an experiment, using judges as subjects, and find that, in the presence of weak corporate governance, audit firm rotation reduces perceived auditor liability for fraudulent reporting. Financial statement certification is considered in two articles. Vermeer (2005) documents lower income-increasing discretionary accruals for companies whose CEO and CFO voluntarily certified the financial statements in 2000. Chang et al. (2006) report positive market reactions to the initial financial statement certification by the CEO and CFO. Finally, Carcello et al. (2005) used survey data to document determinants of companies' investment in internal auditing (Table 3).

Table 3. Evidence and Commentary from the Academic Literature 2005–2006 Corporate Governance, Disclosure, and Earnings Management.

<i>Fraud</i>	
Farber (2005)	Examines firms cited for reporting fraud, and documents subsequent improvements in corporate governance
Miller (2006)	Provides evidence about the role of the press in identifying and reporting fraud
<i>Internal auditing</i>	
Carcello et al. (2005)	Identify determinants of companies' investment in internal audit

FINANCIAL EXPERTS AND THE AUDIT COMMITTEE

Fraud

Farber, D. B. (2005). Restoring trust after fraud: Does corporate governance matter? *The Accounting Review*, 80(2), 539–561.

Farber (2005) explores whether firms take action to improve corporate governance following financial reporting fraud, and whether subsequent improvements in corporate governance mechanisms are valued by market participants. He uses a matched-sample design that pairs fraud firms with a control sample. His fraud sample consists of 87 firms cited in SEC Accounting and Auditing Enforcement Releases (AAERs) between 1982 and 2000 for filing false or misleading reports. He matches these with control firms of the same four-digit industry and stock exchange that have comparable net sales. He compares these two groups for changes in the quality of corporate governance subsequent to fraud detection, and finds that fraud firms improve corporate governance in the areas of outside directors, block holders, ownership percentages of insiders, audit committee structure and meetings, and separation of the CEO role from the chairman of the board. He also finds improved abnormal buy-and-hold returns for firms that increase the percentage of outside directors, but no related increase in analyst following or institutional holdings.

Miller, G. S. (2006). The press as a watchdog for accounting fraud. *Journal of Accounting Research*, 44(5): 1001–1033.

Miller (2006) examines how the press functions as an information intermediary for instances of accounting fraud. He identifies a sample of 263 firms sanctioned by the SEC for accounting violations between 1987 and 2002, and scrutinizes related press coverage for early identification of accounting fraud. For those 263 firms, 75 of the violations were identified by the press prior to announcement of the violation. He observes a negative stock market response to articles based on reporter-generated analysis or financial analyst information published by wire services or in the national business press. He also finds that firms that the press identifies early are larger in terms of market value and receive greater attention in the press, and that the nature of the fraud committed is associated with early identification of accounting violations.

CEO/CFO CERTIFICATION OF FINANCIAL STATEMENTS

Internal Auditing

Carcello, J. V., Hermanson, D. R., & Raghunandan, K. (2005). Factors associated with U.S. public companies' investment in internal auditing. *Accounting Horizons*, 19(2), 69–84.

The New York Stock Exchange requires an internal audit function for all listed companies. Carcello et al. (2005) examine the association between dollars budgeted for internal audit and company risk, financial condition, and audit characteristics. Their sample is 217 publicly-traded companies with one or more employees who are members of the Institute of Internal Auditors and total assets between \$200 million and \$5 billion. Survey data from these companies indicate that 2002 budgeted total (in-house and outsourced) internal audit expenditures, in millions, range from \$0.03 to \$10.00, with a mean of \$0.82, and 2002 staff ranges from 0 to 95 employees, with a mean of 6.78. Carcello et al. show that total investment in internal audit is greater for firms in the financial, service and utilities industries, and when the internal audit budget is reviewed by the audit committee. Further, investment in internal audit increases with total assets, leverage, inventory, and operating cash flows, and decreases with the percentage of internal audit expenditures outsourced. These results provide a benchmark for both regulators and companies interested in assessing investment in internal audit.

NOTE

1. A hazard model estimates the probability of bankruptcy at time t given that the firm has survived until time t .

REFERENCES

ARTICLES CITED BUT NOT ANNOTATED

- American Institute of Certified Public Accountants. (2000). *The standards of field work: Auditing valuation based on fair value* (Vol. 1). AICPA Professional Standards.
- American Institute of Certified Public Accountants. (2005). *Private company financial reporting task force report*. New York, NY: AICPA.

- Basu, S. (1997). The conservatism principle and the asymmetric timeliness of earnings. *Journal of Accounting and Economics*, 24(1), 3–38.
- Financial Accounting Standards Board (FASB). (1974). *Accounting for research and development costs*. SFAS No. 2, FASB, Stamford, CT.
- Financial Accounting Standards Board (FASB). (1985). *Accounting for the cost of Computer Software to be Sold, Leased, or Otherwise Marketed*. Vols. 1 and 2. SFAS No. 86, FASB, Stamford, CT.
- Hicks, J. R. (1946). *Value and capital* (2nd ed.). Oxford, UK: Clarendon Press.
- International Accounting Standards Committee Board (IASCB). (1989). *Framework for the preparation and presentation of financial statements*. London, UK: IASCB.

PART IV:
CAPSULE COMMENTARIES

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HOW REGULATION FD INFLUENCES ANALYSTS' FORECAST ATTRIBUTES FOR RESTRUCTURING FIRMS?

Rong Yang and Beixin Lin

On October 23, 2000, the US Securities and Exchange Commission (SEC) issued Regulation Fair Disclosure (Reg. FD), which the SEC and proponents of the rule hoped would increase the flow of information, level the playing field for financial analysts and investors, and eliminate selective disclosure. Critics of the rule asserted that Reg. FD could reduce the quantity of information released, resulting in more volatility and information asymmetry.

Reg. FD requires that when a firm discloses material nonpublic information, it must make the same information available to all parties immediately. We examine the situation in which firms report restructuring charges, expecting that the resulting complexity could create a setting in which the regulatory effects of Reg. FD would be apparent because of the uncertain signals produced by such restructuring activities as downsizing, sale or termination of a business line, facility closure, consolidation, or relocation. Prior studies have shown that the presence of restructuring charges reduces the accuracy of analysts' earnings forecasts and prompts analysts to revise their earnings expectations (e.g., Chaney, Hogan, & Jeter, 1999;

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Lin & Yang, 2006), because restructuring activities increase the risk and uncertainty of the firm's future operating earnings and cash flows. Prior to Reg. FD, analysts with exclusive access to corporate insiders presumably enjoyed proprietary information on the restructuring plan, unavailable to other analysts. If Reg. FD could succeed in opening up sources of information to all analysts, providing equal access to firm information, we would expect a reduction in information asymmetry resulting in a change in estimated risk, and consequently analyst actions and their forecasts.

We examine analyst forecast attributes relative to restructuring charge announcements pre- and post-Reg. FD. Because the initial draft of Reg. FD was released in March 1999, eventually took effect in October 2000, we excluded years 1999 and 2000 from the pre-FD period to avoid any preliminary impact of this rule, defining 1997–1998 as the pre-FD period. We used 2002–2003 as the post-FD period, excluding year 2001 because it was considered to be the transitional period during which both firms and financial analysts learned how to comply with the new rule. Our sample consists of 153 firm-year observations that engaged in restructuring activities in the pre-FD period, and 354 firm-year observations in the post-FD period.

The first set of tests examines differences in analyst forecast accuracy (errors), forecast dispersion, and forecast coverage for restructuring firms between the two periods. We find that both forecast errors and forecast dispersion decline after Reg. FD was adopted, supporting the argument that Reg. FD helps to reduce information asymmetry and improves analyst forecast performance, as intended by the SEC. However, we do not find any change in analyst following. A second set of tests finds that the forecast attributes are not associated with the increased complexity of restructuring events, measured as the absolute amount of scaled restructuring charge. Thus, any Reg. FD mitigation is not associated with the relative magnitude of restructurings. This is consistent with Wang's (2006) finding that, when the complexity of earnings signals increases, analysts' expertise diminishes and recommendation revisions become less informative about earnings value implication.

This study demonstrates support for some level of effectiveness of Reg. FD. The results, however, may be confounded by other changes in the economic and financial reporting environment of the pre- and post-FD periods.

REFERENCES

- Chaney, P. K., Hogan, C. E., & Jeter, D. C. (1999). The effect of reporting restructuring charges on analysts' forecast revisions and errors. *Journal of Accounting and Economics*, 27, 261–284.
- Lin, B., & Yang, R. (2006). The effect of repeat restructuring charges on analysts' forecast revisions and accuracy. *Review of Quantitative Finance and Accounting*, 27(3), 267–283.
- Wang, Z. (2006). *Analysts' superiority in processing public information: Evidence from recommendation revisions*. Working Paper. University of Maryland.

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ACCOUNTING FOR FINANCIAL INSTRUMENTS: A COMPARISON OF EUROPEAN COMPANIES' PRACTICES WITH IAS 32 AND IAS 39

Patricia Teixeira Lopes and Lucia Lima Rodrigues

This paper analyses accounting for financial instruments of a sample of blue chips companies listed in leading European exchanges before IFRS were mandatory in the EU, and compares these accounting practices to the requirements of IAS 32 and IAS 39.

There is wide evidence of problems in the accounting for financial instruments around the world (Chalmers, 2001; Chalmers & Godfrey, 2000; Blankley, Lamb, & Schroeder, 2000; Roulstone, 1999; Mahoney & Kawamura, 1995). Additionally, IAS 32 and IAS 39 are seen as complex accounting standards, requiring difficult implementation by companies (Street, 2003; Jermakowicz, 2004; Sucher & Jindrichovska, 2004; Larson & Street, 2004). This research extends previous research by providing a complete and exhaustive template for analysing the accounting for all financial instruments, not just derivatives, based on companies' annual reports, and by bringing new insights into the areas that have likely posed problems to companies in a context of change to IFRS.

In order to characterize accounting practices, we analysed the 2001 STOXX 50 companies' annual reports using a predefined list of 120

categories which covered the recognition, subsequent measurement and disclosure rules of the 2001 versions of IAS 32 and IAS 39.

Our results show that about half of the companies then used fair value for held-for-trading financial assets, but less than half adopted this criterion for available-for-sale financial assets as IAS 39 requires. The majority of companies disclosed fair value determination method, but the information is far from being clear and objective, preventing the fair value information from being relevant and useful. Regarding derivative accounting policies, the most profound differences between 2001 practices and IAS 39 are in the accounting for hedging transactions. The majority of companies used deferral methods and provided only low levels of disclosure.

Taken overall, our empirical findings demonstrate that in 2001 the biggest European companies, supposedly the ones possessing the best information systems and applying the most advanced and sophisticated accounting and disclosure practices, had quite a long way to go in terms of accounting and disclosure of financial instruments, particularly derivatives and available-for-sale securities. These findings are consistent with the complexity usually attributed to these standards, underscoring the EU concerns surrounding IAS 39 endorsement. The mandatory adoption of these more stringent standards should improve the information disclosed by companies. However, since these disclosures are sensitive for companies as they deal with exposure to risks and management, concerns about the compliance degree and the usefulness for decision-making of the information prepared under mandatory IAS 32 and IAS 39 still remain to be addressed with data subsequent to 2005 when these standards went into effect.

REFERENCES

- Blankley, A., Lamb, R., & Schroeder, R. (2000). Compliance with SEC disclosure requirements about market risk. *Journal of Derivatives*, 7(3), 39–51.
- Chalmers, K. (2001). The progression from voluntary to mandatory derivative instrument disclosures – Look who’s talking. *Australian Accounting Review*, 11(1), 34–44.
- Chalmers, K., & Godfrey, J. (2000). Practice versus prescription in the disclosure and recognition of derivatives. *Australian Accounting Review*, 11(2), 40–50.
- Jermakowicz, E. (2004). Effects of adoption of international financial reporting standards in Belgium: The evidence from BEL-20 companies. *Accounting in Europe*, 1, 51–70.
- Larson, R., & Street, D. (2004). Convergence with IFRS in an expanding Europe: Progress and obstacles identified by large accounting firms’ survey. *Journal of International Accounting, Auditing & Taxation*, 13(2), 89–119.

- Mahoney, J., & Kawamura, Y. (1995). *Review of 1994 disclosures about derivative financial instruments and fair value of financial instruments*. Financial Accounting Series, 156-A, F.A.S. Board, Norwalk.
- Roulstone, D. (1999). Effect of SEC financial reporting release no. 48 on derivative and market risk disclosures. *Accounting Horizons*, 13(4), 343–363.
- Street L.D. (2003). GAAP convergence 2002: A survey of national efforts to promote and achieve convergence with international financial reporting standards. BDO, Deloitte Touche Tohmatsu, Ernst & Young, Grant Thornton, KPMG, and PricewaterhouseCoopers. University of Dayton.
- Sucher, P., & Jindrichovska, I. (2004). Implementing IFRS: A case study of the Czech Republic. *Accounting in Europe*, 1, 109–141.

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**PART V:
PERSPECTIVES**

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INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRS) AND THE DEVELOPMENT OF FINANCIAL REPORTING STANDARDS IN TURKEY

Yüksel Koç Yalkın, Volkan Demir
and Lutfiye Defne Demir

ABSTRACT

The European Union decided that International Financial Reporting Standards (IFRS) would be effective as of the beginning of 2005. Consequently, the IMF, the World Bank, IOSCO as well as other similar organizations have established policies to support the adoption of IFRS. Similarly, since January 1, 2005, banks and firms in Turkey registered on the Istanbul Stock Exchange have prepared their financial statements in accordance with principles set out in IFRS. Moreover, the Turkish Accounting Standards Board (TASB) that oversees Turkish Accounting Standards has accepted harmonization with the principles of IFRS in order to get international acceptance.

The TASB is the sole authority charged with the development and application of accounting standards in Turkey. Therefore, future

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acceptance and application of these standards by other regulatory organizations is inevitable.

INTRODUCTION

Worldwide studies in the field of accounting have tried to present fair and useful information on accounting applications and reports for many years. National accounting standards, developed by national accounting standards boards or committees of developed countries, have particularly served this purpose. Under the leadership of these countries and also through the participation of representatives of certain developing countries, the International Accounting Standards Committee (IASC) was established in 1973, followed by the development and implementation of International Accounting Standards (IAS). In addition, IAS has been accepted by many countries as a base for the local accounting standards that will be developed. In recent years, the concept of “International Accounting Standards” has changed into “International Financial Reporting Standards” (IFRS) as a result of the continuing studies in this field.

Since the 1990s, there have been attempts to develop accounting principles and policies applicable for all Turkish entities in accordance with global standards. Considering the EU integration process and globalization, synchronization with IAS/IFRS principles and the application of these standards have become inevitable for Turkey. Thus, various boards have been established in Turkey and have performed numerous studies in order to develop national accounting standards in compliance with the Board (TMUDESK). TMUDESK was established in 1994 and continued its activities until the Turkish Accounting Standards Board (TASB) was created. Following TMUDESK, some official organizations have prepared legal arrangements in relation to their activity fields. These arrangements include: Communiqués for Accounting Application Regulations issued by the Banking Regulation and Supervision Agency (BRSA), Communiqué Serial: XI, No.: 25 “*Communiqué For Accounting Standards in Capital Market*” issued by Capital Market Board (CMB) and Turkish Accounting Standards (TAS = IAS, TFRS = IFRS), which are harmonized with IFRS, issued by TASB. When Turkish Accounting Standards (TAS) is activated and empowered by the New Turkish Commercial Legislation, unlike the limited arrangements of CMB and BRSA, it will cover all entities in Turkey.

The latest establishment for accounting standards in Turkey is the TASB. It was established in 1999. It is responsible for the development of accounting standards in Turkey. The establishment of TASB as the sole authority of accounting regulation in Turkey resulted in the cessation of TМУDESK. TASB has translated IAS/IFRS and issued TAS/Turkish Financial Reporting Standards (TFRS) congruent with them.

The aim of this article is to examine the developments of financial reporting standards in Turkey and shed some light on the present situation of the TFRS.

DEVELOPMENT OF INTERNATIONAL ACCOUNTING STANDARDS

Financial reports are one of the most significant tools for investment decision-making. Accounting scandals around the world proved the need for more accurate, fair, comprehensive, and timely financial statement information. Moreover, the continuing trend of globalization has meant that financial borders are increasingly being transgressed with the wider aim of raising international capital flows. This trend has further fueled the development and application of international systems. One of the most impressive advances relating to this field has taken place in accounting standards.

For the formation of international capital movements, firms are required to prepare financial statements that are valid globally or at least in the countries of stock exchanges where they would like to sell their securities. In order to put this into practice, firms should prepare their financial statements based on general accounting standards that are accepted worldwide. At this point the question to ask is whether any IAS exist at present that are universally applied and accepted. Considering that it is extremely difficult to unify the application of accounting in just one country, it is difficult to imagine how it could be possible for millions of firms around the world to prepare their financial statements in a uniform format. Furthermore, it leads one to question how such standards can be applicable for all firms throughout the world. As a matter of fact, countries in the North American Free Trade Agreement (NAFTA) and member countries of the European Union have accepted different accounting standards. NAFTA countries have accepted United States Generally Accepted Accounting Principles (USGAAP). These principles have been developed by the

Financial Accounting Standards Board (FASB, 1996) and its most significant feature is that it is a rules-based system. Therefore, it has been prepared in considerable detail.

The European Union, on the other hand, has primarily accepted IAS, which was prepared by an independent organization called the IASC. This committee published 41 standards, some of which were abrogated by others. The IASC was reorganized in April 2001 and renamed the International Accounting Standards Board (IASB). The standards that are issued by the IASB are known as IFRS. It has been decided that the old standards will be recognized as IAS until the new standards abrogate them. As a result of these developments, 30 IAS and 7 IFRS have become effective¹ (www.iasb.org, May 21, 2007). Through the support of the International Organization of Securities Commissions (IOSCO) and the EU integration process, the IASB has become the leading organization in command of the harmonization of accounting standards (www.iosco.org/about, September 29, 2006).

In parallel to the international progresses of IFRS, FASB and IASB signed the Norwalk Agreement in 2002. According to this agreement, differences between GAAP and IFRS will be eliminated by taking into consideration IFRS principles as a base and also by the acceptance and application of the new standards both locally and internationally (Kaya, 2004, pp. 13–14).

Since the beginning of 2005, it has been necessary for all entities whose headquarters are within EU borders and who are registered in a stock exchange to apply to IFRS. Today many countries that are not members of the European Union have also accepted these standards. Turkey is one of these countries. The Expert Accountants' Association of Turkey (TMUD) and the Union of Chambers of Certified Public Accountants of Turkey (TURMOB), which are the two most important organizations on accounting profession, are the members of the IASB.

THE APPLICATION OF ACCOUNTING STANDARDS IN TURKEY

The European Union, as previously mentioned, decided that IFRS should take effect at the beginning of 2005. The IMF, the World Bank, the IOSCO, and other similar organizations set their policies to support the adoption of IFRS. Similarly, banks and firms in Turkey that are registered with the Istanbul Stock Exchange have been preparing their financial statements

according to IFRS since January 1, 2005. Moreover, the TASB that controls the determination and application of TAS has accepted a harmonization (uniformity) with IFRS in order to achieve international acceptance. Therefore, TAS/TFRS were formed by translating the original IFRS documents into Turkish and paying a copyright fee to the IASB.

TASB has also prepared a draft of a simplified set of accounting standards for small- and medium-sized enterprises (SMEs), which parallels that of the IASB. The purpose of the draft of TFRS for SMEs is to provide information about the financial position, performance, and cash flows of an entity, which will be useful for the users when making economic decisions (www.iasb.org/Current+Projects, May 21, 2007). TASB has been organizing seminars, meetings, and panel discussions in order to discuss TFRS for SMEs.

In addition, the New Turkish Commercial Legislation will be in force starting in 2008 or 2009. As a result of this legislation, every company, whether public or not, must apply TFRS (translation of IFRS). Thus, as can also be seen in developed countries, accounting for information purposes is beginning to be preferred over accounting for tax purposes in Turkey. The draft of the New Turkish Commercial Legislation indicates TASB as the regulatory authority for setting standards of financial statements ([The Draft of Turkish Commercial Law](#)). Thus, all companies will have obliged to prepare their financial statements in accordance with standards issued by TASB by the time the New Turkish Commercial Legislation becomes effective.

IMPORTANT ARRANGEMENTS IN THE DEVELOPMENT PROCESS OF ACCOUNTING STANDARDS IN TURKEY

The development of TFRS, which has been issued and put into application by TASB, is the result of a long-term harmonization process. Although the development of TFRS was initially formed by the translation of IFRS, these standards are also based on several legal arrangements and developments; the most important of these being the publication of [Law No.: 3568](#) and the application of “Uniform Accounting System.”

The Law of the Profession (Law No.: 3568) in Turkey

The accounting profession in Turkey received its legal public recognition under [Law No.: 3568](#) which was released on June 13, 1989, in the Official

Gazette. The objectives of this Law are explained in the first article of **Law No.: 3568** as quoted below:

... to ensure the healthy and reliable functioning of operations and transactions in enterprises, to audit and evaluate the results of the operations within the framework of the relevant legislation, to present the actual facts to the use of the concerned persons and authorities, to regulate the fundamentals concerning the establishment, organization, operations, activities and the elections of the principle organs of CERTIFIED GENERAL ACCOUNTANCY”, CERTIFIED PUBLIC ACCOUNTANCY AND SWORN-IN CERTIFIED PUBLIC ACCOUNTANCY and the Chambers of Certified Public Accountants and Sworn-In Certified Public Accountants.

Both the professional chambers and the Union of Chambers of Certified Public Accountants of Turkey (TURMOB), which were established under the legal recognition of the accounting profession in Turkey, undertook national and international representation in the profession, and led many research projects on a national scale and contributed to international professional research. Thus, professions in Turkey gained important rights. Furthermore, the accounting profession became reputable, and interest in the profession increased.

The Chamber of Certified Public Accountants of Istanbul organized a round table meeting about the application of International Standards in SMEs. The participants included academicians, professionals, and representatives of TASB, the CMB, and the Banking Regulation and Supervision Agency (BRSA). The ideas explained in the report of this meeting are as follows (ISMMMO, 2005, pp. 10–11):

- A definition of SMEs is required. Financial reporting standards for SMEs should be prepared separately by the TASB.
- The objective of the preparation of financial reporting standards for SMEs is to make it possible for SMEs to create fair and reliable financial reports for financial information users. Financial reporting standards for SMEs should target all SMEs.
- Criteria for companies that will use these standards should be determined.

The Union of Chambers of Certified Public Accountants of Turkey (TURMOB) has participated in some international cooperation projects. The General Assembly meeting of TURMOB, a contract between TURMOB and ACCA (The Association of Chartered Certified Accountants) was signed in October 2004. This contract enables professionals to enter the ACCA exams and to be exempted from certain courses (Arikan, 2005, p. 374).

Application of a Uniform Accounting System

As a result of the application of a Uniform Accounting System on January 1, 1994, a new era in accounting applications in Turkey has begun. Fourteen communiqués have been released and have since been revised to reflect actual developments. The purposes of these regulations are to provide a fair basis for accounting for operations and for companies recording their results on a balance sheet principle, to provide accurate information to financial information users of financial statements by maintaining the consistency and comparability of the information and to facilitate the auditing of these companies.

The application of a uniform accounting system is a large step in the standardization of accounting practices. This is because a uniform accounting system was prepared to be compatible with the 4th directive,² which regulates accounting applications in the member countries of the European Union. Within the standardization process in the European Union, the 4th, 7th, and 8th directives are references (Yalkin & Akdoğan, 2004, p. 5). In accordance with 4th directive, legal regulations are made in a uniform accounting system. These are as follows:

- a) Basic concepts of accounting;
- b) Explanations of accounting policies;
- c) Principles of financial statements;
- d) Preparation and presentation of financial statements;
- e) The framework of a uniform chart of accounts, the chart of accounts, and explanations.

TURKISH ACCOUNTING STANDARDS BOARD (TASB)

The TASB has been authorized to develop accounting standards in Turkey by a specific article of the Capital Markets Law. According to this article, TASB has the responsibility to determine and issue national accounting standards to provide the means for the development and adoption of accounting principles. The purpose of TASB and its standards, is to ensure fairness, reliability, comparability, and comprehensibility of financial statements. The board is composed of members from the Ministry of Finance, the Ministry of Industry and Trade, the Turkish Treasury, the

Council of Higher Education, the Capital Markets Board, the Banking Regulation and Supervision Agency, and the Union of Chambers and Commodity Exchanges (one member from each) as well as one sworn-in certified public accountant and one certified public accountant from TURMOB (www.tmsk.org.tr, May 21, 2007).

Following the first meeting on March 7, 2002, TASB began its operations as the only establishment responsible for developing accounting standards. The board accepted harmonization in order to make the TAS/IFRS valid within the international arena. Thus, the board signed an agreement with the International Accounting Standards Committee Foundation (IASCF) and consequently gained the right to translate IAS into Turkish (*Türkiye Muhasebe/Finansal Raporlama Standartları*, 2006).

TASB has founded several commissioned groups of academicians, independent auditors, and other specialists to complete research on IAS and to conduct translation studies. In these studies, the board gave priority to accounting terms accepted by IASB and they translated standards by using these terms. The translations were presented to the related companies, institutions, and the public, and after the necessary adjustments, they were finalized.

As a result of these studies, TASB released 30 TAS and 8 TFRS in accordance with IAS/IFRS and the framework of the standards (*Appendix A*). The standards issued by TASB have been in effect since the beginning of 2006, yet it is not mandatory for unlisted companies, because the New Turkish Commercial Legislation is still not in effect. It is possible to classify TAS and TFRS as follows (*Greuning, 2006, pp. 5–6*):

Standards related to the presentation of financial statements

- Framework;
- TFRS-1: First-Time Adoption of TFRS;
- TAS-1: Presentation of Financial Statements;
- TAS-7: Cash Flow Statements;
- TAS-8: Profit or Loss for The Period, Fundamental Errors and Changes in Accounting Policies.

Standards related to financial statements of group

- TFRS-3: Business Combinations;
- TAS-27: Consolidated and Separate Financial Statements;
- TAS-28: Investments in Associates;
- TAS-31: Financial Reporting of Interest in Joint Ventures.

Standards related to balance sheet and income statement

- TFRS-2: Share-Based Payment;
- TFRS-4: Insurance Contracts;
- TAS-2: Inventories;
- TAS-11: Construction Contracts;
- TAS-12: Income Taxes;
- TAS-16: Property Plant and Equipment;
- TAS-17: Leases;
- TAS-18: Revenue;
- TAS-19: Employee Benefits;
- TAS-20: Accounting for Government Grants and Disclosure of Government Assistance;
- TAS-21: The Effects of Changes in Foreign Exchange Rate;
- TAS-23: Borrowing Costs;
- TAS-32: Financial Instruments: Presentation;
- TAS-36: Impairment of Assets;
- TAS-37: Provisions, Contingent Liabilities and Contingent Assets;
- TAS-38: Intangible Assets;
- TAS-39: Financial Instruments: Recognition and Measurements;
- TAS-40: Investment Property;
- TAS-41: Agriculture.

Standards related to disclosures of financial statements

- TFRS-5: Non-current Assets Held for Sale and Discontinued Operations;
- TFRS-6: Exploration for and Evaluation of Mineral Resources;
- TFRS-7: Financial Instruments: Disclosures;
- TFRS-8: Operating Segments;
- TAS-10: Events After the Balanced Sheet Date;
- TAS-14: Segment Reporting (This standard will be abrogated by TFRS-8);
- TAS-24: Related Party Disclosures;
- TAS-26: Accounting and Reporting by Retirement Benefit Plans;
- TAS-29: Financial Reporting in Hyperinflationary Economies;
- TAS-33: Earnings per Share;
- TAS-34: Interim Financial Reporting.

An important development in reference to the wider practice of TAS/ TFRS and the unification of the applications is the draft of the New Turkish Commercial Legislation, which is expected to be effective in the foreseeable future. According to the draft, while recording and preparing financial statements, entities must adhere to TAS issued by TASB and to accounting

practices in the framework. As a result of this regulation, financial statements of Turkish entities will become valid in international capital markets.

As mentioned above, TASB has started to study TFRS for SMEs, to be compatible with draft standards for SMEs (International Financial Reporting Standard for Small- and Medium-Sized Entities-IFRS for SMEs) as issued by the IASB (Appendix B). This study becomes more important in regards to the rules of Basel-II, which will become effective in 2008. Therefore, according to Basel-II, SMEs must adhere to IAS in order to gain bank loans. The borrowing costs of the entities that do not fulfill these conditions will increase and these companies will experience difficulties in receiving loans.

OTHER APPLICATIONS CONCERNING ACCOUNTING STANDARDS

As known, studies for developing national accounting standards in Turkey, in accordance with IAS, were primarily conducted by the TМУDESK (Turkish Accounting and Auditing Standards Board, a dependent board of TURMOB). Following the research conducted by the TМУDESK, various official organizations implemented regulations within their operating domains. These regulations have also been developed for the banking sector by the Banking Regulation and Supervision Agency and for public trading companies by the Capital Market Board. As a result of research conducted by these institutions, listed companies and banks now prepare their financial statements in accordance with International Accounting-Financial Reporting Standards.

This application within the banking sector became effective under the Communiqués for Accounting Application Regulations issued by the Banking Regulation and Supervision Agency (BRSA). However, the BRSA issued another communiqué on November 8, 2006, following the previously issued TASs and TFRSs of TASB (www.bddk.org.tr/Default_EN.aspx). The BRSA has abrogated its early communiqués by issuing this particular communiqué and has forced all banks and other financial institutions to prepare their financial statements according to TASs and TFRSs (including the annual financial statements of 2006). In the banking sector where international operations are intense, application of TASs and TFRSs is an important development for Turkey. Considering this development and Basel-II, it is clear that the Banking Regulation and Supervision Agency put

into practice the accounting standards in accordance with IFRS (www.tmsk.org.tr/basin, May 21, 2007).

In order to make capital markets more transparent and to increase interest of local and foreign individual and institutional investors to shares of listed companies, the CMB developed accounting standards in accordance with IFRS. In this respect, the CMB issued the Communiqué for Accounting Standards in Capital Market on November 15, 2003. With this communiqué, public trading companies started to prepare and present financial statements and reports in accordance with IFRS (Appendix C). Although the standards of CMB were developed according to IFRS, they have not been updated since 2003. These standards have differences with the current full-set IFRS. Therefore, CMB issued a communiqué that permits listed companies to choose either CMB's standards or current full-set IFRS.

While the standards developed by the BRSA and the CMB are compulsory only for the companies subjected to their legislations, the application domain of these standards has been limited. Furthermore, CMB's standards have caused differentiation among accounting applications.

A study has been started by TURMOB in order to form public oversight in Turkey. All the related institutions work together in this study. After New Turkish Commercial Legislation becomes valid, all companies, whether listed or not, have to prepare their financial statements according to TFRS. This also includes TFRS for SMEs.

CONCLUSION

The TASB is the sole organization responsible for the development and application of accounting standards in Turkey. Therefore, acceptance and application of these standards by other regulatory organizations will be inevitable in the future.

Through global developments, several changes and further legal arrangements have occurred in Turkey. The most important one of these arrangements is the changing of Turkish Commercial Legislation. The draft of New Turkish Commercial Legislation is still under discussion by the related commissions of Parliament. It is expected that this draft will be accepted and that the New Turkish Commercial Legislation will be effective in the near future. A wide application of TAS/TFRS can be obtained under this Legislation and Basel-II, which is an important subject for banks and public trading companies.

In addition, the studies of TASB on TFRS for SMEs, compatible with the draft of standards for SMEs issued by the IASB, can be considered a positive development. TFRS for the SMEs should be put into practice by considering the opinions of academics and members of the accounting profession.

The development and application of TAS/TFRS have increased the quality of accounting data, especially the quality of information covered by financial statements. Furthermore, the financial statements of entities in Turkey will be prepared according to internationally accepted accounting standards.

In Turkey, successful arrangements related to the accounting profession and accounting applications have been made by the contribution and common efforts of members of the accounting profession, universities, and accounting organizations. Considering the results of former arrangements, we believe that the application of TAS/TFRS will be successfully accomplished.

NOTES

1. Although the eighth IFRS was issued by IASB, it is not yet effective.
2. This directive dated July 25, 1978, includes principles of preparation of financial statements of corporations.

REFERENCES

- Arikan, Y. (2005). Meslek Mevzuatı, İSMMM Publications.
- Capital Market Board, Communique Serial:XI, No.: 25 "Communique For Accounting Standards in Capital Market", released on November 15, 2003 in Official Gazette.
- FASB. (1996). *The IASC – US comparison project: A report on the similarities and differences between IASC standards and USGAAP*.
- Greuning, H. Van. (2006). International financial reporting standards: A practical guide, The World Bank, Washington, DC.
- İSMMM. (2005). *The round table meeting conclusion declaration for the application of IFRS's in SMEs and the problems that might occur*, Istanbul.
- Kaya, İ. (2004). FASB-IASB Anlaşması ve Global Finansal Muhasebe Standartlarına Doğru, İSMMM Auditing Symposium.
- Law No.: 3568 "The Law of Independent Accountancy, Certified Public Accountancy and Sworn-in Certified Public Accountancy", released on June 13, 1989 in Official Gazette.
- The Draft of Turkish Commercial Law.

Türkiye Muhasebe/Finansal Raporlama Standartları: Uluslararası Finansal Raporlama Standartları (IFRS/IAS) ile Uyumlu Türkiye Muhasebe Standartları (TMS/TFRS) (2006), TASB Publications No.: 1.

www.bddk.org.tr/Default_EN.aspx

www.iasb.org

www.iosco.org

www.tmsk.org.tr

Yalkin, Y. K. & Akdoğan, N. (2004). Avrupa Topluluğu Dördüncü Yönerge, Yedinci Yönerge, Sekizinci Yönerge Çevirisi, TÜRMOB Publications-9, Ankara.

APPENDIX A. TURKISH ACCOUNTING STANDARDS (TAS) AND TURKISH FINANCIAL REPORTING STANDARDS (TFRS) ISSUED BY TURKISH ACCOUNTING STANDARDS BOARD (TMSK)

TAS-1	Presentation of Financial Statements
TAS-2	Inventories
TAS-7	Cash Flow Statements
TAS-8	Profit or Loss for The Period, Fundamental Errors and Changes in Accounting Policies
TAS-10	Events After the Balanced Sheet Date
TAS-11	Construction Contracts
TAS-12	Income Taxes
TAS-14	Segment Reporting (<i>This standard will be abrogated by TFRS-8</i>)
TAS-16	Property Plant and Equipment
TAS-17	Leases
TAS-18	Revenue
TAS-19	Employee Benefits
TAS-20	Accounting for Government Grants and Disclosure of Government Assistance
TAS-21	The Effects of Changes in Foreign Exchange Rate
TAS-23	Borrowing Costs
TAS-24	Related Party Disclosures
TAS-26	Accounting and Reporting by Retirement Benefit Plans
TAS-27	Consolidated Financial Statements and Accounting for Investments
TAS-28	Accounting for Investments in Associates
TAS-29	Financial Reporting in Hyperinflationary Economies
TAS-31	Financial Reporting of Interest in Joint Ventures

APPENDIX A. (Continued)

TAS-32	Financial Instruments: Presentation
TAS-33	Earnings per Share
TAS-34	Interim Financial Reporting
TAS-36	Impairment of Assets
TAS-37	Provisions, Contingent Liabilities and Contingent Assets
TAS-38	Intangible Assets
TAS-39	Financial Instruments: Recognition and Measurements
TAS-40	Investment Property
TAS-41	Agriculture
TFRS-1	First-Time Adoption of TFRS
TFRS-2	Share-Based Payment
TFRS-3	Business Combinations
TFRS-4	Insurance Contracts
TFRS-5	Noncurrent Assets Held for Sale and Discontinued Operations
TFRS-6	Exploration for and Evaluation of Mineral Resources
TFRS-7	Financial Instruments: Disclosures
TFRS-8	Operating Segments

**APPENDIX B. CONTENT OF TFRS FOR SMEs, WHICH
ARE IN THE PREPARATION PROCESS BY TMSK
(HARMONIZED WITH DRAFT OF IFRS FOR SMEs)**

1	Scope
2	Concept and Pervasive Principles
3	General Standards of Financial Statements Presentation
4	Balance Sheet (Financial Position Statements)
5	Income Statement
6	Statements of Changes in Equity
7	Statements of Income and Retained Earnings
8	Cash Flow Statements
9	Notes to The Financial Statements
10	Consolidated Financial Statements
11	Accounting Policies, Estimates and Errors
12	Financial Assets and Financial Liabilities
13	Inventories
14	Investments in Associates

APPENDIX B. (Continued)

15	Investments in Joint Ventures
16	Investment Property
17	Property Plant and Equipment
18	Intangible Assets Other Than Goodwill
19	Business Combination and Goodwill
20	Leases
21	Provision and Contingencies
22	Equity
23	Revenue
24	Government Grants
25	Borrowing Costs
26	Share-Based Payment
27	Impairment of Non-Financial Assets
28	Employee Benefits
29	Income Taxes
30	Financial Reporting in Hyperinflationary Economies
31	Foreign Currency Translation
32	Segment Reporting
33	Events After The End of The Reporting Period
34	Related Party Disclosures
35	Earnings Per Share
36	Specialized Industries
37	Discontinued Operations and Assets Held for Sale
38	Interim Financial Reporting
39	First-Time Adoption of TFRS for SMEs

**APPENDIX C. ACCOUNTING STANDARDS ISSUED
BY CAPITAL MARKET BOARD (CMB)**

Section 1	Framework for The Preparation and Presentation of Financial Statements
Section 2	Presentation of Financial Statements
Section 3	Interim Financial Reporting
Section 4	Cash Flow Statements
Section 5	Revenue
Section 6	Inventories

APPENDIX C. (Continued)

Section 7	Property Plant and Equipment
Section 8	Intangible Assets
Section 9	Impairment of Assets
Section 10	Borrowing Costs
Section 11	Financial Instruments
Section 12	Business Combinations
Section 13	Consolidated Financial Statements and Accounting for Investments, Accounting for Investments in Associates, Financial Reporting of Interest in Joint Ventures
Section 14	The Effects of Changes in Foreign Exchange Rate
Section 15	Financial Reporting in Hyperinflationary Economies
Section 16	Earnings per Share
Section 17	Events After the Balanced Sheet Date
Section 18	Provisions, Contingent Liabilities and Contingent Assets
Section 19	Profit or Loss for The Period, Fundamental Errors and Changes in Accounting Policies
Section 20	Leases
Section 21	Related Party Disclosures
Section 22	Segment Reporting
Section 23	Disclosures in The Financial Statements of Banks and Similar Financial Institutions
Section 24	Construction Contracts
Section 25	Discontinuing Operations
Section 26	Accounting for Government Grants and Disclosure of Government Assistance
Section 27	Investment Property
Section 28	Income Taxes
Section 29	Employee Benefits
Section 30	Accounting and Reporting by Retirement Benefit Plans
Section 31	Agriculture
Section 32	Disclosure of Financial Statements and Reports, Presentation of Them to CMB and Istanbul Stock Exchange
Section 33	First-Time Financial Statements
Section 34	Various Articles

THE INDEPENDENCE CONCEPT REVISITED[☆]

John L. Carey[†]

ABSTRACT

John L. Carey retired as executive director and administrative vice president of the AICPA in 1970. He had been associated with the AICPA since 1925. The first non-CPA to receive the AICPA Gold Medal Award, and one of the few non-CPAs to be elected to the Accounting Hall of Fame, Carey authored numerous articles for professional journals and books. In 1969–1970, he authored a two volume history of the AICPA entitled The Rise of the Accounting Profession. The original version of this paper, previously unpublished, was delivered to an accounting seminar at the University of Illinois in 1970. Carey's first major book length work on CPA ethics was published by the American Institute in 1946. A specialist in CPA ethics, Carey continued to follow the developments of the CPA profession from his retirement home in Taconic, Connecticut, until he passed away. This paper was first published in 1987 and is reproduced from Catalyst magazine with permission from The Ohio Society of CPAs.

[☆] John L. Carey, 1904–1987.

Communications among accountants – and between accountants and the outside world – are frequently hampered by semantic difficulties. Accountants have appropriated some English words and elevated them to the status of terms of art. Other English words are used by accountants in only one of the senses permitted by the dictionary – though in some contexts an outsider might easily assume a different meaning. Furthermore, if some words or phrases in common use among accountants prove to be unfortunate from a legal or public relations point of view, the professions' official spokesmen have been known to substitute new language to clarify the situation.

For example, accountants used to audit and certify financial statements. However, "audit" can mean "verify," and "certify" can mean "guarantee" – these are the senses in which some unfriendly outsiders understand those words. Now we say that CPAs "examine" financial statements and "express an opinion" on them – though to some laymen this suggests a more superficial process than what is actually done. The process itself is now called the "attest function." One meaning of "attest" is "certify," but we insist that we use "attest" only in the sense of "bear witness to."

Furthermore, while the "CPA's examination" is what used to be his audit, the "CPA examination" is the test by which he became a "qualified" member of the profession. It is usual for a "qualified" member of the profession to issue "unqualified" opinions, but an "unqualified" accountant can – in some states – issue a "qualified" opinion.

Most people disapprove of compromise on principles. But CPAs can compromise on accounting principles without qualms of conscience, since in the profession's lexicon "principle" is used in only one of the dictionary meanings – an accepted rule of action – and in accounting there may be more than one accepted rule.

All this is amusing, but it is also serious. The profession's efforts to make itself understood – its public relations problems, its legal liability problems – are handicapped, I believe, by the ambiguities of its vocabulary.

Nowhere is this more evident, it seems to me, than in the convoluted debates about independence. This is a word that has at least 15 different meanings. The word "independent" was first used in conjunction with "accountant" in the same sense as in the phrase "independent contractor" – as the dictionary says, "not subject to another's authority." But the noun form, "independence," also denotes the admirable quality of being "not influenced or controlled by others in matters of opinion or conduct." It was not difficult, by subtle thought transmission, for independent accountants, perhaps with some self-satisfaction, to invest themselves with this admirable quality of independence. However, in an absolute and literal sense, it is

obviously impossible for any human being except a hermit to avoid being influenced by others to some extent – not necessarily for evil. Inevitably the time came when the profession felt it necessary to explain what is meant by “independence” as the term was applied to CPAs.

In the *Tentative Statement of Auditing Standards*, issued in 1947, independence was equated with complete intellectual honesty, honest disinterestedness, unbiased judgment, objective consideration of facts, and judicial impartiality. The present Code of Ethics says that independence is not susceptible of precise definition, but is an expression of professional integrity and refers to objective and unbiased opinion.

“We can say with confidence that audit independence means integrity and objectivity.”

So far so good. We can say with confidence that audit independence means integrity and objectivity. With equal confidence, I think, we can say that CPAs have displayed integrity and objectivity in their capacity as independent auditors, with exceptions so rare as to be immaterial.

But, alas, the discussion cannot end here.

The Securities Act of 1933 provided for audits of registrants by “independent public or certified accountants.” The administrative regulations stated that an accountant would not be *considered* independent under certain circumstances, among them if he was an officer or director of the audited company or had a substantial financial interest in it.

This introduced for the first time a distinction between *real* independence – integrity and objectivity – and the *appearance* of independence.

It became evident before long that this distinction between reality and appearance could lead to an ethical, logical, and semantic morass – and so it has. We are not out of it yet.

This is not to say that the questions of appearances should or could be ignored. Public opinion can be ignored only at grave risk. In recent years, public opinion has become very sensitive to conflicts of interest in high places – in the judiciary, in Congress, in the executive branch of government, and in business corporations. The accounting profession cannot hope to maintain public confidence in its integrity and objectivity if its members enter into relationships with audit clients, which appear to create conflicts of interest. The most obvious of such relationships are financial interests, and service as officer, director, or employee of such clients. These relationships are now specifically proscribed in the Code of Ethics.

What has led us into the morass is the question of *what other* relationships should be considered as involving conflicts of interests, and therefore weakening public confidence in the integrity and objectivity of CPAs in their capacity as independent auditors.

The Code of Ethics says, in effect: *any* relationship which might be expected to result in the auditor's opinion on financial statements *not* being considered independent, objective and unbiased by one who had knowledge of all the facts. But this demands more definitions. "Expect" means to regard as *likely* to happen – probable, not just possible. The 64-dollar question, however, is who is this "one who has knowledge of all the facts?"

In an interpretive opinion, the Ethics Committee has defined him as a "reasonable observer." Since he must know all the facts, we can then describe him as a "reasonable and well-informed observer" – not a hostile, unfriendly, illogical, unreasonable, or ignorant observer. To be well informed, I submit, he must understand the nature of the relationship between the auditor and his client, which is being questioned, the CPA's role in the relationship, the possible impact of the relationship on the financial statements, and whatever additional circumstances are relevant.

Now, the specific relationship that has recently been the principal target of criticism – mainly from the academic community – is the CPA's involvement in the so-called management services, variously known as advisory or consulting services. But these terms have never been authoritatively defined, and it seems quite clear that they convey different meanings to different people. Accordingly, when we discuss the relationship of "independence" to "management services," we must deal with two very elusive concepts – and when we add the element of what reasonable, well-informed observers are likely to think, will probably think, the difficulties are compounded.

In my personal opinion, this discussion of Management Services, while useful in encouraging rigorous analysis of the independence concept, has been wide of the mark, in that it has distracted attention from the more immediate and more vitally important aspects of the independence problem, and shifted attention to what I am convinced are peripheral issues.

What are we trying to do? We are trying to develop institutional arrangements which will reassure the informed public that when a CPA expresses an opinion on financial representations that opinion can be relied upon with confidence – that the CPA can be *trusted* to act with integrity and objectivity; that he will not subordinate his judgment to that of his client.

At what point is the CPA exposed to the greatest pressure on his objectivity – the greatest temptation to subordinate his judgment to that of his client? Clearly this is at the point of exercising his attest function – giving

his opinion on financial statements. If he and the client disagree, the CPA is faced with possible loss of the client and a recurring annual fee – regardless of M.S. and tax.

Can CPAs be protected against this pressure and this temptation? No one as yet has been able to invent any protective device, which would not effectively put the entire financial reporting and auditing function under direct control of the government. If the audit of corporate financial statements became an adversary proceeding, similar to the I.R.S. examination of tax returns – if auditors became “policeman,” as some writers have suggested – it seems quite obvious to me that investors would be not nearly as well served with financial information as they are today. (Internal revenue agents and policemen, incidentally, cannot be shielded against all temptation either.)

How, then, can the public be reassured that the CPA’s integrity and objectivity will be maintained? Not by self-serving declarations intimating that CPAs are a superior breed, possessing superhuman virtues, and strength of character. The public wouldn’t believe that, even if it were true.

Reasonable, well-informed observers will believe, however – indeed they *do* believe – that there are countervailing pressures, which far outweigh the pressure of a CPA to yield to a client’s *improper* demand. These countervailing pressures are:

- (1) Normal strength of character, disciplined intelligence, and professional pride.
- (2) Possible legal liability – a painful lawsuit.
- (3) Possible professional discipline, including loss of CPA certificate.
- (4) Possible loss of reputation and consequent loss of clientele.

In addition to these countervailing pressures, there are other considerations that make the temptation to yield to a clients’ demand much weaker than it may seem at first glance:

- (1) The CPA has many clients: the loss of one will not be catastrophic.
- (2) Clients do not like to change auditors for reasons that might be difficult to explain: it’s likely to raise awkward questions at stockholder’s meetings – and even invite some scrutiny by the SEC.

From many informal, confidential conversations, I am convinced that when the chips are down the auditors almost always win.

Almost always. When do they lose? They sometime lose when the client can produce “substantial authoritative support” for an accounting principle, treatment, or method which the CPA does not really approve, but which as an emerging practice has several “appropriate” solutions,

endorsed by authoritative sources and has not been as yet ruled upon by the FASB or SEC. In cases like this, due to what I regard as the rather unfortunate degree of competition among accounting firms, there is a possibility that if the CPA on the job insists on having his way, another accounting firm, just as reputable as his, will agree with the client in view of the substantial authoritative support for his position. So the CPA on the job *may* yield his professional preference – though there are enough cases where he has not, and has lost the client, to demonstrate that integrity can prevail even under these conditions.

But it is in this area, I think, that the greatest threat to public confidence in the objectivity of CPAs is germinating.

The publicity flowing from the investment-credit fiasco brought sharply to public attention the fact that the existence of alternative generally accepted accounting principles made it possible for two companies, in identical circumstances, to get clean opinions from reputable auditors – or even the same auditor – on statements based on different principles which resulted in material differences in reported net income.

“The range of generally accepted accounting principles has been steadily narrowed.”

This was a shock to many people, and it has evoked a widespread suspicion that management can manipulate reported earnings at will by choosing accounting principles which best serve its purposes. This, of course, is not true. The range of generally accepted accounting principles has been steadily narrowed. Earlier practices, which can fairly be called abuses, have been eliminated. Existing alternatives having substantial authoritative support do not result in statements, which are in themselves false or misleading – though they may impair comparability.

All this, however, is extremely difficult, if not impossible to explain to the public. The only solution, in my opinion, is for the profession to eliminate alternative practices not justified by differences in actual circumstances – and do it as fast as possible in the areas where reported earnings per share are most significantly affected.

To be sure, involvement of CPAs in management services has been mentioned frequently in the public press as raising additional questions about audit independence, but usually as a secondary matter. If the main

problem concerning accounting principles can be solved, I really don't think the M.S. problem will cause much trouble.

Why don't I think so? From the time the profession first organized in the United States, nearly a century ago, CPAs have been advising and assisting clients in matters other than auditing, financial reporting, and tax work. For example, the Institute has a report dated in 1910, by an accounting firm, on a company's organization, its cost and general accounting systems, its production methods, and its employee incentives. Financial management, cost controls, inventory control, and credit management were among the common subjects of advice and assistance by accounting firms prior to World War I.

No one even suggested that services of this kind had any adverse effect on audit independence.

Such services, however, were not called "management services" or "management advisory services" until the 1940s.

Perhaps this descriptive phrase was unfortunate, in that it may suggest to some observers a closer relationship to management than previously existed. In fact, the vast majority of M.S. is of the same nature as those which accounting firms performed before the term M.S. was invented.

Misunderstanding of the role of the CPA in rendering such services sometimes beclouds the issue. Users of financial statements consulted by the AICPA's Devore Committee (1969) had no objection to the CPA's advisory role with respect to any phase of management's functions if that role was confined to structure, plan, system, method, or procedure by which management can achieve desired results. It seems to be generally accepted that CPAs can properly gather and analyze data and point out the advantages or disadvantages of alternative courses of actions. And this is mostly what they do.

Even after there had been a good deal of published criticism of M.S. in relation to the appearance of independence, the chairman of the SEC said in 1966 that no serious threat to independence appeared to be involved in services related to the financial process or broadly defined information and control systems.

All this is not to say that specific situations cannot arise in management services, or tax practice, or in auditing, which might raise doubts in the minds of reasonable, well-informed observers as to a CPAs' objectivity in exercising his attest function. But such situations must be dealt with on a case-by-case basis. No one has suggested a rational basis for proscribing entire areas of service solely because of their possible effect on the appearance of independence.

The CPA's management and tax services are obviously useful, or they would not be in increasing demand. They would be more costly if they could not be performed by CPAs already familiar with clients' organizations and procedure by virtue of their work as auditors. There have been and will be changes about conflict but the evidence has been unconvincing that the performance if such services has in fact adversely affected the objectivity of CPAs in their audit functions.

Accordingly I must conclude:

1. That efforts to protect CPAs against pressures on their objectivity are unrealistic. No one can participate in the world's affairs without being exposed to temptation.
2. The most direct pressure on the CPA's objectivity arises in the exercise of the attest function itself, but the countervailing pressures far outweigh the temptation.
3. The public's skepticism about independence comes mainly from the mistaken notion that the acceptability of alternative accounting principles permits management to manipulate earnings improperly. This notion can be eradicated by prompt action by the profession to limit alternative principles to those justified by differences in circumstances.
4. So far as management services and tax practice are concerned, independence should not be defined so liberally as to permit relationships which would be likely to erode public confidence in the CPAs' objectivity; but it should not be defined so strictly as to inhibit the rendering of useful services when the likelihood of such erosion is remote. This fine line can be drawn only on a case-by-case basis, not by broad proscriptions of entire areas of services.

PART VI:
BOOK REVIEWS

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Corporate Governance Post-Sarbanes-Oxley: Regulations, Requirements, and Integrated Processes

By Zabihollah Rezaee. Wiley, Inc., Hoboken, NJ, 2007.
544 pages; \$85.

Reviewed by Larry M. Parker
Case Western Reserve University

Professor Rezaee has provided a comprehensive, well-organized book on current corporate governance. Novices and experienced practitioners can benefit from this work. It would be excellent as a textbook in a complete course on corporate governance, or a reference for a course that touches on governance.

The book goes well beyond corporate governance as merely compliance with legal requirements. The broad perspective of corporate governance as a company's relations with a "wide range of corporate governance participants" (p. xi) including the board of directors, management, auditors, legal counsel, financial advisors, regulators, standard setters, shareholders, lenders, and other stakeholders is thoroughly presented. Ethical perspectives, philosophy of governance, and benefits to society are included in addition to more traditional discussion of structure, regulatory requirements, functions, and best practices. The term "integrated" in the title appears to be quite appropriate. Professor Rezaee has avoided presenting the numerous complex aspects of governance in isolation, and has provided concepts and frameworks to assist in successfully combining all aspects. The depth of thought provided for concepts, and the level of detail for facts and applications, is impressive.

The book organizes its 14 chapters into three parts. The first part, *The Rise of Corporate Governance*, is comprised of Chapters 1 and 2. These chapters lay the foundation for the role of corporate governance in improving corporate trust and investor confidence, and provide an integrated perspective of structure, principles, functions, and mechanisms for successful corporate governance.

The second part, *The Functions of Corporate Governance*, includes eight chapters (Chapters 3–10). Each chapter describes a key function for

corporate governance. The eight functions are Oversight, Board Committees, Managerial, Compliance, Internal Audit, Legal/Financial Advisory, External Audit, and Monitoring. Each function is described in detail, with an emphasis that the functions must work well together to achieve the broad purposes of corporate governance.

The final portion of the book, chapters 11–14, is titled *Contemporary Issues in Corporate Governance*. In these chapters, we are reminded of the dynamic complexity of corporate governance. The author considers governance issues in private and not for profit organizations, IPOs and NPOs, business ethics, globalization and global markets, technology, and multiple bottom lines (Global Reporting Initiatives). This reader found these chapters to be among the most interesting and thought provoking in the book.

Corporate governance is a challenging, multi-faceted topic, and the book covers all aspects thoughtfully. However, each of the three parts of the book, and each chapter, is quite involved, and readers would benefit if more attention was paid to better introductions and summaries for each of the parts, and for some of the chapters. Novice readers in particular would probably better absorb the important material presented if, for example, better overviews at the beginning and better reviews at the end of chapters were incorporated. Though the information is very well organized and logically presented, much of the book requires an effort to avoid becoming almost overwhelmed by the amount and detail of concepts and facts provided. The information is all there, but extraction and retention of the information would be better served if more techniques were in place to assist readers, particularly for those not familiar with the area.

There are few errors and inconsistencies, which one might expect in any major work involving such topics. This is addressed because, unfortunately, one of the examples is the very first exhibit, Exhibit 1.1 (p. 8). There is an error in the direction of arrows to and from “suppliers.” Also, the seven governance functions listed in the exhibit are missing one of the eight functions (board committees) presented in the second part of book, and hence it is inconsistent. Missteps in the very early stages of a work can understandably create reduced credibility. But it would be incorrect to consider this book lacking in credibility. It is a major work in the area of corporate governance, and careful readers will very much benefit from it. This reviewer highly recommends it to anyone with an interest in corporate governance.

The Firm as An Entity: Implications for Economics Accounting and the Law

By Yuri Biondi, Arnaldo Canziani and Thierry Kirat. Routledge, Oxon, 2007. 387 pages; \$135.00.

Reviewed by Gregory A. Jonas
Case Western Reserve University

This book is the most recent volume in the series *The Economics of Legal Relationships*. Motivated by recent failures in corporate governance and increasing concerns regarding transparency, this particular volume revisits the theory of the firm using a multidisciplinary approach, which integrates perspectives from accounting, economics, and law. The editors provide a foundation for reconsidering entity theory in a way that better reflects the dynamic reality of the firm.

The format of this book is a collection of new essays and reprints organized into four sections. The first section articulates the purpose and organization of this volume. The second develops the current state of the theory of the firm. The third section reviews selected historical perspectives on the firm. The last section presents five essays, each developing a different alternative to the “legal fiction” view of the firm. In addition to maintaining the multidisciplinary approach, each section includes developments from the United States and Continental Europe as well as key historical perspectives coupled with contemporary thought.

In the first section, *Introduction: The firm as an entity*, the editors begin by noting that currently accepted theories of the firm focus on very specific aspects (e.g., governance, property rights, contracts) whereas, in reality, firms are both more complex and dynamic. The idea of a more holistic approach to viewing the firm has been present in the literature since the early 20th century in the United States as exemplified by Commons (1924), Berle and Means (1932), as well as in Continental Europe as shown by the works of Rathenau (1918), Smalenbach (1926), and Zappa (1937). The editors suggest revisiting this more holistic view of the firm to enrich current theory.

The second section, *On the economic theory of the firm as an institution and an organization*, contains a contemporary essay by Weinstein followed by reprints of Simon (1991), Shubik (1993), Coase (1990), and Berle (1965). Weinstein begins this section by reviewing the historical development and key aspects of two perspectives of the firm. One view considers the firm as no more than a “nexus of contracts.” This view includes agency theory and its ilk (e.g., transaction cost theory, property rights theory, the informativeness principle, etc.). The alternate view perceives the firm as “bundle of capabilities,” which includes production and knowledge. Production and knowledge capabilities of a firm result from complex interactions among management, labor, rules, cultures, behaviors, and the other aspects of the infrastructure that enables a firm’s problem solving capability. Weinstein concludes by suggesting that the firm is an institution, which encompasses more than the representation offered by either the contractual or the capabilities view.

Simon (1991) questions the assumed centrality of markets and profit maximization as being unable to explain observed phenomena without treating too many variables as exogenous without appropriate empirical support. Based on prior literature and examples of actual organizational behavior, Simon argues that in reality organizations (firms) both dominate and offer better explanations of economies than do markets. Furthermore, profit maximization as the firm’s objective is unrealistic when considering the structure of organizations and factors that affect behavior of employees who ultimately perform the work. Simon suggests that a more realistic organization utility function could be formed by considering “authority, rewards, identification, and coordination” (p. 59).

Shubik (1993) criticizes the general equilibrium theory as having too many limitations (16 are enumerated in detail) to be of much practical value. In particular, general equilibrium theory does not consider the dynamic, real world measurements provided by accounting. Shubik suggests a need to reconcile accounting theory, accounting practice, and economic theory as part of moving away from a focus on equilibrium in favor of modeling real world processes.

Coase (1990) summarizes his work on accounting and economics during the 1930s in this essay. During this period, he worked on several projects involving cost accounting and financial statements at the London School of Economics. In the resulting publications, Coase suggested that, with some concerns for uniformity, accounting information would be useful in economics research. Subsequently his work on cost accounting caused him to suggest that “cost” should be “opportunity cost.” At that time, his

first suggestion drew the ire of economists and his second suggestion drew the ire of accountants. However, Coase maintains there should be more "... interdisciplinary studies between economics and accounting" and that "the theory of accounting the accounting system is part of the theory of the firm" (p. 90).

Berle (1965) presents a rebuttal to the position that neoclassical economics does not need to implement changes to reflect the evolution in business since the early 1900s. He begins with observed facts regarding the size of corporations, the distribution of ownership, the change in the proportion of stock held by individuals, and the sources of capital. The argument proceeds that with the dramatic change away from the classic owner-manager firm and increase in size of firms, profit maximization no longer carries its historical meaning. Further, stockholders have neither the same degree nor the same type of influence over the firm as when the neoclassical economic theories were developed.

The third section, *Perspectives for accounting, law and economics: Lessons from the past*, consists of three contemporary essays (Canziani, Kirat, Avi-Yonah and Sivan) and three reprints (Berle, 1947; Anthony 1960; Stauss, 1944). Each essay provides added historical perspective to the key ideas presented in the previous section of this book. These recurring ideas regarding the theory of the firm are the unrealistic nature of neoclassical economics, the fallacy of profit maximization, the need for integrating theory from multiple disciplines, and the need for a holistic approach.

Canziani begins by reviewing European development of theories of the firm with primary focus on Germany and Italy during the period from 1900 to 1935. Kirat follows with an essay focused on the works of two scholars from France (Perroux and Ripert) and two scholars from the United States (Clark and Commons). In the third essay of this section, Avi-Yonah and Sivan use court cases to provide an interesting history of three corporate forms: an artificial entity, an aggregation of owners, or a separate "real" entity. They show that the corporation as a "real entity," both separate from its shareholders and not an artificial construct, is the dominant form over time. They then suggest that the dominance of the real entity form provides an explanation for why firms engage in acts of corporate social responsibility in which there is no clear benefit to shareholders.

Each of the three reprints in this section provides historical insight to a very specific aspect of the theory of the firm. Berle (1947) reviews elements of corporate law in suggesting a theory of "enterprise entity." Using a "question and answer" format, Anthony (1960) presents arguments that a profit maximization assumption for firms is unrealistic because it is

both difficult to pursue and immoral (as it would ignore all stakeholders' claims other than the shareholders). Drawing on the works of Schumpeter (1934, 1935) and Knight (1921, 1942) and Stauss (1944) develops a case for the firm, as a real entity, replacing the classical conception as the modern entrepreneur.

The last section, *Essays on economic, legal and accounting features of the firm as an entity*, consists of five contemporary essays, which independently build an alternative to the contractual view of the firm which dominates the current literature. Yuri Biondi's essay starts this section with a view, which he bases largely on the accounting system as representing, regulating, and organizing the economic activity of the firm. Biondi concludes that this perspective results in the view of a firm as a real economic entity and an institution, which serves others besides its shareholders.

The next essay, by Gindis, first points out shortcomings of the contractual and "collection of assets" views of the firm. Gindis then builds a theory of the firm as a real entity, which includes characteristics of individuality, cohesiveness, and durability. The following essay by Manfrin adds a discussion of legal forms as part of a holistic view of the firm. Marzo's essay introduces finance theory to the entity discussion by reviewing how elements of neoclassical finance theory would need to change in order to accommodate the firm as a real entity instead of a fiction. This section concludes with an essay by Moore and Rebérioux on how corporate governance interacts with the entity view of the firm. After pointing out issues with the agency perspective, the authors review elements of the managerialist approach to governance in the United States and the social approach or European model. They conclude that the best governance model should include a blend of both approaches.

The editors and contributors to this book present a compelling body of evidence for moving toward a more holistic approach to the theory of the firm as a real entity in contrast to the contractual or agency based view common today. They propose that a holistic view is more likely to accommodate the dynamic reality of how firms behave in today's economy. Readers of this book may find the repetition of content within and between sections bothersome at times, although this is at least partly the result of presenting the topic through a collection of related essays. This book will likely be of primary interest to researchers working in areas of firm behavior and readers interested in the underlying history of the firm as a socio-economic institution.

The World's Newest Profession

By Christopher McKenna. Cambridge University Press, New York, 2006.
379 pages; \$29.95. ISBN 13-978-521-81039-5

Reviewed by Timothy J. Fogarty
Case Western Reserve University

I wish I had the proverbial nickel for every time an accounting student told me that their true vocation interest was consulting. My first thought has always been to wonder what it was that this student knew that they felt so confident that they could charge others to hear. My more reasoned thought was to wish that I knew more about this vocation. Along that second line comes *The World's Newest Profession* by Christopher McKenna.

McKenna's book is organized into nine chapters that are sandwiched between an introduction and a conclusion. The author also treats us to more than 100 pages of notes. This level of documentation (nearly 30% of the entire book) evinces the author's commitment to scholarship. The book also contains a useful index.

The reader will be impressed by the role that management consultants have played in bringing about the modern organization structure. As an agent of diffusion, this group has been a powerful agent of isomorphism. Without consultants, the conventional wisdom of decentralized form could not have spread as rapidly and as decisively. Although more recent, the packaging and dissemination of "corporate culture" provides another major, albeit less convincing case. One could argue (although the author does not) that the very existence of the modern business school owes much to the role taken on through the 20th century by consultants. If the mark of success in systematizing the familiar, and leaving the reader with an appetite for more, then McKenna's efforts work.

The full appreciation of this text requires a reader to have some familiarity with the conceptual apparatus of the new professionalism, as exemplified by *Abbott's (1988) A System of Professions*. The maneuvering of management consultants for professional status will seem cryptic to those that subscribe to more classic views on the topic. McKenna's treatment may take the quest for professionalism to new places with its focus on the symbolic

plane of the current era. In short, the appearances of professionalism may be overtaking the distinctive knowledge base (and for that matter ethical adherence) as the *sine qua non* of the occupational claim.

The author seeks to defuse several myths about the work of consultants. The text is very clear that the origin of modern consulting lie more in the traditions of the cost accounting and industrial engineering of the 1920s than it does with the scientific management usually attributed to Frederick Taylor. McKenna also questions the idea that consultants do not add value, and only tell clients that they already knew but could not say. In fact, the book identifies strong value added provided by consultants over the years. The idea that management advisors diffuse valuable practices and structures serves as a meta-theme in the book.

One of the best chapters pertains to the history of management consulting outside the for-profit area. Whereas many of us have some familiarity with the operations of this group for high-profile business organizations, their work for government, charities, hospitals, and universities is mostly an untold story. How consultants carried a business logic to these domains is fascinating and very consequential.

The chapter devoted to the unexpected corporate collapses shortly after the turn of the last century struck a false note and did not materially contribute to the book. In my reading, this chapter did not offer fresh insights into the fall of Enron and Arthur Andersen. Although there might be an interesting story about the extent consulting contributed to the frauds and the deviation from the social covenant with constituents, McKenna has not told it. In that what is offered only vaguely tells us about independence and the managerial need for external credibility, the book concludes on a flat note that suggests that the author knows much more about the past than the present.

Many groups would benefit from the material contained in this book. The historical development of managerial consulting would be of interest to those with an academic appetite for the emergence of our business sector. The emphasis here is on the major consulting enterprises in the United States such as McKinsey & Co., Booz Allen & Hamilton, and Cresap, McCormick and Paget, and to a lesser extent Arthur Anderson. This allows more limited consideration of the key individuals, such as the founders and managing partners, and the backdrop of vital historical events, such as WWII and the passage of important regulatory legislation. Students and schools interested in professions and professionalization will find much of value in this text. Whether or not management consulting can be considered a profession serves as an ongoing theme of the book. Readers can make up

their own mind on this issue. Aspiring members of the occupation would also be well advised to understand their heritage.

Non-academics would also find this book worthwhile and enjoyable. Despite the fact that McKenna hails from Oxford, he writes in a manner that can be appreciated by all. The book is a social history in the sense that it provides a strong narrative of events. There is very little in the way of quantitative evidence or theoretical exposition. The author has quite wisely pushed much of the detail and the numbers to the notes. What remains can be appreciated as a story of powerful firms and their influential leaders who by virtue of good timing, piercing insight, and fortunate positioning made a difference in the trajectory of events over close to 100 years.

Those that would prefer to delve into the substance that consultants offer their clients would not find much satisfaction in this book. Those looking for a “How To” book had better look elsewhere. That what consultants have offered varied over time, and in many ways reflected the current state and dominant needs of US business. I doubt that this accumulation should be taken as constructing a compendium of consultant knowledge. Most readers will recognize the occasional product or approach as they have waxed and waned in popularity over the years.

In sum, I recommend the book, despite the fact that I remain skeptical about my students as consultants. My appreciation for the industry or the trade has grown as a result of McKenna’s excellent contribution.

REFERENCE

Abbott, A. (1988). *A system of professions*. Chicago: University of Chicago Press.

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More Than a Numbers Game: A Brief History of Accounting

By Thomas A. King. Wiley, Inc., 2006.

Reviewed by Kevin Carduff

Case Western Reserve University

This book attempts to synopsise the development of accounting practice over the years by reflecting upon the history of accounting, how it developed, and specific issues with which the accounting profession has struggled. The author is not attempting to write a technical book on double-entry accounting. He acknowledges there are enough of those. Rather, he attempts to present a narrative of accounting knowledge for the non-accountant. While accounting has been dubbed “the language of business,” the author contends that accounting is not a complete language, but a collection of four dialects: financial, managerial, taxation, and statutory (government regulation). Given this development, the author explains that much of the difficulty in developing cohesive accounting principles and standards is due to the fact that these four dialects have different (and sometimes conflicting) objectives and the audiences with whom to communicate.

The author details the history of the development of double-entry accounting, and describes the emergence of modern financial accounting when the railroads created the market need for condensed financial reports to outside investors and government regulators. Prior to the railroads, most accounting information was produced for the manager/owner of an entity, and focused primarily on the internal operations to “keep stock” for the owners. However, once large corporations with a large, dispersed ownership structure developed, financial accounting changed and was required to develop new methods to communicate with a large pool outside investors and ever growing regulatory bodies. This shift started the development of the author’s different dialects of accounting knowledge because the owners needed profit statements, divisional managers required detailed production information, taxing authorities wanted revenue information, and various regulatory bodies needed various levels of information. To demonstrate these dialects, the author focuses upon certain areas of accounting, which have been discussed and debated over the years. These topics include taxes, accounting standards, inflation, intangibles, stock options, earnings, and most recently SOX.

Besides providing a glimpse into the history of accounting, the author has a belief that some of the difficulty accounting professionals have encountered with providing relevant accounting information to the investing public is we have ignored three key finance research ideas of the past 40 years. These research ideas are the efficient market hypothesis (EMH), the capital asset pricing model (CAPM), and the Black-Scholes option pricing model. He believes these are important developments in financial modeling and have the ability for accountants to provide better accounting information to the public; however, professional management and the accounting profession have ignored these empirical models, in favor of their professional judgment in presenting reliable accounting information to the market. Another undue influence on accounting policy has been the ever-changing nature of politics from within the profession and outside governing bodies. The author contends this influence has repeatedly prevented the accounting standard setting process from establishing clear guidelines for financial disclosure.

This work has some excellent qualities for someone to begin to understand the nature of accounting. The author provides a concise history of accounting and presents difficult issues in clear language that an accounting novice can understand the conflict and the profession's attempts to resolve the situation. For demonstration purposes, he has devised informative charts and tables regarding the cash flow effects of different accounting treatments in an easy to comprehend manner.

The author cites some historical theory regarding the development of accounting thought; however, he does not have a firm grasp on the literature. He mentions the names of Sprague, Paton, and Littleton; however, it is apparent his exposure to their writings is limited. A review of their writings could be helpful to amend some of the chapters and expand the discussion of the development of accounting practice. Also, I cannot support the author's contention that failure to heed these three scientific research methods has hindered business and the accounting profession. In addition, he often refers to studies that support his theory, but fails to identify any specific research studies. Finally, he began the book by discussing his four dialects of accounting; however, the aspects of financial accounting account for a majority of the discussion. It might be interesting to further explore these three other dialects in future editions.

Overall, this work provides a new insight into the history of accounting. It would be a good textbook to use in a seminar for non-accounting majors at the undergraduate level to discuss how the financial markets work and explore how politics and convention have shaped our accounting practices.