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RESEARCH IN GOVERNMENTAL AND NONPROFIT ACCOUNTING

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RESEARCH IN GOVERNMENTAL AND NONPROFIT
ACCOUNTING VOLUME 12

**RESEARCH IN
GOVERNMENTAL
AND NONPROFIT
ACCOUNTING**

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EDITOR'S COMMENTS

I am pleased to present Volume 12 of *Research in Governmental and Nonprofit Accounting*, the only series dedicated exclusively to governmental and nonprofit accounting and reporting issues. The purpose of *Research in Governmental and Nonprofit Accounting* is to stimulate and report high-quality research on a wide range of governmental and nonprofit accounting topics.

The volume contains 10 research manuscripts, presented in order of acceptance. In addition, Volume 12 contains a monograph by *Gordon and Khumawala* describing varying theories of reporting by nonprofit organizations. In my view the monograph is well suited for students studying accounting theory.

I am indebted to Ed Douthett for his service as Associate Editor and to members of the Editorial Board for serving as reviewers. Most importantly, I extend my sincere thanks to the authors who chose to submit their manuscripts to *Research in Governmental and Nonprofit Accounting*.

This volume is dedicated to the memory of those lost at
Virginia Tech, April 16, 2007, and
Northern Illinois, February 14, 2008.

Paul Copley
Editor

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SECTION I
RESEARCH PAPERS

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DIFFERENCES IN NON-PROFIT ORGANIZATION FINANCIAL STATEMENT AND COMPLIANCE AUDIT ASSESSMENTS BETWEEN BIG 5 AND NON-BIG 5 AUDITORS

Stefanie L. Tate

ABSTRACT

I investigate whether Big 5 auditors provide better assessments than non-Big 5 auditors in a financial statement and compliance audit setting. While prior studies consistently indicate users of financial statements and companies hiring auditors believe there are quality differences between auditors, there is little research on how these quality differences translate into specific differences in auditors' assessments and judgments. Using a database of almost 77,000 compliance and financial statement audit results for non-profit organizations for fiscal years 1997–2000, I find Big 5 auditors report more non-compliance with federal regulations in the form of findings and questioned costs than non-Big 5 auditors, consistent with audit quality theory. However, in contrast to expectations, and after controlling for the number and extent of errors identified by the auditor, I find Big 5 auditors are less likely, rather than more likely, than non-Big 5 auditors to qualify their report on an organization's compliance with

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federal regulations. In addition, in contrast to expectations, I find Big 5 auditors are less likely, rather than more likely, than non-Big 5 auditors to report significant deficiencies in internal controls.

INTRODUCTION

DeAngelo (1981) hypothesizes that audit firms differentiate themselves on quality and larger audit firms have incentives to provide higher quality audits. In addition, much of the audit quality literature indicates that quality differences between Big 5 and non-Big 5 auditors are inferred by both users of financial statements and companies selecting an auditor. However, few studies directly test for the quality differences between auditor types, and the results from those studies have been mixed (for example, see Krishnan & Schauer, 2000; Copley, 1991; Petroni & Beasley, 1996; Colbert & Murray, 1998; O'Keefe, King, & Gaver, 1994). I examine differences in audit assessments made by Big 5 and non-Big 5 auditors in a financial statement and compliance audit setting to identify possible benefits to non-profit organizations of hiring different types of auditors.

Prior research indicates that Big 5 auditors may restrict management's ability to manipulate earnings (Becker, Defond, Jiambalvo, & Subramanyam, 1998; Francis, Maydew, & Sparks, 1999; Davidson & Neu, 1993). However, these studies use indirect measures of earnings manipulation (discretionary accruals and differences between forecasted and audited earnings) and concerns regarding the reliability of these indirect measures limit the interpretability of the results. In addition, outside of earnings management, there has been little research on differences in auditors' other assessments and judgments, and these results have been inconsistent. Without a clearer understanding of the actual differences in more diverse auditor assessments and judgments, clients, users of financial statements, and regulators cannot properly assess what effect audit quality should have on their decisions.

I use a database maintained by the United States Federal Clearinghouse of the results of financial statement and compliance audits performed in accordance with the Office of Management and Budget's (1997) A-133 requirements (A-133 audit). These audits are required for all non-profit organizations receiving significant funding from federal agencies, and require the auditor to issue an opinion on the organization's financial statements, schedule of federal awards, and compliance with federal regulations, in addition to providing a report on the organization's internal

control structure and identified findings and questioned costs. This analysis extends prior research by investigating judgments made by auditors outside of a strictly financial statement setting using multivariate analysis. By investigating the effects of different types of auditors on the reporting of questioned costs, I am also able to estimate possible financial costs to an organization of hiring different types of auditors. Prior studies have been plagued by the inability to adequately control for client characteristics that may influence auditor selection. I control for this self-selection bias by allowing each organization to act as a control for itself, and eliminate the effects of unobservable organizational factors that stay constant over time.

The results, using almost 77,000 observations from 35,950 different non-profit organizations over a 4-year period from 1997 through 2000, are mixed. Using multivariate regression and controlling for organizational factors that do not change over time through the use of different estimation techniques, I find Big 5 auditors report more questioned costs and more findings than non-Big 5 auditors, consistent with audit quality theory. However, in contrast to expectations, and after controlling for the number and extent of errors identified by the auditor, I find Big 5 auditors are less likely (rather than more likely) than non-Big 5 auditors to qualify their report on an organization's compliance with federal regulations and are less likely (rather than more likely) to report deficiencies in internal control structures in the form of reportable conditions.

The remainder of this chapter is laid out as follows. In the next section, I discuss the theory development, followed by background information on A-133 audit requirements. I follow these sections with the hypotheses, methodology, and then the results. I conclude with a discussion on the study limitations, implications, and future research.

THEORY DEVELOPMENT

DeAngelo (1981) defines audit quality as the "market-assessed joint probability that a given auditor will *both* (a) discover a breach in the client's accounting system, and (b) report the breach" (p. 186). DeAngelo hypothesizes that larger audit firms have more ability to specialize and innovate through technology, thereby increasing the likelihood they will discover a breach in the accounting system. She also contends that larger audit firms are more independent from their clients, thereby increasing the likelihood they will report an identified breach. Using these assumptions, DeAngelo hypothesizes that larger firms provide higher quality audits.

Prior research consistently indicates that companies hiring auditors and users of financial statements believe there is a difference in auditors. Results suggest that organizations select larger auditors when agency costs are high (for example, see DeFond, 1992; Firth & Smith, 1992; Simunic & Stein, 1987), and when organizational risk is high (for example, see Datar, Feltham, & Hughes, 1991; Firth & Smith, 1992; Clarkson & Simunic, 1994; Copley, Gaver, & Gaver, 1995; Firth & Liao-Tan, 1998; Lee, Stokes, Taylor, & Walter, 2003).¹ In addition, both Craswell, Francis, and Taylor (1995) and Beattie, Goodacre, Pratt, and Stevenson (2001) find that organizations are willing to pay a fee premium to larger audit firms. There are also generally consistent results that indicate financial statements audited by larger audit firms are relied upon more heavily by decision makers than financial statements audited by smaller audit firms (for example, Allen, 1994; Balvers, McDonald, & Miller, 1988; Beatty, 1989; Teoh & Wong, 1993).

Many measures of quality have been used to test whether larger audit firms actually provide higher quality audits. Becker et al. (1998) and Francis et al. (1999) investigate the relationship between auditor size and discretionary accruals – an indirect measure of earnings management – and find results consistent with DeAngelo's hypothesis. However, studies using earnings forecast errors as a measure of audit quality have not found consistent results. Davidson and Neu (1993) and Clarkson (2000)² find larger audit firms are associated with lower forecast errors, but Firth and Smith (1992) find no differences between large and small audit firms.

Studies using more direct measures of audit quality have also found inconsistent results. Colbert and Murray (1998) and O'Keefe et al. (1994) both use external evaluations of the audit performed (unqualified AICPA Private Companies Section Peer Review reports and indications of violations of generally accepted auditing standards, respectively), and find that larger audit firms do provide higher quality audits. Krishnan and Schauer (2000) find voluntary health and welfare organizations audited by larger audit firms have better financial statement disclosures than organizations audited by smaller audit firms. However, Copley (1991) does not find consistent results that municipalities audited by Big 8 auditors have better financial statement disclosures than non-Big 8 audited municipalities. And Petroni and Beasley (1996) were unable to find any difference in the accuracy of claim loss reserves of property casualty insurers audited by Big 8 firms as compared to insurers audited by non-Big 8 firms.

In summary, prior research consistently shows that organizations and decision makers believe that larger firms provide higher quality audits than

smaller firms. However, research investigating actual differences in the auditor's outputs has resulted in inconsistent results, and these studies have focused mainly on earnings management. The remainder of this chapter seeks to broaden our understanding of the differences in auditor's judgments and assessments between larger and smaller firms.

A-133 BACKGROUND

Non-profit organizations that receive greater than \$300,000³ in federal funding (i.e., grants from federal agencies) are required to have an annual or biennial audit performed in accordance with the Office of Management and Budget's Circular No. A-133 (A-133 audit). This circular requires the auditor to provide opinions on the organization's financial statements, schedule of federal awards, and compliance with federal regulations. The auditor must also provide a report on the organization's internal control system and a schedule of findings and questioned costs.

I focus on the schedule of findings and questioned costs, the auditors' opinion on the organization's compliance with federal regulations, and the auditors' report on the organization's internal control system, each of which is discussed later. When an organization receives federal funds, it must agree to adhere to specific government regulations governing the use of those funds. For example, government regulations require non-profits to adequately monitor subrecipients and submit timely reports to their granting agencies. In addition, government regulations maintain strict regulations over how grant money may be spent and on what types of expenditures. In the A-133 audit, the auditor must assess the organization's compliance with each of the applicable government regulations, noting all instances of non-compliance on the schedule of findings and questioned costs. A finding is a specific instance of non-compliance that does not have a direct financial impact, while a questioned cost would have a financial effect. For instance, not submitting timely progress reports would be considered a finding, while using federal money for unallowable expenditures (alcohol, for instance) would be considered a questioned cost.

After all audit procedures are performed, and all findings and questioned costs are identified, the auditor must form, and provide a report on, their overall opinion on the organization's compliance with federal regulations. In addition, the auditor will review the internal control structure of the organization and provide a report indicating any significant deficiencies in the internal controls. This last report is similar to the report an auditor

would provide to an audit committee or board of directors of a for-profit corporation when there are reportable conditions or material weaknesses in internal controls (AICPA, 2006).

HYPOTHESES

If audit quality is defined as the “market-assessed joint probability that a given auditor will *both* (a) discover a breach in the client’s accounting system, and (b) report the breach” (DeAngelo, 1981, p. 186), higher quality auditors are expected to find and report more compliance and internal control problems than lower quality auditors, assuming the same rate of problems across the auditors’ clients. In an A-133 audit, higher quality auditors are expected to have a better understanding of all government regulations and the requirements for an adequate system of internal controls. A higher quality auditor will design and perform more effective audit tests to identify costs that are questionable, policies that are not in compliance with federal regulations, and significant deficiencies in the internal control structure. In addition, independence is crucial in this type of audit since the results of the audit can have a serious impact on a non-profit organization’s ability to continue managing federal grants. Based on DeAngelo’s theory, higher quality auditors are less likely than lower quality auditors to be influenced by clients’ desires not to include these issues in their A-133 reports.

I test DeAngelo’s hypothesis that larger audit firms provide higher quality audits using the above measures of quality in the A-133 audit setting. Consistent with prior research, I separate audit firms into two size groups – Big 5 and non-Big 5⁴ – and determine whether the larger audit firms report more findings, questioned costs, material non-compliance with federal regulations, and reportable conditions in internal controls.⁵ The four hypotheses are:

H1. Big 5 auditors will report more findings than non-Big 5 auditors, *ceteris paribus*.

H2. Big 5 auditors will report more questioned costs than non-Big 5 auditors, *ceteris paribus*.

H3. Big 5 auditors will report more qualified opinions on an organization’s compliance with federal regulations than non-Big 5 auditors, *ceteris paribus*.

H4. Big 5 auditors will report more reportable conditions in internal control structures than non-Big 5 auditors, *ceteris paribus*.

METHODOLOGY

Data

The entire contents of the Federal Clearinghouse database were downloaded in November 2000. This database consists of all A-133 audit reports and summary reports submitted to the Federal Clearinghouse since 1997.⁶ For this study, an organization could have been included in the database up to four times, assuming they submitted annual reports from 1997 through 2000. There were 87,567 organization-years included in the database. And 6,611 organization-years were excluded from the database because they did not receive a complete financial statement audit, did not receive an annual audit,⁷ or were audited by a state auditor instead of an independent CPA firm. Six hundred sixty observations with going concern opinions, and 221 observations with no data on the going concern opinion were excluded to eliminate potential effects on the regression models of poor financial health.⁸ Finally, 3,118 observations were excluded because the organization filed multiple reports under the same employer identification number (EIN). An organization can file multiple A-133 reports under the same EIN for different divisions, departments, or locations that are under the same management. These items have been excluded from the study to reduce the possibility that year-to-year comparisons do not contain the same reports for each EIN. The remaining sample includes 76,957 organization-years of data, with each organization in the database for an average of 2.15 years. All 76,957 observations are used in the fixed effects models (discussed later). However, an additional 2,628 observations were deleted for use in the changes models (also discussed later) to ensure that only consecutive year changes are included in these models. Fixed effects estimations are not affected by non-consecutive years.

Models: Hypotheses 1 and 2

Actual findings and questioned costs are all instances of non-compliance with federal regulations. Identified findings and questioned costs include

only those costs or client policies that the auditor finds during testwork and reports as not being in compliance with federal regulations. Because auditors do not test 100% of all costs charged to every grant, identified findings and questioned costs are not equivalent to the actuals. Identified findings and questioned costs are a function of the extent of testwork performed by the auditor, the auditors' understanding of the federal regulations, the effectiveness of the auditors' tests, and the willingness of the auditor to report those questioned costs. All of these factors together represent the auditors' quality. Therefore, identified findings and questioned costs, which are what is included in the auditors' reports, and hence the dataset for this study, are expected to be a function of the actual findings and questioned costs, and auditor quality.

Actual findings and questioned costs are hypothesized to be a function of the organization's familiarity with federal regulations, and the complexity and the number of federal regulations to which an organization is subject. Organizations in their first year of receiving federal funds will have less experience with the regulations and will be more likely to make errors. In addition, management is less able to monitor all charges and program requirements as the number and complexity of those programs increase.

Management may be able to mitigate the difficulties in monitoring numerous programs by instituting effective internal controls. Strong internal controls help to ensure that all costs charged to individual grants and all organizational policies are accurate and meet federal regulations; therefore, indications of weak internal controls may also be indications of environments where higher findings and questioned costs are expected. External factors, including regulatory and economic factors, may also have some impact on the occurrence of findings and questioned costs.

The theoretical model for H1 and H2 combine those factors that affect the occurrence of actual findings and questioned costs as discussed earlier, with the quality of the auditor, which affects the identification and reporting of findings and questioned costs. The theoretical model used is

$$\text{Reported Findings or Questioned Costs} = f(\text{Auditor, Familiarity, Complexity, Internal Controls, Time Specific External Factors})$$

By replacing the individual constructs included in the model earlier with observable variables, the actual equations estimated for H1 and H2 become

$$\begin{aligned} \text{FIND}_{it} = & \alpha_i + \beta_1 \text{B5}_{it} + \beta_2 \text{NEW}_{it} + \beta_3 \text{PROG}_{it} + \beta_4 \text{LFED}_{it} + \beta_5 \text{RC}_{it} \\ & + \beta_6 \text{Y98}_t + \beta_7 \text{Y99}_t + \beta_8 \text{Y00}_t + \varepsilon_{it} \end{aligned}$$

and

$$\begin{aligned} \text{QC}\%_{it} = & \alpha_i + \beta_1 \text{B5}_{it} + \beta_2 \text{NEW}_{it} + \beta_3 \text{PROG}_{it} + \beta_4 \text{LFED}_{it} + \beta_5 \text{RC}_{it} \\ & + \beta_6 \text{Y98}_t + \beta_7 \text{Y99}_t + \beta_8 \text{Y00}_t + \varepsilon_{it} \end{aligned}$$

Total number of reported findings (FIND) is the dependent variable for H1. Because questioned costs are limited by the organization's total federal expenditures (the maximum amount of costs that can be questioned is equal to the total expenditures charged to federal grants), questioned costs are scaled by the total dollar amount of costs that could be identified by the auditor; questioned costs reported by the auditor as a percent of total federal expenditures (QC%)⁹ is used as the dependent variable for H2.

The construct of interest is the auditor type. Auditors are separated into two groups – Big 5 and non-Big 5¹⁰ – consistent with prior literature testing DeAngelo's hypothesis. In the fixed effects regressions, the groups were measured using a dummy variable (B5) – "1" for Big 5, "0" otherwise. In the changes models, the change in Big 5 is modeled using two separate dummy variables – UP and DOWN. UP is coded as "1" for organizations changing from a non-Big 5 to a Big 5 auditor, and "0" otherwise, while DOWN is coded as "1" for organizations changing from a Big 5 to a non-Big 5 auditor, and "0" otherwise. This allows for differential effects of going from a Big 5 auditor to a non-Big 5 auditor (theoretically decreasing audit quality) and from a non-Big 5 auditor to a Big 5 auditor (theoretically increasing auditor quality).

Familiarity with federal regulations is measured using the variable NEW. Fiscal year 1997 is the first year the database was maintained and therefore is the first year any organization can be included in the database. For any organization whose first A-133 report in this dataset is after 1997, NEW is coded as "1" in the first year the information is included, and "0" otherwise. An organization can only be coded as NEW once, and only if the first year it is included in the dataset is after 1997.¹¹ The complexity of federal programs is measured by two variables – the total number of programs for which an organization receives funding (PROG) and the natural log of total federal expenditures (LFED).¹² The indication of reportable conditions (RC) is included to control for the quality of the internal control structure and is included in the model as a dummy variable. In the fixed effects model, RC is coded as "1" if there is an indication of poor internal controls, and "0" otherwise. In the changes model, the change in RC is "-1" if the organization has changed from an indication of material internal control

problems to no indication of such problems, “1” if the organization has changed from no material internal control problems to an indication of such problems, and “0” for no change in the quality of the internal control structure. Year dummies (Y98, Y99, and Y00) are included to control for general regulatory and economic environmental factors that change from year to year. A summary of the variable definitions is included in [Table 1](#).

Model: Hypothesis 3

Material non-compliance occurs when an organization does not comply with those regulations that have a material effect on the federal programs under which they are operating. Auditors form their opinion on whether or not an organization has material instances of non-compliance by reviewing the extent and nature of findings and questioned costs identified throughout the audit. Given this, actual material non-compliance is expected to be affected by many of the same factors that affect an organization’s actual findings and questioned costs discussed earlier.

Similar to the previous discussion, actual material non-compliance does not equal reported material non-compliance since the latter is dependent on the quality of the auditor. I estimate the effects of auditor type on the likelihood of an organization receiving a qualified opinion on material compliance by controlling for those organizational factors that are expected to affect actual material compliance, while controlling for the level and extent of reported findings and questioned costs. The equation estimated is

$$\begin{aligned} \text{MNC}_{it} = & \alpha_i + \beta_1 \text{B5}_{it} + \beta_2 \text{NEW}_{it} + \beta_3 \text{PROG}_{it} + \beta_4 \text{LFED}_{it} + \beta_5 \text{RC}_{it} \\ & + \beta_6 \text{FIND}_{it} + \beta_7 \text{QC}\%_{it} + \beta_8 \text{Y98}_t + \beta_9 \text{Y99}_t + \beta_{10} \text{Y00}_t + \varepsilon_{it} \end{aligned}$$

where MNC is a dummy variable indicating whether there was a qualified opinion on compliance with federal regulations. In the fixed effects model, MNC is coded as “0” for an unqualified opinion and “1” otherwise. In the changes model, the change in MNC is coded as “-1” if the organization has gone from a qualified opinion to an unqualified opinion, “1” if the organization has gone from an unqualified opinion to a qualified opinion, and “0” if there has been no change. All other variables are defined as earlier in H1 and H2, and are summarized in [Table 1](#).

Table 1. Descriptions of Independent and Dependent Variables Used in Analyses and Regressions of Data on 76,957 Audits of Federal Fund Recipients Filed with the Federal Audit Clearinghouse between 1997 and 2000.

Acronym	Variable Description
QC% _{it}	Questioned costs identified by the auditor as a percent of total federal expenditures at time t
MNC _{it}	Dummy variable indicating whether there was a qualified opinion on compliance with federal regulations at time t (0 indicates an unqualified opinion, 1 otherwise)
RC _{it}	Dummy variable indicating whether there was at least one reportable condition in internal controls identified at time t (1 indicates at least one internal control reportable condition, 0 otherwise)
FIND _{it}	Total number of findings identified by the auditor at time t
B5 _{it}	Dummy variable indicating Big 5 auditor at time t (1 if Big 5, 0 otherwise)
PROG _{it}	Number of different federal programs at time t
LFED _{it}	Natural log of total federal expenditures at time t
NEW _{it}	Dummy variable indicating whether the current year is the first year that the organization is receiving federal funds (1 if the first year included in the database is not 1997, 0 otherwise)
Y98 _t -Y00 _t	Dummy variables indicating year at time t
UP _{it}	Dummy variable indicating a change in auditor from non-Big 5 to Big 5 from time $t-1$ to t
DOWN _{it}	Dummy variable indicating a change in auditor from Big 5 to non-Big 5 from time $t-1$ to t
Δ MNC _{it}	Dummy variable indicating the change in material non-compliance from time $t-1$ to t (1 indicates change from unqualified opinion to other-than-unqualified opinion, 0 indicates no change, and -1 indicates change from other-than-unqualified to unqualified)
Δ RC _{it}	Dummy variable indicating the change from time $t-1$ to t in the organization's report on internal controls (1 indicates a change from no reportable conditions to at least one reportable condition, 0 indicates no change, and -1 indicates a change from at least one reportable condition to no reportable conditions)
Δ NEW _{it}	Dummy variable indicating if organization is in the second year or later of receiving federal funds (-1 indicates the organization is in the second year of receiving federal funds and 0 indicates the organization is in the third or later year of receiving federal funds)

Model: Hypothesis 4

Reportable conditions in internal controls are “matters that ... represent significant deficiencies in the design or operation of the internal control structure, which could adversely affect the organization’s ability to record, process, summarize, and report financial data ...” (AICPA, 2006). The reporting of reportable conditions is expected to be affected by the quality

of the auditor, as well as organizational factors such as the organization's familiarity with federal programs, the complexity and extent of federal regulations, and the external regulatory and economic factors. The equation used to test H4 is

$$\begin{aligned} RC_{it} = & \alpha_i + \beta_1 B5_{it} + \beta_2 NEW_{it} + \beta_3 PROG_{it} + \beta_4 LFED_{it} + \beta_5 Y98_t \\ & + \beta_6 Y99_t + \beta_7 Y00_t + \varepsilon_{it} \end{aligned}$$

where all variables are defined as earlier under H1 and H2, and are summarized in [Table 1](#).

Model Estimation: Controls for Other Organizational Factors

Organizations select their own auditor. Prior audit quality literature indicates that certain organizational factors such as risk and extent of agency costs are associated with the choice of auditor. These organizational factors may correlate with the dependent variables included in this study, and it is therefore important to control for these to obtain interpretable results. Prior studies have controlled for these other factors by using the [Heckman \(1979\)](#) model, which requires that the auditor selection be modeled first, and then the regression of interest is estimated by including the results of the auditor selection model. However, in this study, because the same organizations are included in the dataset for a number of years, the data is analyzed using fixed effects estimation and first differencing estimation. Both of these estimation techniques consistently estimate the partial effects of observed variables, while controlling for unobserved time-constant effects that may correlate with the variables of interest ([Wooldridge, 2002](#)). In other words, all organizational factors that do not change over time are controlled for, and therefore should have no effect on the results of the study. I contend that because of the short time series of the data (maximum of 4 years), significant organizational factors that could affect the auditor choice will not change significantly during the period of this study.

RESULTS

Descriptive Statistics

[Table 2](#) presents the descriptive statistics for all of the observations included in this study. Total federal expenditures vary considerably, from \$27,055 to

Table 2. Descriptive Statistics for a Sample of 76,957 Audits of Federal Fund Recipients Filed with the Federal Audit Clearinghouse between 1997 and 2000.

Panel A: Descriptive Statistics for all Continuous Variables (All Data)				
Variable	Mean (Median)	Standard deviation	Minimum	Maximum
Federal expenditures (FED)	7,701,029 (1,167,189)	145,000,000	27,055	16,701,635,000
Questioned costs (QC)	9,200 (0)	265,679	0	34,183,000
Questioned cost percent (QC%)	0.20% (0)	3.28%	0	471.67%
Number of programs (PROG)	10.05 (6)	27.44	1	1,605
Findings (FIND)	0.49 (0)	1.65	0	105
Panel B: Descriptive Statistics for all Binary Variables (All Data) – Percentage of Occurrences of a 1				
Variable	All Data (N = 76,957)			
Big 5 (B5)	9.24%			
Material non-compliance (MNC)	3.77%			
Reportable conditions (RC)	22.83%			
New (NEW)	17.25%			

Notes: FED, Total federal expenditures; QC, questioned costs identified by the auditor; QC%, questioned costs identified by the auditor as a percent of total federal expenditures; PROG, number of different federal programs; FIND, total number of findings identified by the auditor; B5, dummy variable indicating Big 5 auditor (1 if Big 5, 0 otherwise); MNC, dummy variable indicating whether there was a qualified opinion on compliance with federal regulations (0 indicates an unqualified opinion, 1 otherwise); RC, dummy variable indicating whether there was at least one reportable condition in internal controls identified (1 indicates at least one internal control reportable condition, 0 otherwise); NEW, dummy variable indicating whether the current year is the first year that the organization is receiving federal funds (1 if the first year included in the database is not 1997, 0 otherwise).

more than \$16.7 billion. The number of programs managed by each organization also varies considerably, from 1 to 1,605. Based on a comparison of the means and medians of federal expenditures and number of programs, it is evident that the data is skewed toward smaller organizations

managing a relatively small number of federal programs. Questioned costs range from \$0 to over \$34 million and findings range from 0 to 105. The low means for both questioned costs and findings are due to the large number of “zero” observations.

Big 5 firms audited 7,113 observations (9.24%) in this dataset. This is very different from audit quality studies using publicly traded corporations in which the majority of observations are audited by the Big 5 audit firms. Almost 4% of the observations (2,901) received a qualified opinion on material compliance with federal regulations (MNC), and 23% of the observations (17,569) had indications of reportable conditions in internal controls. The statistics indicate that many of these organizations have considerable problems with their internal control structures, and therefore may benefit greatly from the external audit.

Table 3 provides a comparison of the means of the regression variables between Big 5 and non-Big 5 audited organizations. Many of the results reported here are consistent with results reported by Keating, Fischer, Gordon, & Greenlee (2005). Organizations audited by Big 5 auditors are

Table 3. Descriptive Statistics – Comparisons of Variables between Auditor Types for 76,957 Audits of Federal Fund Recipients Filed with the Federal Audit Clearinghouse between 1997 and 2000.

Continuous Variables – Means (Medians)

Binary Variables – Percentage of Occurrences of a 1

Variable	Big 5 ($N = 7,113$)	Non-Big 5 ($N = 69,844$)	Comparison
Federal expenditures (FED)	39,100,000 (4,305,967)	4,505,830 (1,074,990)	*
Questioned cost (QC)	52,640 (0)	4,791 (0)	*
Questioned cost percent (QC%)	0.32% (0)	0.19% (0)	*
Number of programs (PROG)	25.47 (9)	8.48 (6)	*
Findings (FIND)	0.90 (0)	0.45 (0)	*
Material non-compliance (MNC)	1.69%	3.99%	*
Reportable conditions (RC)	6.58%	24.48%	*
New (NEW)	13.16%	17.66%	*

*Big 5 audited organizations are statistically different from non-Big 5 audited organizations at a p -value < 0.01.

statistically larger than non-Big 5 audited organizations as evidenced by federal expenditures and number of programs managed. In addition, the Big 5 audited organizations have more findings and more questioned costs than those organizations audited by non-Big 5 auditors. Non-Big 5 audited organizations, however, have more instances of material non-compliance with federal regulations (MNC), and receive more indications of poor internal controls in the form of reportable conditions letters (RC). Although this last finding is in contrast to H3 and H4, these comparisons do not control for differences in sizes of the organizations and other organizational factors that will be included in the multivariate regressions.

Table 4 presents a comparison of the changes in regression variables in the year an organization changed the type of auditor it had (either from a Big 5 to a non-Big 5, or vice versa). In the year of the auditor change, organizations changing from a Big 5 auditor to a non-Big 5 auditor had a larger decrease in the number of reported findings and the level of reported questioned costs than organizations changing from a non-Big 5 to a Big 5 auditor. In addition, organizations changing to a non-Big 5 auditor had a larger increase in the reporting of reportable conditions and a larger decrease in the number of federal programs than all other organizations in the year of the change. Organizations changing to a Big 5 auditor from a non-Big 5 auditor had a larger increase in reported questioned costs in total and questioned costs as a percent of total federal expenditures than organizations not changing their auditor type. Although the differences are not statistically significant, it does appear that organizations changing to a Big 5 auditor showed a larger increase in size as measured by federal expenditures than all other firms.¹³

Hypotheses

The results for H1 (findings) using both a fixed effects and a changes model are included in Table 5. The results from the fixed effects model indicate that Big 5 auditors report statistically more findings than non-Big 5 auditors as hypothesized. The changes model results are consistent with this, with organizations changing from a Big 5 auditor to a non-Big 5 auditor (DOWN) having statistically fewer findings reported in the year of change. Although the coefficient on UP is positive, indicating organizations changing from a non-Big 5 auditor to a Big 5 auditor have more reported findings in the year of change, the coefficient is not statistically significant. The lack of statistical significance could be due to the low number of

Table 4. Descriptive Statistics – Comparisons of Variables between Changes in Auditor Types for 76,957 Audits of Federal Fund Recipients Filed with the Federal Audit Clearinghouse between 1997 and 2000.

Means (Medians)

Variable	Big 5 to Non-Big 5 (<i>N</i> = 309)	No Shift (<i>N</i> = 39,415)	Non-Big 5 to Big 5 (<i>N</i> = 53)	Comparison
ΔFederal expenditures (ΔFED)	218,634 (75,945)	739,966 (45,685)	856,127 (81,560)	ns
ΔQuestioned cost (ΔQC)	-44,405 (0)	-1,229 (0)	154,245 (0)	x,y,z
ΔQuestioned cost percent (ΔQC%)	-0.26% (0)	-0.02% (0)	2.11% (0)	y,z
ΔNumber of programs (ΔPROG)	-1.38 (0)	0.25 (0)	1.49 (1)	x,z
ΔFindings (ΔFIND)	-0.18 (0)	-0.07 (0)	0.30 (0)	z
ΔMaterial non- compliance (ΔMNC)	0.02 (0)	-0.00 (0)	-0.04 (0)	ns
ΔReportable conditions (ΔRC)	0.08 (0)	-0.02 (0)	-0.09 (0)	x,z

Notes: ΔFED, change in total federal expenditures from time $t-1$ to t ; ΔQC, change in questioned costs identified by the auditor from time $t-1$ to t ; ΔQC%, change in questioned costs identified by the auditor as a percent of total federal expenditures from time $t-1$ to t ; ΔPROG, change in number of different federal programs from time $t-1$ to t ; ΔFIND, change in total number of findings identified by the auditor from time $t-1$ to t ; ΔMNC, dummy variable indicating the change in material non-compliance from time $t-1$ to t (1 indicates change from unqualified opinion to other-than-unqualified opinion, 0 indicates no change, and -1 indicates change from other-than-unqualified to unqualified); ΔRC, dummy variable indicating the change from time $t-1$ to t in the organization's report on internal controls (1 indicates a change from no reportable conditions to at least one reportable condition, 0 indicates no change, and -1 indicates a change from at least one reportable condition to no reportable conditions); x, organizations changing from Big 5 to non-Big 5 auditor are statistically different from organizations that did not shift auditor type at $p < 0.05$; y, organizations not shifting auditor type are statistically different from organizations that changed from non-Big 5 to Big 5 auditor at $p < 0.05$; z, organizations changing from Big 5 to non-Big 5 auditors are statistically different from organizations that changed from non-Big 5 to Big 5 auditor at $p < 0.05$; ns, no statistically significant differences.

observations of organizations changing to a Big 5 auditor (53 organization-years). The results on the control variables are consistent with expectations, with organizations new to federal programs, organizations managing more federal programs (measured in both dollars of federal expenditures (LFED)

Table 5. Test of H1: Effect of Auditor Type and Control Variables on Reported Number of Findings for 76,945 Audits of Federal Fund Recipients Filed with the Federal Audit Clearinghouse between 1997 and 2000.

$$\text{FIND}_{it} = \alpha_i + \beta_1 \text{B5}_{it} + \beta_2 \text{NEW}_{it} + \beta_3 \text{PROG}_{it} + \beta_4 \text{LFED}_{it} + \beta_5 \text{RC}_{it} + \beta_6 \text{Y98}_t + \beta_7 \text{Y99}_t + \beta_8 \text{Y00}_t + \varepsilon_{it}$$

$$\Delta \text{FIND}_{it} = \alpha_i + \beta_1 \text{UP}_{it} + \beta_2 \text{DOWN}_{it} + \beta_3 \Delta \text{NEW}_{it} + \beta_4 \Delta \text{PROG}_{it} + \beta_5 \Delta \text{LFED}_{it} + \beta_6 \Delta \text{RC}_{it} + \beta_7 \text{Y99}_t + \beta_8 \text{Y00}_t + \varepsilon_{it}$$

Variable ^a	Expected Sign	Levels ^b (<i>N</i> = 76,945)		Changes ^b (<i>N</i> = 39,771)	
		Coefficient	Standard error	Coefficient	Standard error
B5	+	0.296***	0.0608	NA	NA
UP	+	NA	NA	0.431	0.4735
DOWN	−	NA	NA	−0.193**	0.1014
NEW	+	0.032*	0.0202	0.031**	0.0167
PROG	+	0.002***	0.0008	0.002*	0.0014
LFED	+	0.068***	0.0154	0.063***	0.0152
RC	+	0.906***	0.0188	0.853***	0.0259
Y98	NA	−0.064***	0.0100	NA	NA
Y99	NA	−0.103***	0.0107	0.025	0.0152
Y00	NA	−0.158***	0.0352	−0.006	0.0244
Constant	NA	−0.674***	0.2177	−0.067***	0.0107

Notes: UP, Dummy variable indicating a change in auditor from non-Big 5 to Big 5 from time $t-1$ to t ; DOWN, dummy variable indicating a change in auditor from Big 5 to non-Big 5 from time $t-1$ to t ; Δ NEW, dummy variable indicating if organization is in the second year or later of receiving federal funds (−1 indicates the organization is in the second year of receiving federal funds and 0 indicates the organization is in the third or later year of receiving federal funds); LFED, natural log of total federal expenditures; Y98–Y00, dummy variables indicating year. $R^2 = .06$ and $.05$ for levels and changes models, respectively. *, **, *** Significant at 10%, 5%, and 1% levels, respectively, based on one-sided t -tests for all variables with predicted signs equal to actual signs. For variables without predicted signs, and for those whose actual sign are different than predicted, p -values are based on two-sided tests. P -values for the changes model are based on standard errors robust to general serial correlation and heteroskedasticity.

^aIn the changes model, the variables in the regression are the changes from time $t-1$ to t for each variable except as stated later and for the change in B5, which is broken down into two variables – UP and DOWN.

^bThe levels model is estimated by fixed effects OLS using all of the data. The changes model is estimated using OLS estimation, and an observation was eliminated if there was more than one year between it and the next year.

and number of federal programs (PROG)), and organizations with reportable conditions (RC) also having more reported findings. The negative coefficients on the time dummy variables may indicate that organizations improve their processes over time, and therefore reduce the number of findings over time.

The results for H2 (questioned costs) are reported in Table 6. These results are less robust, with a statistically significant positive coefficient on B5 only in the fixed effects model. Although the sign of the coefficients on UP and DOWN in the changes model are consistent with the hypothesis, they are not statistically significant. Even with these results, we can estimate the dollar effect of hiring either a Big 5 or a non-Big 5 auditor to an organization. Using average federal expenditures, the results from the fixed effects model indicate that Big 5 auditors report, on average, more than \$35,000 more in questioned costs than non-Big 5 auditors. Estimates based on the changes model indicate that organizations changing to a Big 5 auditor can expect an average increase in reported questioned costs of over \$166,000 in the year of change, and organizations changing to a non-Big 5 auditor can expect an average decrease of over \$21,000 in reported questioned costs in the year of change. Although the results from the changes model are not statistically significant, an estimated increase of \$166,000 in reported questioned costs for any organization may be significant to their operations. The results on the control variables in both models indicate organizations with reportable conditions (RC) have more reported questioned costs, but there is no statistically significant effect of familiarity with federal programs (NEW) and the number of federal programs (PROG) managed on the level of reported questioned costs. The negative coefficient on the log of federal expenditures indicates that questioned costs do not increase ratably with federal expenditures.

The results for the testing of H3 (material non-compliance) are included in Table 7. Contrary to expectations, the levels model indicates that the Big 5 auditors are not statistically more likely to provide qualified opinions on organizations' compliance with federal regulations, but in fact are statistically less likely to provide a qualified opinion on compliance. The changes model results are consistent with the levels model – and inconsistent with the hypothesis – with organizations changing to a non-Big 5 auditor (DOWN) more likely to receive a qualified opinion and organizations changing to a Big 5 auditor (UP) less likely (although not statistically significant) to receive a qualified opinion. Again, the small sample could contribute to the lack of statistical significance for UP. As expected, qualified opinions on material compliance increase as internal control

Table 6. Test of H2: Effect of Auditor Type and Control Variables on Reported Questioned Costs for 76,836 Audits of Federal Fund Recipients Filed with the Federal Audit Clearinghouse between 1997 and 2000.

$$QC\%_{it} = \alpha_i + \beta_1 B5_{it} + \beta_2 NEW_{it} + \beta_3 PROG_{it} + \beta_4 LFED_{it} + \beta_5 RC_{it} + \beta_6 Y98_t + \beta_7 Y99_t + \beta_8 Y00_t + \varepsilon_{it}$$

$$\Delta QC\%_{it} = \alpha_i + \beta_1 \Delta UP_{it} + \beta_2 \Delta DOWN_{it} + \beta_3 \Delta NEW_{it} + \beta_4 \Delta PROG_{it} + \beta_5 \Delta LFED_{it} + \beta_6 \Delta RC_{it} + \beta_7 \Delta Y99_t + \beta_8 \Delta Y00_t + \varepsilon_{it}$$

Variable ^a	Expected Sign	Levels ^b (<i>N</i> = 76,836)		Changes ^b (<i>N</i> = 39,682)	
		Coefficient	Standard error	Coefficient	Standard error
B5	+	0.005***	0.0014	NA	NA
UP	+	NA	NA	0.022	0.0187
DOWN	-	NA	NA	-0.003	0.0037
NEW	+	-0.001	0.0005	-0.001	0.0005
PROG	+	-0.000	0.0000	-0.000	0.0000
LFED	+	-0.001***	0.0003	-0.001	0.0007
RC	+	0.004***	0.0004	0.004***	0.0007
Y98	NA	-0.000	0.0002	NA	NA
Y99	NA	-0.000	0.0002	-0.000	0.0004
Y00	NA	-0.000	0.0008	-0.000	0.0005
Constant	NA	0.017***	0.0049	-0.000	0.0003

Notes: $R^2 = .003$ and $.003$ for levels and changes models, respectively. *, **, *** Significant at 10%, 5%, and 1% levels, respectively, based on one-sided *t*-tests for all variables with predicted signs equal to actual signs. For variables without predicted signs, and for those whose actual sign are different than predicted, *p*-values are based on two-sided tests. *P*-values for the changes model are based on standard errors robust to general serial correlation and heteroskedasticity.

^aIn the changes model, the variables in the regression are the changes from time $t-1$ to t for each variable except as stated later and for the change in B5, which is broken down into two variables – UP and DOWN.

^bThe levels model is estimated by fixed effects OLS using all of the data. The changes model is estimated using OLS estimation, and an observation was eliminated if there was more than one year between it and the next year.

deficiencies (RC), the number of findings (FIND), and the level of questioned costs increase (QC%). The number of programs managed by an organization (PROG) does not have an effect on the reporting of material non-compliance, nor does the familiarity of the organization with federal programs (NEW).

Table 7. Test of H3: Effect of Auditor Type and Control Variables on Reported Material Non-Compliance for 76,836 Audits of Federal Fund Recipients Filed with the Federal Audit Clearinghouse between 1997 and 2000.

$$\text{MNC}_{it} = \alpha_i + \beta_1 \text{B5}_{it} + \beta_2 \text{NEW}_{it} + \beta_3 \text{PROG}_{it} + \beta_4 \text{LFED}_{it} + \beta_5 \text{RC}_{it} + \beta_6 \text{FIND}_{it} \\ + \beta_7 \text{QC}\%_{it} + \beta_8 \text{Y98}_t + \beta_9 \text{Y99}_t + \beta_{10} \text{Y00}_t + \varepsilon_{it}$$

$$\Delta \text{MNC}_{it} = \alpha_i + \beta_1 \text{UP}_{it} + \beta_2 \text{DOWN}_{it} + \beta_3 \Delta \text{NEW}_{it} + \beta_4 \Delta \text{PROG}_{it} + \beta_5 \Delta \text{LFED}_{it} + \beta_6 \Delta \text{RC}_{it} \\ + \beta_7 \Delta \text{FIND}_{it} + \beta_8 \Delta \text{QC}\%_{it} + \beta_9 \text{Y99}_t + \beta_{10} \text{Y00}_t + \varepsilon_{it}$$

Variable ^a	Expected Sign	Levels ^b (<i>N</i> = 76,836)		Changes ^b (<i>N</i> = 39,682)	
		Coefficient	Standard error	Coefficient	Standard error
B5	+	-0.020**	0.0090	NA	
UP	+	NA	NA	-0.047	0.0381
DOWN	-	NA	NA	0.018*	0.0101
NEW	+	0.003	0.0030	0.003	0.0029
PROG	+	0.000	0.0001	0.000	0.0001
LFED	+	0.004*	0.0023	-0.001	0.0027
RC	+	0.070***	0.0029	0.064***	0.0057
FIND	+	0.019***	0.0007	0.019***	0.0029
QC%	+	0.520***	0.0327	0.531***	0.0978
Y98	NA	-0.001	0.0015	NA	
Y99	NA	-0.002	0.0016	0.000	0.0024
Y00	NA	0.001	0.0052	0.002	0.0045
Constant	NA	-0.038	0.0322	-0.001	0.0015

Notes: $R^2 = .05$ and $.04$ for levels and changes models, respectively. *, **, *** Significant at 10%, 5%, and 1% levels, respectively, based on one-sided *t*-tests for all variables with predicted signs equal to actual signs. For variables without predicted signs, and for those whose actual sign are different than predicted, *p*-values are based on two-sided tests. *P*-values for the changes model are based on standard errors robust to general serial correlation and heteroskedasticity.

^aIn the changes model, the variables in the regression are the changes from time $t-1$ to t for each variable except as stated later and for the change in B5, which is broken down into two variables – UP and DOWN.

^bThe levels model is estimated by fixed effects OLS using all of the data. The changes model is estimated using OLS estimation, and an observation was eliminated if there was more than one year between it and the next year.

Table 8 presents the results for the test of H4 on the effects of the type of auditor on the reporting of reportable conditions in internal controls. Again, the results are in direct contrast to expectations. Given the statistically significant negative coefficient on B5 in the fixed effects model, the statistically significant positive coefficient on DOWN, and the negative,

Table 8. Test of H4: Effect of Auditor Type and Control Variables on Reported Reportable Conditions in Internal Controls for 76,945 Audits of Federal Fund Recipients Filed with the Federal Audit Clearinghouse between 1997 and 2000.

$$RC_{it} = \alpha_i + \beta_1 B5_{it} + \beta_2 NEW_{it} + \beta_3 PROG_{it} + \beta_4 LFED_{it} + \beta_5 Y98_t + \beta_6 Y99_t + \beta_7 Y00_t + \varepsilon_{it}$$

$$\Delta RC_{it} = \alpha_i + \beta_1 UP_{it} + \beta_2 DOWN_{it} + \beta_3 \Delta NEW_{it} + \beta_4 \Delta PROG_{it} + \beta_5 \Delta LFED_{it} + \beta_6 Y99_t + \beta_7 Y00_t + \varepsilon_{it}$$

Variable ^a	Expected Sign	Levels ^b (N = 76,945)		Changes ^b (N = 39,771)	
		Coefficient	Standard error	Coefficient	Standard error
B5	+	-0.107***	0.0160	NA	NA
UP	+	NA	NA	-0.076	0.0667
DOWN	-	NA	NA	0.098***	0.2297
NEW	+	0.018***	0.0053	0.20***	0.0049
PROG	+	0.000	0.0002	0.000	0.0002
LFED	+	0.011***	0.0041	0.012***	0.0046
Y98	NA	-0.020***	0.0026	NA	NA
Y99	NA	-0.037***	0.0028	0.004	0.0043
Y00	NA	-0.068***	0.0093	-0.014*	0.0085
Constant	NA	0.093	0.0572	-0.020***	0.0026

Notes: $R^2 = .01$ and $.001$ for levels and changes models, respectively. *, **, *** Significant at 10%, 5%, and 1% levels, respectively, based on one-sided t -tests for all variables with predicted signs equal to actual signs. For variables without predicted signs, and for those whose actual sign are different than predicted, p -values are based on two-sided tests. P -values for the changes model are based on standard errors robust to general serial correlation and heteroskedasticity.

^aIn the changes model, the variables in the regression are the changes from time $t-1$ to t for each variable except as stated later and for the change in B5, which is broken down into two variables – UP and DOWN.

^bThe levels model is estimated by fixed effects OLS using all of the data. The changes model is estimated using OLS estimation, and an observation was eliminated if there was more than one year between it and the next year.

although not statistically significant, coefficient on UP in the changes model, the results do not support the hypothesis that Big 5 audited organizations are more likely than non-Big 5 audited organizations to receive indications of reportable conditions. In fact, the results suggest that Big 5 auditors are less likely than non-Big 5 auditors to report significant deficiencies in the internal control structure of an organization, after controlling for the size of the organization, the familiarity of the organization with federal regulations,

the complexity of the federal regulations, and other unobserved organizational factors that do not change over time. Larger organizations, as measured by the log of federal expenditures (LFED), and organizations new to federal programs are more likely to receive reportable conditions indications, but the number of programs does not appear to have an effect on the reporting of internal control deficiencies.

Sensitivity Test: Appropriateness of the Size Measure

An organization could conceivably be very large, but only manage a small number of federal programs, and therefore federal expenditures may not be a reasonable proxy for the organization's size. To determine if this was, on average, true I determined the correlation between federal expenditures and proxies for size used in other studies. For a representative sample¹⁴ of 494 observations from the database, I obtained other financial variables from the organizations' Form 990's that could be used to measure size, including total assets, total expenditures, and total revenues. The correlations between these other measures and total federal expenditures (the variable used in this study) were all greater than 0.91 and were all highly significant (two tailed p -value < 0.00). Therefore, the measure used appears to be a reasonable proxy for the organization's size.

Sensitivity Test: Controlling for Size

From Table 3, it is obvious that Big 5 auditors audit larger organizations. The size of the organization is controlled for in three ways in the regressions reported – the log of federal expenditures and the number of federal programs are both explicitly included in the regressions and the organizations act as their own controls in both the fixed effects and first differencing models. In the fixed effects model all variables are time-demeaned, while in the first differencing model all variables are differenced over time. Variables that stay constant over time will be eliminated from the models, and therefore if the organization's size does not change considerably from one year to the next, the estimation techniques will serve to control for the effect of size in the regressions.

An additional test was also performed to determine if size is driving the results obtained. The test included matching observations on average federal expenditures. Almost 4,000 observations with a Big 5 auditor were matched

with a non-Big 5-audited organization with similar average federal expenditures. An organization was considered to be similar if its average federal expenditures were within 10% of the average federal expenditures of the Big 5-audited observation. Using this matched data the same regressions were estimated. The results for this matched sample are consistent with the previously reported results for each of the hypotheses, except for H3 – material non-compliance. Although the direction of the coefficient on Big 5 is negative, it is not statistically significant. This non-significant result may be due to the small number of observations that had indications of material non-compliance – only 187 observations, or less than 3% of the total sample.

Sensitivity Test: Regression Estimation

The regressions for H1 and H2 were re-estimated using tobit estimation due to the large number of observations in the dataset that have a zero value. The results from these regressions both indicate a significantly positive coefficient on B5, indicating that Big 5 auditors report more findings and questioned costs than non-Big 5 auditors. The tobit estimations cannot control for unobserved organizational factors like the fixed effects and changes models, and therefore they are not reported in detail in this chapter.

The regressions for H3 and H4 were re-estimated using fixed effects logit estimation and are reported in [Table 9](#). The results for both regressions are consistent with those found in the fixed effects regression results reported earlier, with Big 5 auditors reporting less material non-compliance with federal regulations and less reportable conditions in internal controls than non-Big 5 auditors. Reportable conditions, number of findings, and questioned costs as a percent of federal expenditures are all positive and statistically significant in the material non-compliance regression (MNC – H3), consistent with the results reported in [Table 7](#).

Sensitivity Test: NEW

The variable NEW is used to proxy for the familiarity of the organization with federal grant requirements, and is coded as “1” in the first year that an organization is included in the database if that year is not 1997. NEW is coded as zero for all organizations in 1997 because that is the first year of the database, and therefore is the first year that all organizations are included

Table 9. Alternative Tests of H3 and H4: Effect of Auditor Type and Control Variables on Reported Material Non-Compliance and Reportable Conditions in Internal Controls for 76,957 Audits of Federal Fund Recipients Filed with the Federal Audit Clearinghouse between 1997 and 2000.

$$\text{MNC}_{it} = \alpha_i + \beta_1 \text{B5}_{it} + \beta_2 \text{NEW}_{it} + \beta_3 \text{PROG}_{it} + \beta_4 \text{LFED}_{it} + \beta_5 \text{RC}_{it} + \beta_6 \text{FIND}_{it} \\ + \beta_7 \text{QC\%}_{it} + \beta_8 \text{Y98}_t + \beta_9 \text{Y99}_t + \beta_{10} \text{Y00}_t + \varepsilon_{it}$$

$$\text{RC}_{it} = \alpha_i + \beta_1 \text{B5}_{it} + \beta_2 \text{NEW}_{it} + \beta_3 \text{PROG}_{it} + \beta_4 \text{LFED}_{it} + \beta_5 \text{Y98}_t + \beta_6 \text{Y99}_t \\ + \beta_7 \text{Y00}_t + \varepsilon_{it}$$

Fixed Effects – Logit Estimation					
Variable	Expected sign	N = 3,725 H3 – MNC ^a		N = 11,395 H4 – RC ^a	
		Coefficient	Standard error	Coefficient	Standard error
B5	+	-1.512**	0.6894	-1.405***	0.2455
NEW	+	0.197	0.1798	0.422***	0.0949
PROG	+	0.021	0.0135	0.001	0.0028
LFED	+	0.140	0.1281	0.199***	0.0631
RC	+	1.464***	0.1194	NA	NA
FIND	+	0.331***	0.0341	NA	NA
QC%	+	9.417***	2.0527	NA	NA
Y98	NA	-0.021	0.0817	-0.302***	0.0412
Y99	NA	-0.133	0.0911	-0.578***	0.0449
Y00	NA	0.145	0.3679	-1.320***	0.1862

Note: *, **, *** Significant at 10%, 5%, and 1% levels, respectively, based on one-sided *t*-tests for all variables with predicted signs equal to actual signs. For variables without predicted signs, and for those whose actual sign are different than predicted, *p*-values are based on two-sided tests.

^aBoth models were estimated using fixed effect logit estimation. All observation-years for an organization are dropped from the model estimation if there was no change over time in the dependent variable.

in the database. If an organization received federal funds for the first time in 1997, although they are “new” to federal programs, NEW would still be coded as zero. To determine if this miscoding affects the results, all 1997 data were eliminated and the same equations were estimated for each hypothesis using the fixed effects and changes models, in addition to the tobit and logit models for the appropriate hypotheses.

The results from these tests are mixed. The fixed effects and first differencing estimations of the questioned costs regression (H2) and reportable conditions regression (H4) are consistent in magnitude, direction, and significance with those reported in [Tables 6 and 8](#), respectively. The tobit estimation results for the questioned costs regression are also consistent with those obtained with all of the data, as is the fixed effects logit regression for reportable conditions. The results for the findings regression (H1) using only data from 1998 and beyond were not statistically significant for the fixed effects, first differencing or tobit estimations. And the results for the material non-compliance regressions (H3) using the reduced dataset were only marginally significant (two-tailed p -value < 0.10) for the fixed effects estimation and not statistically significant for the first differencing or fixed-effects logit estimations, although the estimated coefficient in all of the regressions was consistent in sign with previously reported results.

When the 1997 data is eliminated from the population, the number of observations drops from 76,957 to 54,379. In addition, the average number of years that an organization is included in the database drops from 2.1 with the 1997 data included, to 1.7 without the 1997 data.¹⁵ Both of these decreases could account for the inconsistent results found with the smaller dataset. Much of the power for the tests of the hypotheses comes from the large number of observations included in the estimation. In addition, both the fixed effects and changes models rely on organizations remaining in the sample for at least 2 years; any reduction in the average number of years that an organization is included in the dataset will have detrimental effects on the power of the tests. Given that the signs of the coefficients in each of the regressions with the reduced dataset are consistent in all models with those obtained with the full dataset, the results of this additional analysis indicate that the potential miscoding of the variable “NEW” does not greatly affect the results reported earlier (see additional discussion in the following section).

DISCUSSION

As with prior audit quality research, the results of this study are mixed. However, where other studies have found either a significant positive relationship between audit quality and Big 5 audit firms or no relationship, this study finds a significantly positive relationship for some measures and a significantly negative relationship for other measures. Big 5 auditors appear to provide higher quality audits if quality is measured by the number of

findings and questioned costs reported but not if quality is measured as the opinion on material compliance with federal regulations or the reporting of deficiencies in the internal control structure. The results on these last two measures indicate that not only do Big 5 auditors not report more material non-compliance and reportable conditions, they in fact report statistically less material non-compliance and fewer reportable conditions than non-Big 5 auditors. These results, coupled with results found in earlier studies, indicate a continued need to determine the true nature of the relationship between auditor size and audit quality.

One possible explanation consistent with the results of this study might be that Big 5 auditors have a different level of materiality than non-Big 5 auditors. Since materiality is not considered when reporting identified findings and questioned costs (A-133 regulations require that all items identified must be reported, regardless of magnitude), a higher materiality limit would not affect the Big 5 auditors' reporting of findings and questioned costs. However, for both the opinion on compliance and report on internal controls, the auditor must assess the materiality of the non-compliance and internal control deficiencies. Big 5 auditors may have a higher materiality limit, and therefore fewer clients would receive qualified opinions on compliance and reportable conditions in internal controls.¹⁶ Future studies might investigate the decision processes of auditors in each firm type and determine if materiality levels are different.

Another possible explanation for the inconsistent findings is that risk, or some other correlated factor, is not adequately controlled for, and that the omitted factor has a differential effect on the reporting of findings/questioned costs and the reporting of material non-compliance. Risk in non-profit organizations is a function of revenue generation and diversification, degree of regulation, age of the organization, general economic factors, debt levels, and liquidity.¹⁷ Federal expenditures is one potential measure of revenue generation, as all federal expenditures are fully funded by federal grants. The number of programs provides one measure of the degree of regulation, since the number of programs is correlated with the number of federal agencies to which an organization reports. The variable "NEW" included in the regressions may be one reasonable measure of the age of the organization, and the year dummies help to control for general economic factors. Other risk measures related to revenue diversification, debt levels, and liquidity are not controlled for in these analyses because the data was not available within the dataset. If any of these risk factors correlate with the reporting of findings and questioned costs in a significantly different manner than they correlate with the reporting of material non-compliance

and reportable conditions, the results reported could be affected. Future research will need to investigate these other risk factors.

The conflicting findings from this study may also be an indication that we need to revisit how the audit quality theory suggested by DeAngelo (1981) relates to non-profit organizations. It is not certain that the Big 5/non-Big 5 designation has the same quality implications for non-profit organizations as it does for for-profit corporations. GAAP for non-profit organizations is different than GAAP for for-profit corporations (for example, non-profit organizations are required to follow Statement of Financial Accounting Standards Nos. 116 and 117, *Accounting for Contributions Received and Contributions Made* and *Financial Statements of Not-for-Profit Organizations*, respectively, while for-profit corporations are not). The audit requirements for non-profit organizations receiving federal funds are different and more extensive than those for financial statement audits of for-profit corporations. In addition, the risk structure of non-profit organizations is different as there are no owners to whom the auditors report; therefore the litigation environment is different. And finally, many non-profit organizations cannot afford to pay the significantly higher fees that larger audit firms must charge to recover their higher overhead costs. It is possible that Big 5 audit firms could self-select not to be experts in non-profit auditing given the extensive rules and requirements, and therefore not be the highest quality audit provider in this industry.

The data used in this study also provides a rich environment for additional research. A large number of organizations in the dataset have poor internal control structures, and may therefore provide an excellent setting to test the effects of the adequacy of internal controls on organizational performance or occurrence of fraud. In addition, future research might investigate whether organizations compensate for their poor internal control structures when controlling for agency costs with other techniques, such as having a more active board of directors or selecting higher quality auditors.

NOTES

1. Titman and Trueman (1986) and Thornton and Moore (1993) provide analytical models that suggest higher risk firms would select lower quality auditors, as opposed to higher quality auditors. Simunic and Stein (1987) find empirical results consistent with this hypothesis, and Feltham, Hughes, and Simunic (1991) find no consistent significant results. These earlier studies do not control for audit fee, or audit supply, which can have a significant impact on the results. The later studies that find a positive relationship control for the audit supply effect.

2. Clarkson (2000) is unable to replicate Davidson and Neu's (1993) results when additional measures of client risk are included in the model.

3. In June 2003, the amount was raised to \$500,000.

4. In another analysis, I split the firms into three categories – Big 5, national, and other – expecting quality to decrease from Big 5 to national to other. BDO Seidman, Grant Thornton, and McGladrey and Pullen were considered national firms based on their level of revenues and number of offices. The results are unchanged from those reported in this study; national firms act similarly to non-Big 5 firms with respect to the relationships studied here.

5. Prior studies have also used auditor specialization as a measure of audit quality. In a supplemental analysis, I test three auditor types – market leader, non-market leader Big 5, and non-market leader non-Big 5 – in the regressions. The overall comparison between Big 5 and non-Big 5 in that analysis are consistent with this study. However, the results of comparisons within the Big 5 – between the market leader and non-market leader Big 5 – depend on the hypothesis tested and the statistical estimation method used. The detailed results are not included in this study.

6. The database is accessible at <http://harvester.census.gov/sac>.

7. A-133 regulations allow organizations to have only their federal programs audited and also allow organizations to have a biennial audit.

8. All regression analyses were also performed with the 660 going concern observations included, and the results are unchanged from those reported.

9. The absolute value of total questioned costs is used as there are a few observations where total questioned costs are negative. Negative questioned costs can result from differences between total federal expenditures from federal agency documentation and total federal expenditures from the organization's documentation. This usually occurs when there is a federal reimbursement check in transit. Results do not change when these negative observations are eliminated. In addition, the signs and significance of coefficients are not changed when questioned costs instead of scaled questioned costs is used to test H2.

10. This study spans the period in which Price Waterhouse merged with Coopers and Lybrand. Organizations audited by either of these two firms, or the merged firm, were coded as being audited by "PWC."

11. See additional discussion about the variable NEW and a sensitivity analysis in the section "Results."

12. All regressions were run using other transformations of these two variables, including the natural log of total programs and total, non-logged federal expenditures. The results for these regressions are consistent with those reported in the tables.

13. Pearson correlation coefficients between all of the independent and dependent variables used in the study were calculated, and many were significant. However, it is not expected that these significant correlations will introduce a collinearity problem in the analyses.

14. The sample was selected using a stratified random sampling technique to obtain a sample with similar characteristics on the dependent variables as those in the complete dataset.

15. When the 1997 data is deleted, approximately 12,100 of the 54,400 observations represent organizations with only 1 year of data in the remaining dataset. The fixed effects estimation technique time-demeans each observation,

meaning that the organization average for each variable is subtracted from the actual variable value. For organizations with only 1 year of data, the average and the actual value for each variable is the same, and the time-demeaned values (or values used in the regression estimation) are zero. Therefore, although these organizations still remain in the dataset and in the regression, they have no effect on the regression results. (Wooldridge, 2000).

16. Using only observations that had findings or questioned costs, I performed a preliminary test of this possibility. I compared average findings and average scaled questioned costs between Big 5-audited observations and non-Big 5 observations that had indications of material noncompliance. For organizations with no questioned costs, average findings for Big 5-audited organizations and non-Big 5-audited organizations are 3.21 and 2.65, respectively. These are significantly different at p -value < 0.08 . For organizations that had both findings and questioned costs, the average findings and scaled questioned costs for Big 5-audited organizations are 13.8% and 9.9%, respectively, while they are 4.1% and 7.7%, respectively, for non-Big 5-audited organizations. Average findings are significantly different from one another at p -value < 0.00 , and although scaled questioned costs are larger for Big 5 audited organizations, the difference is not statistically significant. The preliminary results do appear to support the notion that Big 5 auditors may have a higher threshold for determining when noncompliance becomes material.

17. These are generally consistent with risk measures in for-profit corporations that include leverage, growth, debt ratings, age, and asset composition.

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FUNDAMENTAL ANALYSIS OF NOT-FOR-PROFIT FINANCIAL STATEMENTS: AN EXAMINATION OF FINANCIAL VULNERABILITY MEASURES

Linda M. Parsons and John M. Trussel

ABSTRACT

Using data from the Internal Revenue Statistics of Income, we examine fundamental variables to determine whether nonprofit financial ratios are value-relevant to financial statement users, specifically donors. We focus on measures of financial vulnerability, defined as an organization's ability to continue to operate and provide charitable services in the event of changed economic circumstances. The evidence suggests that financial vulnerability measures provide donors with incremental information beyond that contained in efficiency ratios.

1. INTRODUCTION

An important function of accounting and financial reporting is to assist in the analysis and evaluation of organizations. Beginning with the pivotal

work of Ball and Brown (1968), capital markets research has demonstrated the usefulness of earnings in explaining stock returns. Lev and Thiagarajan (1993) show that other fundamental variables in financial statements, such as gross margin and the ratio of inventory to sales, convey incremental information that is useful in analyzing company performance. Using many of the ratios and measures identified by Lev and Thiagarajan, Abarbanell and Bushee (1997) find that fundamental analysis assists decision-making by market participants.

Not-for-profit (NFP) organizations often serve as brokers that collect funds from donors and grantors and distribute them to the intended beneficiaries. Stakeholders, such as donors and grant-making entities, often rely on financial reports to assess the operational performance and financial management of charitable organizations (Gordon & Khumawala, 1999). Anthony and Young (2003) contend that financial analysis of nonprofit financial reports is valuable for assessing an organization's financial management. There is not a profit motive or an ability to reward equity stakeholders, so earnings information is not as useful in a NFP setting as in a for-profit one. It is therefore important to determine which accounting measures provide financial statement readers with useful information for evaluating the operations of NFP firms.

To date, NFP researchers have focused almost exclusively on the program ratio, which measures the proportion of expenditures that are dedicated to an organization's charitable purpose. A number of studies, starting with Weisbrod and Dominguez (1986), demonstrate the positive relationship of donations with efficiency measures such as the program ratio. This line of research supports the idea that a measure of efficiency, defined as the percentage of total expenditures directed toward the charitable mission, is important to donors making/giving decisions (Parsons, 2003).

We explore other fundamental variables in NFP financial statements to determine whether financial measures other than those that gauge efficiency are useful to financial statement users, specifically donors. We focus on measures of financial vulnerability, defined as an organization's ability to continue to operate and provide charitable services in the event of changed economic circumstances (e.g., reduction in contributions) (Parsons, 2003). The evidence we present suggests that several financial vulnerability measures are significantly related to the amount of donations raised by the charitable organizations in our sample. Financial vulnerability measures provide incremental information above that contained in efficiency measures.

2. EVALUATING FINANCIAL PERFORMANCE

Weisbrod and Dominguez (1986) were among the first to examine the usefulness of accounting information to donors. They create a measure of efficiency which indicates the percentage of contributed (and other) resources spent on activities other than fundraising. Using data from U.S. Form 990s¹ they find that total donations are positively related to the efficiency measure. Using a measure that focuses on expenses that directly benefit the cause for which the charity was established (excluding both fundraising and administrative costs), studies by Posnett and Sandler (1989), Callen (1994), and Tinkelman (1999) support the findings of Weisbrod and Dominguez (1986). Utilizing a slightly different efficiency ratio that measures administrative expenses as a percentage of total expenses less fundraising costs, Greenlee and Brown (1999) also demonstrate that more efficient firms generate greater contributions on average.²

Just as there are times that the earnings number alone does not provide all the information necessary to analyze for-profit financial statements, the efficiency measure alone may provide limited information about the financial health of NFP entities. For example, Baber, Roberts, and Visvanathan (2001) note that interpreting an organization's efficiency measure is contingent on understanding its fundraising strategy. Therefore, we believe financial statement analysis can provide additional value to donors who use NFP financial reports to assess management's stewardship of nonprofit resources.

To identify fundamental variables that may be valuable to donors in analyzing NFP financial statements, we follow the "guided search" approach used by Lev and Thiagarajan (1993, p. 191). Lev and Thiagarajan select the fundamental variables for their study based on the signals that financial analysts use in their analyses. This selection process differs from previous attempts to identify fundamental signals using a statistical search (Ou & Penman, 1989). To identify important variables for NFPs we look to the recommendations of Anthony (1983) and Tuckman and Chang (1991), as well as to the giving guidelines suggested by charity watchdog groups such as the Wise Giving Alliance of the Better Business Bureau, the American Institute of Philanthropy, and Charity Navigator.³

Anthony (1983) asserts that, just like business entities, NFPs must maintain positive equity to remain a going concern. In addition to knowing that a nonprofit organization works efficiently, Anthony suggests that donors want to know whether the firm can continue to operate in the future if faced with economic difficulties. In other words, donors consider an organization's financial vulnerability. Tuckman and Chang (1991) are the

first to propose several measures to assess a NFP organization's financial condition. Their financial vulnerability measures, which often coincide with the giving guidance suggested by various watchdog agencies, are defined in the following paragraphs.

Adequacy of equity or wealth. First, the ratio of net assets to total revenue can be calculated to determine the adequacy of "equity." This ratio provides a measure of the wealth of the charity; specifically, it is the number of periods of revenue a nonprofit currently has on hand. In the event of a temporary decline in revenues, a firm with greater access to funds faces a lower risk of collapse. An organization with a larger measure of wealth is more likely to be able to (a) liquidate existing assets or (b) obtain credit to meet future needs. Without an adequate reserve of funds, a nonprofit firm will be unable to continue to operate normally when faced with a reduction in revenues.

While Tuckman and Chang suggest that larger reserves decrease financial vulnerability, some charity watchdog groups warn donors to avoid charitable organizations that accumulate resources instead of spending donations on program services. Both the Better Business Bureau's Wise Giving Alliance and the American Institute of Philanthropy recommend that organizations have a reserve of less than three years on hand.⁴ Using a similar measure, net assets to total expenses exclusive of fundraising expenses, Marudas (2004) predicts a negative relationship between wealth and donations, but finds mixed results on the impact on donations for his sample of nonprofit organizations.⁵

Revenue concentration. Second, a firm with a greater number of revenue sources is expected to be less susceptible to financial shocks. A firm that is dependent on one or a few revenue providers is vulnerable to declines in the economic health or changes in the donation preferences of those providers. To capture the extent of revenue dispersion, Tuckman and Chang recommend computation of an index of revenue concentration similar to the Herfindahl Index used by economists to measure market concentration. Specifically, Tuckman and Chang define the revenue concentration index as the summation of the squared percentage share that each revenue source represents of total revenue. If a single source of revenue exists, the index equals one. A firm with many sources of revenue has an index closer to zero.

Posnett and Sandler (1989), Tinkelman (1999), and Marudas (2004) examine various revenue sources other than donations, such as those from government grants and program services, to test the "crowding out" theory, which posits that donors will give less to charities that receive more government grants and program revenues. Their results on whether other revenues crowd out or crowd in donations are mixed. Following Tuckman

and Chang (1991), we examine revenues other than donations in the revenue concentration variable.

Level of administrative costs. Third, Tuckman and Chang recommend computing a ratio of administrative expenses to total expenses. This measure is similar to the efficiency measure used by Greenlee and Brown (1999). Tuckman and Chang reason that a firm with high administrative expenses can adjust to revenue reductions by taking steps to cut costs. When faced with a reduction in revenues, an organization with larger overhead costs has the option to cut those costs instead of reducing the overall level of program services offered. In contrast, a leaner, more efficient firm may have less ability to economize without cutting program expenditures. According to Tuckman and Chang, NFPs with the lowest ratios are the most vulnerable to financial crisis.

High administrative ratios may insulate NFP organizations from financial shocks, but several of the charity watchdog agencies encourage donors to demand spending on programs that meets certain minimum levels. The Better Business Bureau's Wise Giving Alliance suggests a program ratio (program expenses divided to total expenses) of at least 65 percent, while both the American Institute of Philanthropy and Charity Navigator advise donors that charities should dedicate at least 60 percent of total expenses to programs. A high administrative ratio may signal low financial vulnerability, but may result in a program ratio that is below recommended minimums.

Operating margins. Fourth, Tuckman and Chang suggest a measure analogous to the gross margin ratio used in a business setting. This ratio, called operating margin, is revenues less expenses, divided by revenues. A higher operating margin is indicative of a greater potential surplus on which to draw in the event of unexpected financial difficulties. Charity Navigator advises donors that to stay in business, charitable organizations need consistent growth achieved through positive operating margins. However, charities have incentives to minimize profits (Trussel, 2003). Reporting profits may result in the loss of donors (and scrutiny by regulators), as they may perceive that a profitable organization is not maximizing spending on its charitable purpose.

Borrowing from the bankruptcy models of Altman (1968) and Ohlson (1980), Greenlee and Trussel (2000) include Tuckman and Chang's (1991) financial vulnerability measures in a logistic regression model used to predict financial distress (defined as a decrease in program expenditures for three consecutive years). Three of the four vulnerability measures (all except the ratio of equity to revenue) are significant in predicting financial distress.⁶

Trussel and Greenlee (2004) extend Greenlee and Trussel's (2000) vulnerability prediction model to control for size and sector, as well as to

explore other definitions of financial distress. Financial distress is defined as a significant decrease in net assets over a three-year period.⁷ Both the adequacy of equity and the operating margin are significant predictors of financial distress. Trussel (2002) employs a model similar to the Trussel and Greenlee (2004) model on a much larger sample of more than 94,000 organizations obtained from the IRS Core Files, which include all tax exempt organizations required to file a Form 990 or 990-EZ. The coefficients of all variables are significant with the predicted signs. However, the administrative costs variable is not included, as the database from which the sample is drawn does not contain this information. Also, Trussel drops the equity variable in favor of the debt to assets ratio.

These studies provide evidence that Tuckman and Chang's (1991) prescribed measures are useful for certain financial statement users. However, unlike the studies addressing efficiency measures, Trussel and Greenlee (2004) do not determine whether financial vulnerability measures are significantly related to donations. By examining the association between financial vulnerability measures and total donations, we bridge the gap between the prior accounting studies that focus on efficiency measures and those that focus on financial vulnerability measures, and determine whether ratios suggested by charity watchdog agencies are value-relevant to donors.

3. RESEARCH QUESTIONS AND DESIGN

3.1. Empirical Specification

Our primary purpose is to explore whether Tuckman and Chang's (1991) financial vulnerability measures provide useful information, above that contained in efficiency measures, to donors making a contribution decision. Therefore, the first model presented is similar to Tinkelman's (1999) model to examine the relationship between efficiency measures and direct donations. We exclude the independent variables related to revenue sources other than direct donations, since those variables are part of our financial vulnerability model. Model 1 has the following specification:

$$\begin{aligned} \ln \text{DON}_{it} = & \beta_0 + \beta_1 \ln \text{PRICE}_{i(t-1)} + \beta_2 \ln \text{FUND}_{i(t-1)} \\ & + \beta_3 \ln \text{SIZE}_{i(t-1)} + \beta_4 \ln \text{AGE}_{it} + \varepsilon_i \end{aligned} \quad (1)$$

where ε_i is assumed to be distributed independently and identically.

We define the dependent variable, DON, as the natural logarithm of direct donations to organization i at time t .⁸ The independent variables from the financial statements are measured in the year before the receipt of donations because donors will not have access to current year accounting reports when making a current year contribution decision. This approach follows that used by Weisbrod and Dominguez (1986) and Tinkelman (1999). Tinkelman (1999) and Marudas (2004) use government grants and program revenues as additional control variables. We incorporate these variables into the revenue concentration variable stated later.

PRICE $_i$ is a measure of efficiency for firm i in the year before the donation. Tinkelman (1999) defines PRICE as the after tax cost to a donor to purchase \$1 (or other monetary unit) of output for beneficiaries. There are two factors that influence PRICE. First, the donor's cost to provide \$1 of charitable output is less than \$1 when contributions are tax deductible. The donor's tax rate is disregarded in this study because it does not vary across organizations (e.g., Weisbrod & Dominguez, 1986; Tinkelman, 1999; Marudas, 2004).

The second factor that impacts PRICE is the amount of contributions that are used for purposes other than providing services, such as general administrative and overhead costs or fundraising. Therefore, ignoring tax deductions, the donor's cost is greater than \$1 because not all of every dollar is used for programs. PRICE is calculated as the reciprocal of the percentage of total expenditures directed to program expenses (the natural logarithm of the result is used as in prior studies). The related coefficient is expected to be negative. This implies that donors prefer to contribute to more efficient organizations.

FUND $_i$ is operationalized as the natural logarithm of fundraising expenditures of firm i in the year prior to the donation. Because the natural logarithm of zero is undefined, we replace each zero value with \$1. Fundraising expenditures in the NFP sector act much like advertising in the for-profit sector, in that they introduce the organization and its output to potential donors. Therefore, total fundraising expenditures are included in the model as a control variable. This variable is included in the Weisbrod and Dominguez (1986), Tinkelman (1999), and Marudas (2004) models and is positively and significantly related to total donations.

SIZE $_i$ is the natural logarithm of total assets of firm i at the end of year $t - 1$. Fundraising success may be different for large charitable organizations than for smaller ones. Both Tinkelman (1999) and Trussel and Greenlee (2004) include a control variable for organization size in their models.

AGE_i is a proxy for the quality of a firm's output. It is calculated as the natural logarithm of the difference between the year of the donation and the year in which the organization was granted tax-exempt status. Weisbrod and Dominguez (1986), Posnett and Sandler (1989), Callen (1994), and Tinkelman (1999) include this control variable in their studies. Except for Tinkelman (1999), each study finds a significant and positive relationship between age and total donations.⁹ Tinkelman (1999) finds that the significant relationship is positive for small organizations and negative for large ones.

To determine whether the financial vulnerability measures provide additional useful information to donors, Model 2 adds the financial vulnerability measures suggested by Tuckman and Chang (1991) to Model 1. Model 2 is empirically specified as follows:

$$\begin{aligned} \ln DON_{it} = & \lambda_0 + \lambda_1 \ln PRICE_{i(t-1)} + \lambda_2 \ln FUND_{i(t-1)} + \lambda_3 \ln SIZE_{i(t-1)} \\ & + \lambda_4 \ln AGE_{it} + \lambda_5 EQUITY_{i(t-1)} + \lambda_6 CONCEN_{i(t-1)} \\ & + \lambda_7 ADMIN_{i(t-1)} + \lambda_8 MARGIN_{i(t-1)} + \varepsilon_i \end{aligned} \quad (2)$$

where ε_i is assumed to be distributed independently and identically.

$EQUITY_i$ is measured as the net assets of firm i divided by its total revenue. We predict a positive coefficient as evidence that donors reward more financially stable NFPs, as measured by equity ratios. A negative coefficient would support the claim of the charity watchdogs that organizations with large fund reserves are viewed less favorably than those that spend current donations on the charitable mission. Marudas (2004) finds that wealth or "years of available assets," a variable similar to $EQUITY$, has a mixed impact on donations. In some sectors, donations are negatively related to wealth; whereas, in others, donations are positively related to wealth.

$CONCEN_i$ is the revenue concentration index of firm i , which Tuckman and Chang (1991) calculate as the sum of the squared portion that each source of revenue represents of total revenue. A problem with using this measurement of revenue concentration in our model is that lagged direct donations are included as a revenue source, which may confound the results when regressed on current period direct donations. Lagged direct donations are highly correlated with current period direct donations. To rectify this problem, we exclude lagged direct donations as a revenue source (and from total revenues, the denominator). This changes the nature of this variable somewhat to a measure of the concentration of sources of revenue other than direct donations.

We predict a negative sign for the related coefficient on $CONCEN$, which implies that more financially stable organizations, defined as those with a

lower concentration of other revenue sources, receive larger direct donations. This variable includes revenue from government grants and program revenues; thus, we do not include these as separate variables as some previous studies do (e.g., Tinkelman, 1999).

$ADMIN_i$ is computed as the administrative expense of firm i divided by total expenses. We predict a positive coefficient, which implies that more financially stable NFPs, defined as those with a greater ability to cut cost in response to financial shock without also reducing the level of services available to beneficiaries, are better able to generate charitable contributions. Tuckman and Chang (1991) and Greenlee and Trussel (2000) demonstrate that leaner firms are more vulnerable to financial shocks. A negative coefficient is consistent with the findings by Greenlee and Brown (1999) that ADMIN is an *efficiency* measure and organizations that devote the largest percentage of their revenues to program services raise the highest amount of contributions.¹⁰ The watchdog agencies propose to donors that more efficient organizations (defined as those that spend more on programs and less on administrative costs) are more deserving of contributions.

$MARGIN_i$ is the operating margin of firm i , which is total revenues less total expenses, divided by total revenues. The coefficient is expected to be positive, which demonstrates that more financially stable NFPs, defined as those with the ability to devote a greater portion of each revenue dollar to surplus, are able to generate a higher level of donations. A positive coefficient provides evidence to support Charity Navigator's recommendation that charities need positive margins to achieve the growth necessary for an organization to survive. A negative coefficient would provide evidence of the incentive to minimize profits, since donors may perceive that their contributions are not utilized for current programs (Trussel, 2003).

3.2. Data Collection

We use data from the Internal Revenue Service Statistics of Income (SOI) database developed by the National Center for Charitable Statistics (NCCS).¹¹ The data are obtained and pooled from the 90s for tax years 1982–1983 and 1985–1999.¹² The SOI database includes information for all 501(c)(3) charitable organizations with at least \$10 million in assets, and a random sample of smaller charitable organizations (stratified and weighted by asset level) that are required to file a Form 990 with the IRS. Organizations that are not required to file IRS Form 990, such as religious organizations or those with gross receipts less than \$25,000, are not

included. The database is biased toward larger organizations, which may limit our ability to generalize our results to smaller NFP entities.

Marudas and Jacobs (2004) find that a two-way fixed effects model best fits their sample data of three sectors in the United States – higher education, hospitals, and scientific research nonprofits. They suggest using an error components model to control for unspecified organization-specific and time-specific factors. However, Marudas (2004) finds that “the NCCS database appears to contain too much measurement error to test effectively error components models” (p. 83). Thus, we follow Marudas (2004) in using pooled cross-sectional data rather than an error components model. However, we control for some time-specific factors. We adjust all data for inflation using the Consumer Price Index, with 1982 as the base year. We also perform the analyses using two dummy variables suggested by Okten and Weisbrod (2000). The dummy variables are for the tax years 1984 and 1986, as there were significant changes in tax laws which impact incentives to make donations.¹³ The coefficients for these two year variables are not significant for any of our tests, nor do they alter the significance of the models or their explanatory power.

3.3. Analysis by Sector

Greenlee and Bukovinsky (1998) propose that an analysis of accounting ratios should consider that differences may be due, in part, to the “industry” or sector in which the organization operates. Additionally, Hager (2001) suggests that Tuckman and Chang’s (1991) financial vulnerability measures are not equally useful for all types of charitable organizations. Trussel and Greenlee (2004) find that sector is significant in predicting financial distress. Marudas and Jacobs (2004) and Marudas (2004) find significant differences in results of their donations models for charities in different sectors. Following Trussel and Greenlee (2004) and Marudas (2004), we use six categories of charities, as determined by the National Taxonomy Exempt Entities (NTEE). The six categories are arts, education, human services, public benefit, health, and other.

4. ANALYSES AND RESULTS

Our initial sample is comprised of 163,094 organization-years that provided financial information for any two-year period during the reporting period. Organization-years with missing data and outliers, defined as those cases

that have any dependent or independent variable value in the top or bottom 1 percent, are eliminated from our sample.¹⁴ Additionally, we exclude organization-years where private contributions are less than 5 percent of total revenues, since our focus is on direct donors as financial statement users. The final sample includes 44,518 firm years. Table 1 shows how the final sample is derived.

Table 1. Composition of Sample of U.S. Tax-Exempt Charities Filing Form 990 between 1982 and 1983 and between 1985 and 1999.

	Organization-Years	
	Number	Percent
In database	163,094	100.0
Insignificant contributions ^a	73,872	45.3
Missing data	35,810	22.0
Outliers ^b	8,894	5.4
Final sample	44,518	27.3

Final sample by fiscal year end

Fiscal Year Ending	Number	Fiscal Year Ending	Number
1982	293	1991	2,971
1983	1,201	1992	2,943
1984 ^c	879	1993	3,062
1985	414	1994	2,982
1986	1,894	1995	2,853
1987	2,034	1996	3,033
1988	2,985	1997	3,849
1989	3,137	1998	4,663
1990	3,016	1999	2,309
		Total	44,518

^aInsignificant contributions are defined as any year in which an organization's donations are less than five percent of total revenues. We use a variety of alternative values to define insignificant contributions (from 2 to 20 percent). The results do not change with different definitions of insignificant contributions.

^bWe define outliers as those organization-years that have a dependent or independent variable value in the top or bottom 1 percent. An alternative approach to identifying outliers is to eliminate organizations that have any variable more than 1.5 hspreads above (below) the 75th (25th) percentile for that indicator. An hspread is the length of the interquartile range. The results are robust to the method of excluding outliers.

^cSome entities included in the SOI database in 1985 have a 1984 tax year.

Panel A in [Table 2](#) summarizes the univariate statistics for the charities in our sample. The average (median) total revenue from all sources is \$10.6 (\$4.7) million, including mean (median) direct contributions received of \$2.7 (\$1.1) million. The organizations range in age from 2 to 63 years, with an average and median age of 32 years. Ignoring the tax effect of deducting charitable contributions, it costs donors on average \$1.28 (median = \$1.21) to provide \$1.00 in program services to beneficiaries of our sample organizations (based on the *PRICE* variable).¹⁵ The average charitable organization has net assets exceeding two and one-half times annual revenue (as measured by the *EQUITY* variable) and spent 16 percent of total expenditures on general and administrative expenses (as measured by the *ADMIN* variable).

The correlation between the *ADMIN* and *PRICE* variables is positive and significant (correlation coefficient = 0.85; see Panel B of [Table 2](#)). Further, both variables represent a measure of the degree to which expenditures are diverted from the charity's mission. [Greenlee and Brown \(1999\)](#) use a variable similar to *ADMIN* instead of *PRICE* to represent efficiency and find it to be negatively associated with total contributions. *ADMIN* and *PRICE* appear to measure the same construct (e.g., efficiency as defined in [Parsons, 2003](#)). The inclusion of both variables in the regression introduces multicollinearity. Therefore, only one of the efficiency measures is included in the final version of Model 2 as discussed later.

4.1. Multivariate Analyses

The regression equations in Models 1 and 2 are examined separately for each of the nonprofit sectors and for the full sample of all nonprofit organizations.¹⁶ The pooled regression results (adjusted for autocorrelation) from the analysis of Model 1 are presented in [Table 3](#) and are similar to previous studies. This evidence indicates that organizations in all nonprofit sectors that report more efficient results received larger contributions, as evidenced by the negative and significant coefficient on *PRICE*. However, because fundraising is similar to advertising in a for-profit organization, fundraising is positively associated with total contributions in all sectors (demonstrated by the positive and significant coefficient on *FUND*). It seems that fundraising has an immediate direct effect on contributions, but has a negative indirect effect on donations in the long term (increased fundraising raises an organization's price).

In Model 2 we first include *PRICE*, and then alternately include *ADMIN*, as the proxy for efficiency. The results are robust to the definition of

Table 2. Descriptive Statistics for a Sample of 44,518 Organization-Years for U.S. Tax-Exempt Charities Filing Form 990 between 1982 and 1983 and between 1985 and 1999.

Panel A: Univariate Statistics			
	Mean	Median	Standard deviation
Direct contributions	2,666,807	1,146,205	4,280,428
Total contributions	3,527,578	1,521,584	5,850,429
Total revenues	10,679,630	4,752,947	19,118,500
Program expenses	7,237,122	2,736,943	14,513,280
Administrative expenses	1,246,019	406,508	2,983,700
Fundraising expenses	259,187	68,982	455,077
Total expenses	8,760,248	3,538,720	16,899,994
Total assets	28,038,084	12,576,141	48,691,715
Age	32.13	32.00	17.65
PRICE	0.25	0.19	0.23
FUND	8.33	11.14	5.57
EQUITY	2.72	1.97	2.50
MARGIN	0.20	0.14	0.24
CONCEN	0.23	0.21	0.18
ADMIN	0.16	0.13	0.13

Panel B: Correlation Coefficients							
	PRICE	FUND	SIZE	AGE	EQUITY	CONCEN	MARGIN
FUND	0.12*						
SIZE	-0.06*	0.38*					
AGE	-0.02*	0.25*	0.38*				
EQUITY	0.11*	-0.14*	0.21*	-0.01*			
CONCEN	-0.09*	-0.11*	-0.13*	-0.17*	-0.13*		
MARGIN	0.09*	-0.09*	0.16*	-0.11*	0.35*	-0.01	
ADMIN	0.85*	-0.04*	-0.04*	0.04*	0.08*	-0.12*	0.01*

Note: All variables are adjusted for inflation using the Consumer Price Index (1982 = 1.00). PRICE, natural logarithm of $(1 \div \text{program expenses as percentage of total expenses})$; FUND, natural logarithm of fundraising expenses; SIZE, natural logarithm of beginning assets; AGE, natural logarithm of the number of years since NFP was granted tax-exempt status; EQUITY, net assets \div total revenues; CONCEN, $\Sigma[(\text{revenue source besides direct donations}) \div (\text{total revenues} - \text{direct donations})]^2$; MARGIN, $(\text{total revenues} - \text{total expenses}) \div \text{total revenues}$; ADMIN, administrative expenses \div total expenses.

*Significant at 0.01, based on two-tailed test.

Table 3. Regression Model 1 Examining the Relationship of an Efficiency Measure with Direct Donations for a Sample of 44,518 Organization-Years for U.S. Tax-Exempt Charities Filing Form 990 between 1982 and 1983 and between 1985 and 1999.

$$\ln \text{DON}_{it} = \beta_0 + \beta_1 \ln \text{PRICE}_{i(t-1)} + \beta_2 \ln \text{FUND}_{i(t-1)} + \beta_3 \ln \text{SIZE}_{i(t-1)} + \beta_4 \ln \text{AGE}_{it} + \varepsilon_i$$

	Predicted Sign	NTEE Sectors						Full Sample
		Arts	Education	Human services	Public benefit	Health	Other	
Intercept	NA	-2.47* (-15.7)	-2.79* (-32.3)	-1.19* (-10.4)	-2.09* (-12.8)	-1.71* (-11.9)	-0.73* (-3.6)	-1.77* (-31.6)
PRICE	-	-0.16* (-3.00)	-0.11* (-3.5)	-0.14* (-2.6)	-1.01* (-14.1)	-0.19* (-3.78)	-0.41* (-5.1)	-0.28* (-13.5)
FUND	+	0.06* (18.4)	0.02* (12.4)	0.05* (24.6)	0.08* (29.6)	0.04* (14.86)	0.09* (21.13)	0.04* (43.6)
SIZE	NA	0.71* (69.0)	0.75* (140.1)	0.62* (81.9)	0.71* (69.9)	0.67* (77.0)	0.63* (47.6)	0.69* (191.0)
AGE	+	-0.09 (-3.8)	-0.11 (-9.9)	-0.09* (-5.6)	0.02 (1.1)	-0.10* (-5.4)	-0.16* (-5.8)	-0.07* (-9.8)
<i>N</i>		4,579	17,314	8,803	5,019	5,767	3,036	44,518
Adjusted R^2		0.63	0.59	0.50	0.59	0.54	0.54	0.52

Note: All variables are adjusted for inflation using the Consumer Price Index (1982 = 1.00). *t*-Statistics are in parentheses. DON, natural logarithm of direct contributions.

*Significant at $\alpha = 0.01$.

efficiency, so [Table 4](#) presents the outcome of only one version of Model 2. The model with PRICE as the efficiency proxy is presented because PRICE is included in prior research more frequently than ADMIN.

Using the full sample of nonprofits in all sectors, the adjusted R^2 for Model 2 is 0.80, compared with 0.52 for Model 2. A comparison of Model 2 to Model 1 (nested models) produces an F -statistic = 18,951 (significant at 0.001). Based on this evidence, it appears that including individual financial vulnerability measures with efficiency measures in the regression equation increased the explanatory power of the model without changing the sign or reducing the significance of the other variables. Compared with Model 1, Model 2 significantly increases the adjusted R^2 in all sectors.

Table 4. Regression Model 2 Examining the Relationship of Financial Vulnerability Measures with Direct Donations for a Sample of 44,518 Organization-Years for U.S. Tax-Exempt Charities Filing Form 990 between 1982 and 1983 and between 1985 and 1999.

$$\ln \text{DON}_{it} = \lambda_0 + \lambda_1 \ln \text{PRICE}_{i(t-1)} + \lambda_2 \ln \text{FUND}_{i(t-1)} + \lambda_3 \ln \text{SIZE}_{i(t-1)} + \lambda_4 \ln \text{AGE}_{it} + \lambda_5 \text{EQUITY}_{i(t-1)} + \lambda_6 \text{CONCEN}_{i(t-1)} + \lambda_7 \text{MARGIN}_{i(t-1)} + \varepsilon_i$$

	Predicted Sign	NTEE Sectors						Full Sample
		Arts	Education	Human services	Public benefit	Health	Other	
Intercept	NA	-1.84* (-17.0)	-2.03* (-33.3)	-1.12* (-12.8)	-2.10* (-21.7)	-2.55* (-26.3)	-1.28* (-9.5)	-1.82* (-51.0)
PRICE	-	-0.17* (-5.3)	-0.20* (-9.5)	-0.31* (-8.1)	-0.44* (-10.3)	-0.10* (-3.0)	-0.33* (-6.6)	-0.25* (-18.4)
FUND	+	0.02* (10.9)	0.01* (8.9)	0.02* (12.4)	0.02* (13.7)	0.01* (6.4)	0.03* (10.8)	0.02* (25.2)
SIZE	NA	0.78* (106.0)	0.80* (203.7)	0.71* (115.9)	0.80* (123.9)	0.82* (130.3)	0.74* (80.6)	0.78* (320.9)
AGE	+	-0.07* (-4.7)	-0.08* (-10.7)	-0.05* (-4.1)	-0.01 (-1.5)	-0.07* (-5.8)	-0.05* (-2.7)	-0.07* (-13.3)
EQUITY	+	-0.22* (-61.6)	-0.22* (-99.3)	-0.22* (-55.2)	-0.20* (-60.7)	-0.22* (-72.2)	-0.22* (-45.5)	-0.22* (-166.9)
CONCEN	-	-3.95* (-53.0)	-3.03* (-107.4)	-3.29* (-55.2)	-4.37* (-64.7)	-2.95* (-58.1)	-3.70* (-40.9)	-3.47* (-170.7)
MARGIN	+	0.29* (9.1)	0.29* (14.5)	0.49* (13.8)	0.02 (0.59)	0.04 (1.37)	-0.01 (-0.22)	0.20* (16.9)
N		4,579	17,314	8,803	5,019	5,767	3,036	44,518
Adjusted R ²		0.85	0.81	0.72	0.85	0.79	0.79	0.80

Note: All variables are adjusted for inflation using the Consumer Price Index (1982 = 1.00). t-Statistics are in parentheses.

*Significant at $\alpha = 0.001$ and 0.10.

The efficiency measure PRICE is negatively and significantly related to direct contributions in all sectors even after adding vulnerability measures to the equation. This implies that vulnerability measures are not substitutes for the efficiency measure. Fundraising efforts work in every sector, as demonstrated by the positive and significant coefficients for FUND in all sectors.

Our results show a significant, negative relation between the age of an organization and its direct contributions, with the exception of the Public

Benefit sector in which AGE is not significant. This negative coefficient is similar to one of the results Tinkelman (1999) observed. One possible explanation is that age, instead of serving as a proxy for quality, is actually a measure of the “trendiness” of the cause served by newer NFPs (Tinkelman, 1999, p. 149). Another is that achieving greater financial stability in the early years of an organization’s existence is more impressive to donors than being financially healthy after operating for a number of years.

The coefficient for the CONCEN variable is significantly negative, as predicted, for all sectors. Also, as predicted, MARGIN is positively associated with total donations, but is significant in only three sectors. This finding provides limited support for the claim that donors prefer charities that are able to dedicate a larger portion of each donated dollar to programs or a potential surplus. A higher operating margin is indicative of an organization that is less susceptible to financial downturns.

The coefficient for EQUITY is negative and significant in all sectors. This indicates that donors do not prefer to contribute to charities with large levels of net assets (measured as a multiple of annual revenues). Charitable organizations with more equity are in fact less likely to fail in the event of a decline in revenues (Greenlee & Trussel, 2000; Trussel & Greenlee, 2004). However, the evidence here does not support the claim that donors prefer nonprofits that accumulate savings. Instead, the result supports the prediction of Marudas (2004) and demonstrates that donors expect their contributions to be used for the firm’s charitable purpose in the near term. The uproar that emerged in the period after the tragedy of the September 11, 2001, terrorist attacks provides additional evidence to support the claim that donors consider high reserves to be undesirable. Donors expressed concern that several charities raised millions of dollars in the immediate aftermath of the event, but after one year many families of victims had still not received financial assistance (Barstow, 2002; Levine, 2001).¹⁷

4.2. Robustness Tests

Some of the variables in our models are subject to alternative interpretations or measurement. In particular, we test alternative measures for DON, EQUITY, FUND, and CONCEN. We test the models to see if they are robust to alternative measures of these variables. First, we examine the donations variable. Most studies use direct (i.e., private) donations as the dependent variable (e.g., Posnett & Sandler, 1989; Callen, 1994; Tinkelman, 1999; Marudas, 2004). However, Weisbrod and Dominguez (1986) use total

donations, including government grants and indirect contributions. Using total donations rather than direct donations does not change the tenor of our results.

Second, we consider alternative interpretations of equity. Our results imply that charities that accumulate wealth or net assets (EQUITY), receive less donations. If the negative coefficient associated with EQUITY is monotonic, the implication is that donations are greatest on average for organizations with the smallest reserves. However, it is possible that donors would be concerned when reserves are too large (indicating that a nonprofit is not distributing donated funds to the intended beneficiaries) or too small (evidence that the organization is financially vulnerable to changes in revenues). To allow for changes in the slope of the EQUITY coefficient, we employ a piecewise linear regression that examines different levels of EQUITY separately. This is similar to the method [Morck, Shleifer, and Vishny \(1988\)](#) used to study the relationship between stock ownership by board members and market value, which is positive for high and low ownership levels and negative for moderate ownership levels.

We have no *ex ante* definition of high or low reserves. Therefore, we use several alternative definitions. In the first iteration, we divide the sample population of organization-years into thirds (based on the EQUITY measure). In the second iteration, we use EQUITY less than zero and more than three as the cutoffs for low and high reserves, respectively, following the guidelines of the American Institute of Philanthropy. For both iterations, we estimate the pooled regression results separately for each category of reserves – low, medium, and high. For these two iterations, the coefficient is negative and significant for EQUITY in all three sample groups. This implies that the EQUITY coefficient is monotonic.

Third, we consider the FUND variable. [Hager \(2003\)](#) and [Krishnan, Yetman, and Yetman \(2006\)](#) provide evidence that some organizations that receive contributions incur fundraising costs but report zero fundraising expense, distorting the reported accounting ratios. To determine whether our results are impacted by organizations that underreport fundraising expense, we repeat our regressions after excluding organization-years with zero fundraising expense ($N = 38,349$ after excluding these organizations). Our results are similar when these organization-years are excluded.

Finally, we include another test of the impact of financial vulnerability on donations. [Lev and Thiagarajan \(1993\)](#) create an aggregate fundamental score that reflects the combined effect of the fundamental signals. Similarly, we calculate an aggregate vulnerability indicator (FV) using the financial vulnerability model developed by [Greenlee and Trussel \(2000\)](#).¹⁸ A negative

and significant coefficient on the vulnerability indicator FV is additional evidence that donors give more, on average, to NFPs that are less likely to experience financial distress. The results are consistent across all sectors.

5. SUMMARY AND CONCLUSIONS

Understanding how to provide accounting reports with information that is useful for decision making is important to financial statement users and accounting regulators. [Lev and Thiagarajan \(1993\)](#) and [Abarbanell and Bushee \(1997\)](#) show that fundamental analysis of financial statements improves security valuation and earnings prediction in for-profit organizations. We provide evidence that fundamental analysis of NFP financial statements is useful for donors, grantors, and other financial statement users.

Our results suggest that contributions are positively associated with a charitable organization's ability to continue to operate and that financial vulnerability measures provide information beyond that supplied by efficiency measures. The incorporation of individual financial vulnerability measures in a regression model that also includes an efficiency indicator shows that most of these measures are significantly related to contributions. The results are of interest to nonprofit accounting researchers, financial statement preparers, watchdog agencies, regulators, current and potential contributors, and others interested in analyzing and understanding nonprofit financial statements.

Interestingly, lower financial vulnerability is not always associated with increased giving. For example, though large equity levels protect NFP organizations from financial shocks and reduce financial vulnerability ([Trussel & Greenlee, 2004](#)), donors make fewer contributions, on average, to charitable organizations with the highest net asset reserves. This implies donors expect their contributions to reach beneficiaries in the short term.

Our results indicate that while less efficient nonprofit organizations may have greater ability to stay afloat in troubled economic times, donors do not reward inefficiency with increased donations. This finding seems consistent with the claim that [Tuckman and Chang's \(1991\)](#) ratio of administrative costs is a measure of efficiency.

We find support for our prediction that less vulnerable organizations, defined as those with a larger number of revenue sources other than direct donations, receive more direct donations on average than those with fewer revenue sources. Our results support the claims of [Greenlee and Bukovinsky](#)

(1998) and Hager (2001) that consideration of sector is important when analyzing financial information.

NOTES

1. Form 990 is an informational tax filing required by the Internal Revenue Service for certain NFP entities.

2. In contrast to Greenlee and Brown (1999), Frumkin and Kim (2001) find no significant relationship between administrative ratios and donations. Tinkelman and Mankaney (2005) discuss the reasons for the mixed results between these two studies, including the different samples studied and the choice of control variables included in the models.

3. Charity watchdog groups for the nonprofit sector are similar to financial analysts for investors, in that they review reports from charitable organizations and rate the charities based on those reports. See the giving guidelines for Better Business Bureau at <http://www.give.org/>, for the American Institute of Philanthropy at <http://charitywatch.org/>, and for Charity Navigator at <http://www.charitynavigator.org>

4. The Better Business Bureau's Wise Giving Alliance and the American Institute of Philanthropy use the ratio of net assets to expenses, which is similar to Tuckman and Chang's "equity" ratio.

5. Marudas' (2004) wealth measurement is similar to the ratio suggested by the American Institute of Philanthropy.

6. Because NFPs rarely file for bankruptcy, Greenlee and Trussel examine alternative proxies for financial distress.

7. Trussel and Greenlee (2004) define significant decrease in net assets as a 20 percent decline over three years and as a 50 percent decline over three years. Their results are robust to the different definitions of significant decline in net assets.

8. Steinberg (1986) proposes examining the change in donations relative to the change in expenses. This approach implies that current year donations are, to some degree, a function of prior years' donations. However, Tinkelman (1999) suggests that efficiency tends to be somewhat constant within an organization and that the level of fundraising is a better predictor of donation levels. We follow the linear regression approach of Weisbrod and Dominguez (1986), Posnett and Sandler (1989), and Tinkelman (1999) instead of the first differences approach of Steinberg (1986). According to Tinkelman (1999) "Price appears to be precisely the kind of stable, organization-specific characteristic that a difference model is designed to screen out" and the difference model "is not appropriately specified for studying price elasticity" (p. 147).

9. Some earlier studies include the interaction term AGE * FUND to determine if organizations experience diminishing returns from fundraising expenditures as a firm becomes established/known in the donor community. The inclusion of this control variable does not qualitatively change the results.

10. Greenlee and Brown (1999) compute administrative ratio as total administrative expenses divided by total expenses for administrative costs plus program services (total expenses, excluding fundraising costs).

11. See discussions of the IRS 990 data and the NCCS database in [Gordon, Greenlee, and Nitterhouse \(1999\)](#) and [Froelich and Knoepfle \(1996\)](#).

12. The tax year per the 990 return sometimes differs from the year in which the return is included in the SOI database, which is usually the year in which the return was filed. We use the tax year per the return to identify the period for the return.

13. Though the SOI database does not contain most returns filed in 1984, some tax returns for tax year 1984 are included in the 1985 SOI database.

14. The NCCS suggests that outliers in the database are likely to represent either (1) errors in the data input process, (2) errors in the 990 forms, or (3) influential organizations that can mask financial trends demonstrated in other organizations. Therefore, the NCCS proposes to eliminate outliers when analyzing aggregated data. See a discussion of the database at <http://nccs.urban.org/>

15. [Tinkelman \(1999\)](#) and [Marudas \(2004\)](#) truncate the PRICE variable at \$10. After eliminating outliers, the maximum PRICE in our sample is less than \$10.

16. We tested our models for multicollinearity using the procedures suggested by [Hair, Anderson, Tatham, and Black \(1998\)](#), and found that while some multicollinearity exists, it is not so severe as to impede the interpretation of the regression results. Additionally, diagnostic tests indicate no problems of non-normality.

17. Using [Marudas' \(2004\)](#) definition of wealth, net assets divided by total expenses besides fundraising expenses, does not significantly change the results.

18. $FV = P(\text{financial vulnerability}) = f(\text{EQUITY, CONCEN, ADMIN, MARGIN})$. The final logistic regression from [Greenlee and Trussel \(2000\)](#) is: $FV = 1/(1 + e^{-z})$, where $z = -2.81 + .12 \text{ EQUITY} + 1.25 \text{ CONCEN} - 2.26 \text{ ADMIN} - 3.43 \text{ MARGIN}$.

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THE EFFECT OF THE 150-HOUR EDUCATIONAL REQUIREMENTS ON MUNICIPAL AUDIT FEES

Arthur Allen and George Sanders

ABSTRACT

We examine the effect of the 150-hour educational requirements on audit fees for a sample of cities over a ten-year time span (1989–1999). We find that audit fees increase substantially in those states that implemented the 150-hour requirement. Because the effect of the 150-hour requirement is expected to affect fees through an increase in accountants' wages, as a supplemental test, we also test whether the 150-hour requirement increased accountant's wages over that time period. We find evidence that the 150-hour requirement increased accountant's wages.

1. INTRODUCTION

As of December 31, 2005, 45 states had implemented the 150-hour educational requirement for public accountants with two states (Minnesota and Virginia) scheduled to implement in 2006. The issue of costs and benefits of this regulation continues to be debated. Proponents claim that the rule will attract higher quality entrants to the profession and better prepare students (e.g., [Novin & Tucker, 1993](#); [Elam, 1996](#)). Detractors claim

the rule will unnecessarily restrict the supply of entrants, raising the cost of obtaining an education and the cost of audit services (e.g., Bernard, 1996; Somasundaram, 1998).

We examine one aspect of the debate: Has the 150-hour requirement increased audit fees? To answer this question, we analyze changes in audit fees for a sample of cities over a ten-year time span (1989–1999). We find evidence that municipal audit fees in states that adopted the 150-hour requirement increased significantly more than fees in other states. As a supplemental test, we also examine whether the 150-hour requirement has an effect on accountant's wages. The results of our models provide evidence that the 150-hour requirement increased accountant's wages and the cost of audit services. Our findings are important because they bolster the position of critics and contradict claims made by the proponents of the 150-hour requirement.

The period under study (1989–1999) coincides not only with changes in state requirements, but also with a relaxation of auditor solicitation restrictions and other changes in the audit environment. Therefore, our results also provide some evidence on the effect of these changes. We confirm the findings of prior research (Hackenbrack, Jensen, & Payne, 2000) that auditor solicitation and competitive negotiation restrictions are associated with higher audit fees. As expected, we find that fees decrease when auditor solicitation restrictions are eliminated. Interestingly, we do not find fees change when the competitive negotiation restrictions are removed.

We elect to test the education and auditor solicitation effects in the municipal audit market for two reasons. First, auditees are located within a particular state jurisdiction and are likely to be audited by local auditors or local offices of national or regional firms. Thus, audit fees are likely to reflect market and regulatory factors within the states such as auditor solicitation restrictions and CPA licensing requirements. Second, business entities are more likely to have facilities which are geographically dispersed and audits may involve staff from audit firm offices across several states (Copley, 1993). To our knowledge, only two published studies (Hackenbrack et al., 2000; Copley, 1993) have explicitly accounted for the effect of differences in the audit market within particular states and these authors also use municipal audit fees to isolate state effects.

The remainder of our chapter is organized as follows. Section 2 discusses prior research on the costs and benefits of the 150-hour requirement including the expected impact of the 150-hour requirement on audit fees. Section 3 describes the research design and sample whereas Section 4 presents the results. The final section discusses the limitations and conclusions of the study.

2. PRIOR RESEARCH

2.1. Adoption of Additional Educational Requirements

In 1969, a committee of the American Institute of Certified Public Accountants recommended that 150 semester hours of college study be established as a minimum educational requirement for public accountants. In 1988, the membership of the AICPA adopted this requirement as a precondition for membership in the Institute. Hawaii was the first state to adopt the requirement, in 1977, followed by Florida, in 1979. As of 1998, 41 states had enacted the rule¹ and 15 states had implemented the requirement, potentially imposing additional costs on auditors.

However, no state has passed the 150-hour requirement since 2000, the year Colorado rescinded its 150-hour requirement. In 2003, PricewaterhouseCoopers (PWC) (PricewaterhouseCoopers, 2003) issued a report, which recommended several alternatives to the 150-hour requirement. These alternatives include additional experience requirements and in-house training. If implemented, the PWC recommendations would compromise the 150-hour requirement. Although the 150-hour requirement has been passed in a large majority of the states, its effects continue to be debated (e.g., Miller, 2003; Bierstaker, Howe, & Seol, 2004).

The regulation literature (Stigler, 1975; Peltzman, Levine, & Noll, 1989) suggests that barriers to entry result in lower levels of supply of the regulated good or service and higher prices. Anecdotal evidence suggests that in states which have an effective 150-hour requirement accounting firms are paying higher starting salaries for 150-hour graduates. However, firms are unsure about the effect on billing (e.g., Somasundaram, 1998; Donelan, 1999; Frieswick, 2000). A study commissioned by the AICPA from MGT of America estimates that firms in Florida paid 150-hour graduates an 8.3% premium (cited in Cumming and Rankin (1999)). Lee, Liu, and Wang (1999) demonstrated analytically that adoption of additional educational requirements increases audit fees. In their model, an increase in educational requirements shifts the supply curve for audits down while the demand curve remains unchanged.

The supply of licensed practitioners may also be related to the likelihood of adoption of a 150-hour requirement in a given state. Maurizi (1974) modeled the effect of occupational licensing restrictions on the supply and prices of licensed professionals. The model predicts that such restrictions decrease supply and increase price. Maurizi empirically examined the effect of occupational restrictions in 18 professions. He found reductions in

licensed professionals in eight of these professions including accounting. Roberts and Kurtenbach (1998) studied state adoptions of the 150-hour requirement in 1995 and Sanders (1999) examined a time series of state level data from 1977 to 1995. The studies use different proxies for demand for regulation but both found that states with a relatively larger number of CPAs adopted the new educational requirements more quickly. Grant, Ciccotello, and Dickie (2002) examined the effectiveness of the educational requirements as a barrier to entry and document a sharp decline in the number of first-time candidates taking all parts of the CPA exam.²

2.2. Audit Fees

Since the seminal study of audit fees by Simunic (1980), numerous studies examined cross-sectional samples to test for factors determining audit fees. Only a few examined longitudinal samples over periods of several years. Maher, Tiessen, Colson, and Broman (1992) examined audit fee changes in a sample of 78 firms over the period 1974–1981, concluding that audit fees decreased by 1.4% in real terms over the period 1974–1977 and 3.9% over the period 1977–1981. They attributed their result to increasing competition in the audit market. However, the sample is relatively small, covers a fairly short period of time, and addresses only broad, national trends.

Sanders, Allen, and Korte (1995) compared a national sample of 289 city audit fees for 1985 and a separate sample of 239 city audit fees for 1989. The samples were drawn from cities with populations in excess of 20,000 and included 159 cities in common, making possible comparisons of the whole samples as well as a repeated measures subsample. The authors used both a predictive approach, constructing a fee model for the 1985 fees based on work on municipal audit fees by Rubin (1988) and Copley, Gaver, and Gaver (1995) and a repeated measures design for a subsample of cities for which both years were available. The 1985 regression model is used to predict fees for 1989, which are compared to the actual fees for 1989 audits. Results for the whole sample comparison and the repeated measures subsample are similar. Like the Maher et al. study, Sanders et al. found that, in real terms, fees had declined over the period, but at a slower rate for cities in the sample than reported for firms by Maher et al. Sanders et al. (1995) did not examine differences in fee changes across states.

The behavior of audit fees over time is of interest because the audit market has changed significantly in the last two decades. Prior empirical research suggests that the market has become more competitive (Maher et al., 1992; Elliott, 1998) even while mergers have reduced the number of

larger firms. However, while individual states reflect national trends, there are differences in the audit markets within states. For example, changes in AICPA membership numbers for the period 1989–1999, range from a 12% decline in Oklahoma to a 43% increase in Alabama, suggesting that the supply of CPAs is responding to market factors, which vary by state.

Hackenbrack et al. (2000) examined 675 municipal audits in eight southeastern states, classifying each as baseline, solicitation restricted and bidding restricted, based on state regulations, statutes, and Codes of Conduct. Hackenbrack et al. (2000) took advantage of the fact that municipal audit services tend to be more geographically bound to test for differences in the audit market within states. Of the eight states examined, one (Florida) had a restriction on negotiating on price for audit services as well as a restriction on uninvited solicitation of engagements.³ Three states (Louisiana, Mississippi, and Texas) prohibited solicitation only. Hackenbrack et al. follow Chaney, Jeter, and Shaw (1997) in arguing that the solicitation and bidding restrictions restricted price information to audit clients, leading to auditor–auditee misalignment and allowing auditors to collect higher fees in these markets. Their results are consistent with the assertion. In their sample, the baseline (unrestricted) states had fees that were only 89.5% as high as the solicitation restricted markets and, in the bidding restricted market (Florida), fees were 36.3% higher than baseline.

3. RESEARCH DESIGN

We examine the determinants of audit fees in both 1989 and 1999 for a matched sample of 176 cities with populations in excess of 20,000. We also examine the determinants of the *change* in audit fees over this time period for our matched sample. For each sample, the natural log of audit fees is regressed on various control variables found by prior research to influence audit fees, using the following model:

$$\begin{aligned} \text{LN}(\text{audit fees}) = & \alpha + \beta_1(\text{LN}(\text{population})) + \beta_2(\text{Big 6}) + \beta_3(\text{busy season}) \\ & + \beta_4(\text{bond rating}) + \beta_5(\text{no rating}) + \beta_6(\text{mayor}) \\ & + \beta_7(\text{banned}) + \beta_8(\text{Florida}) + \beta_9(\text{150-hour}) \end{aligned}$$

where

- LN(audit fees) = natural log of audit fees paid.
- Big 6 = one (zero) if the municipality’s auditor was (not) one of the Big 6 (auditor reputation).

- $\text{LN}(\text{population})$ = natural log of the 1990 (2000) census estimate of the municipality's population for the 1989 (1999) sample (auditee size).
- Busy season = one (zero) if the municipality's fiscal year end is (not) between October 1 and March 31.
- Bond rating = Moody's Investor Service general obligation uninsured bond rating. For the 1999 sample, it is coded 12 for Aaa, 11 for Aa1, 10 for Aa2, 9 for Aa3, 8 for A1, 7 for A2, 6 for A3, 5 for Baa1, 4 for Baa2, 3 for Baa3, and 0 for no rating. For 1989, it is coded 12 for Aaa, 11 for A1, 10 for A, 8 for A1, 7 for A, 5 for Baa1, and 0 for no rating (engagement risk).
- No rating = one (zero) if Moody's (does not) report a general obligation bond rating for the city (engagement risk).
- Mayor = one (zero) if the municipality had a mayoral (other) form of government.
- Banned = one (zero) if the municipality was (not) in a market where direct solicitation was banned in 1989.⁴
- Florida = one (zero) if the municipality is (not) located in Florida, which banned both solicitation and competitive negotiation in 1989.
- 150-hour = one (zero) if the municipality had (not) adopted the 150-hour requirement.

The control variables represent factors found by prior literature to be important determinants of municipal audit fees (e.g., Rubin, 1988; Copley, 1989; Raman & Wilson, 1992; Ward, Elder, & Kattelus, 1994; Copley et al., 1995; Hackenbrack et al., 2000). Prior research examining solicitation restrictions includes cities from only a few states (Hackenbrack et al., 2000). We use a national sample that contains municipalities from more states that prohibited direct solicitation. In addition, we use a cross-time design to examine the effect of the elimination of solicitation and competitive negotiation restrictions on audit fees. If the solicitation and competitive negotiation restrictions are causing the increase in audit fees, we expect that the Banned and Florida variables will be important in the 1989 sample but not in the 1999 sample. We also examine whether the changes in audit fees in our matched sample are caused in part by the elimination of the solicitation and competitive negotiation restrictions.

Florida was the only state in our 1989 sample to have implemented the 150-hour requirement. Therefore, in our 1989 sample, two of our variables, 150-hour and Florida, are perfectly correlated. We do not include the 150-hour variable in the 1989 regression.⁵ In the 1989 sample, the effect of the

Florida variables includes both the 150-hour requirement and the auditor solicitation and negotiation restrictions.

Finally, we examine published survey data for evidence that the 150-hour educational requirement has resulted in increased wages for auditors. We use data from the 5th, 6th, and 7th editions of American Salaries & Wages Survey (ASWS, United States Department of Labor, 2003). To increase the comparability of the data, we use only “Accountant & Auditor” data that applies to an entire state and we only use the “average wage paid” for the 5th edition and “average hourly wage” for the 6th and 7th editions. The ASWS collected all wage data from each state’s Bureau of Labor Statistics. The 5th, 6th, and 7th editions had data for year ends 1997, 1999, and 2001, respectively.

Because our State Wages data (see later) is available on an annual basis, we convert the Accountant’s Wages from an hourly basis to an approximate annual wage by multiplying by 2,000 hours. We regress annual Accountant’s Wages on variables for the 150-hour requirement, time period, and a measure of the general level of wages in a state. The State Wages data were gathered from the U.S. Bureau of Labor Statistics for the year 1999. State Wages is an important control variable because it is possible that the 150-hour requirement may have been implemented earlier in states with high wages. Because the data encompass three time periods, we use two time dummy variables (1999 and 2001 with 1997 as the excluded group) to control for the increase in the level of wages over time. We use two 150-hour variables. The first variable is coded 1 for states that implemented the 150-hour requirement within the past 2 years, and 0 otherwise. We use two years because the data are spaced two years apart. The second 150-hour variable is coded 1 for states that implemented the 150-hour requirement more than 2 years ago.

3.1. City Sample

We collected the 1989 data through a survey of cities with populations in excess of 20,000 in 1986 (1,002 cities are reported in the *County and City Databook – Bureau of the Census, 1994*). The survey was conducted in 1990. We received 398 usable responses (451 total), for a response rate of 39.7%. The responses were tested for differences between late and early responders. No significant differences were found. Differences in the size distributions of the sample and the population are small. The 1999 sample was obtained by resurveying the 398 cities included in the 1989 dataset. This survey was done

in 2000 and requested audit fees and related information for 1997, 1998, and 1999. Usable responses for 1999 were received from 183 cities, a response rate of 46%. After removal of seven cities that reported using a state auditor, 176 matched responses remained.

Table 1 reports descriptive statistics for both the 1989 and 1999 samples. Mean (median) audit fees increased substantially during this time period from \$36,441 (\$28,376) to \$57,348 (\$41,908). Mean population increased more modestly from 91,369 to 103,247. The percentage of cities using a Big 6 auditor declined from 43% to 30%. Bond ratings were about the same except that fewer cities had uninsured G.O. bond ratings in 1999 (82% in

Table 1. Descriptive Statistics for a Sample of 176 City Governments with Populations > 20,000 for the Years 1989 and 1999.

Panel A: Categorical Variables					
Variable name and definition		1989 (%)	1999 (%)		
Big 6: (0,1) where 1 represents a Big 6 auditor		43	30		
No rating: (0,1) where 1 represents no Moody's G.O. rating		18	33		
Busy season audit: (0,1) where 1 represents a busy season audit		18	18		
Mayor: (0,1) where 1 represents a mayoral form of government		73	73		
Florida: (0,1) where 1 represents a Florida municipality		6	6		
150-hour: (0,1) where 1 represents a state that has implemented a 150-hour requirement		6	22		
Banned: (0,1) where 1 is for audits in states where direct solicitation was prohibited		24	0		
Panel B: Continuous Variables					
		Mean	Standard deviation	Median	Interquartile range
1989	Audit fee	\$36,441	\$26,360	\$28,376	\$20,443–\$43,243
	Population	91,659	113,242	53,100	39,613–88,330
	Bond rating	6.72	3.75	8	6–10
1999	Audit fee	\$57,348	\$46,209	\$41,908	\$30,000–\$70,000
	Population	103,247	130,602	58,734	43,971–102,300
	Bond rating	5.74	4.35	7	0–9

Notes: The two samples are for 176 matched observations. The data was gathered via surveys. Busy season is coded 1 if the fiscal year end is between October and March. Bond rating is the Moody's bond rating. For 1999, it is coded 12 for Aaa, 11 for Aa1, 10 for Aa2, 9 for Aa3, 8 for A1, 7 for A2, 6 for A3, 5 for Baa1, 4 for Baa2, 3 for Baa3, and 0 for no rating. For 1989, it is coded 12 for Aaa, 11 for A1, 10 for A, 8 for A1, 7 for A, 5 for Baa1, and 0 for no rating.

1989 vs. 67% in 1999).⁶ This corresponds to a large increase in the use of bond insurance, and underlying ratings are not reported for all cities. Florida represents 6% of the sample, and 22% of the cities are located in states that had implemented the 150-hour requirement by 1999. A significant portion of the sample was located in states that banned all direct solicitation (24%) in 1989. In all cases, auditor solicitation restrictions had been removed by 1999.

4. REGRESSION ANALYSIS

4.1. Results Related to the 150-Hour Requirement

Table 2 reports the results for the 1989 and 1999 models of audit fees. The models are significant and the adjusted R^2 are similar to prior research.⁷ The 1989 model is presented for comparison to the 1999 model and to provide evidence on other issues (see the following section). In 1989, Florida was the only state in the sample which had implemented the 150-hour requirement. As expected, the coefficient for the Florida dummy variable in the 1989 model is positive and significant indicating that cities in Florida paid higher fees than cities in other states. However, it is not clear whether the higher fees in Florida for 1989 resulted from the 150-hour requirement or other factors such as the restrictions on competitive negotiation (see Hackenbrack et al., 2000).

By 1999, many states had implemented the 150-hour requirement. Our 1999 audit fee model includes a dummy variable coded 1 for states that had implemented the 150-hour requirement. As expected, the coefficient is positive and significant, indicating that cities in these states paid higher fees than cities in other states. However, it is possible that fees are higher in these states for reasons unrelated to the 150-hour variables. To address this possibility, we examine whether audit fees have increased more in the states that implemented the 150-hour requirement than in other states.

Table 3 presents the results of a model of the change in the log of audit fees. The results confirm the findings from the 1989 and 1999 models. Audit fees for cities in those states that adopted the 150-hour requirement increased more than the fees for cities in other states. Together with our cross-sectional findings, our cross-time results suggest that the 150-hour requirement is responsible for an increase in municipal audit fees.

We expect that the reason the 150-hour requirement increased audit fees was because of its effect on auditors' wages. Panel A of Table 4 presents the

Table 2. Comparison of 1989 and 1999 Audit Fee Regression Models for a Sample of 176 City Governments with Populations > 20,000.

Independent Variable	Predicted Sign	Estimated Coefficient	<i>t</i> -Statistic	<i>p</i> -Value
<i>Panel A: The dependent variable is LN of 1989 audit fees</i>				
Intercept	?	4.559	9.29	.001
LN(population)	+	.516	11.57	.001
Big 6 auditor	+	.212	3.28	.001
Busy season	+	.100	1.24	.218
Bond rating	-	-.015	-0.78	.434
No rating	+	-.183	-1.06	.289
Mayor	+	-.007	-0.10	.921
Banned	+	.105	1.40	.081
Florida	+	.631	4.81	.001
Adjusted $R^2 = .543$				
<i>Panel B: The dependent variable is LN of 1999 audit fees</i>				
Intercept	?	4.622	7.73	.001
LN(population)	+	.563	10.65	.001
Big 6 auditor	+	.175	1.86	.065
Busy season	+	.194	2.03	.044
Bond rating	-	-.043	-1.97	.050
No rating	+	-.181	-0.91	.364
Mayor	+	-.026	-0.32	.749
Banned (previously)	Insignificant	-.071	-0.77	.223
Florida	Insignificant	.486	2.77	.006
150-hour	+	.212	2.10	.037
Adjusted $R^2 = .520$				

Notes: The samples are matched for 176 cities. See Table 1 for a description of the other variables. The *p*-values are for two-tailed tests except for Banned, for which we have a directional hypothesis based on the work of Hackenbrack et al. (2000), Chaney, Jeter, and Shaw (1997), and Jeter and Shaw (1995). In the 1999 model, Banned is coded 1 for states that were previously banned from direct solicitation. The Banned and Florida variables are expected to have insignificant coefficients in the 1999 sample because the solicitation restrictions were removed prior to 1999, and therefore, we do not expect fees to be higher in these states for 1999.

descriptive statistics for Accountant's and State Wages. The mean of Accountant's Wages is \$41,830, and the mean of State Wages is \$32,615. The medians are close to the means for both variables. The interquartile ranges indicate that the distributions are reasonably symmetric for both variables. Panel B of Table 4 presents the results of a model that regresses Accountant's Wages by state on the 150-hour requirement, time period, and the overall level of wages in the state. There are 153 observations because

Table 3. Regression Results for a Model of the Change in Audit Fees 1989–1999 for a Sample of 176 City Governments with Populations > 20,000.

Independent Variable	Predicted Sign	Estimated Coefficient	<i>t</i> -Statistic	<i>p</i> -Value
Intercept	?	0.456	11.34	.0001
Change in LN(population)	+	−0.166	−0.78	0.434
Change in Big 6 auditor	+	0.135	2.72	0.007
Change in bond rating	−	0.072	1.67	0.097
Change in no rating	+	0.045	0.79	0.429
Banned	−	−0.153	−2.40	0.018
Florida	−	−0.045	−0.35	0.727
150-hour	+	0.135	1.85	0.067

Adjusted $R^2 = .0662$

Notes: The dependent variable is the difference in the natural logs of the 1999 fee and the 1989 fee. The samples consist of 176 cities with data available for both 1989 and 1999. See Table 1 for a description of the independent variables. The *p*-values are for two-tailed tests. Banned and Florida are expected to have negative signs because the solicitation and competitive negotiation restrictions were removed prior to 1999 which should reduce audit fees in those markets. The 150-hour variable is expected to have a positive sign because fees should increase when there are barriers to enter the profession.

each state and the District of Columbia are included for each of the three time periods. The coefficients of the control variables are positively significant as expected. The model has an R^2 of .8429. The coefficients of both 150-hour variables are positive, but only the variable indicating more than 2 years had passed since the 150-hour requirement became effective is statistically significant.

Panel C of Table 4 shows the results of the regression model which regresses the change in Accountant's Wages by state on the 150-hour variables and the change in the overall level of wages in the state. The sample size is 102 because there are observations for two time intervals (i.e., the change from 1997 to 1999 and the change from 1999 to 2001). The coefficients for both 150-hour variables are positive and statistically significant with similar magnitudes. The results of both models provide evidence that the 150-hour requirement increased Accountant's Wages. However, only in the change model the results were statistically significant for recent implementations (within 2 years) of the 150-hour requirement. These results are consistent with our findings for the effect of the 150-hour requirement on audit fees.⁸

Table 4. Regression Results for a Model of the 150-hour Requirement on Accountant's Wages by State for the Years 1997–2001.

Variable	Mean	Standard Deviation	Median	Interquartile Range	
<i>Panel A: Descriptive statistics</i>					
Accountant's wages	\$41,830	\$6,052	\$40,680	\$37,200–\$45,880	
State wages	\$32,615	\$6,061	\$31,068	\$27,888–\$35,414	
Independent Variable	Predicted Sign	Estimated Coefficient	<i>t</i> -Statistic	<i>p</i> -Value	
<i>Panel B: 150 Dependent variable is average accountant's wages by state</i>					
Intercept	?	16,725	14.73	0.001	
Recent change to 150-hour	+	314	0.56	0.289	
Greater 2 years after 150-hour	+	1,046	2.21	0.014	
1999	+	3,071	6.43	0.001	
2001	+	9,464	18.00	0.001	
State wages	+	0.629	19.43	0.001	
<i>N</i> = 153 Adjusted R^2 = .843					
<i>Panel C: Dependent variable is 2-year change in accountant's wages</i>					
Intercept	?	849	0.86	0.3914	
Recent change to 150-hour	+	1,980	2.76	0.0069	
Greater 2 years after 150-hour	+	1,682	2.61	0.0104	
Change in state wages	+	1.139	3.56	0.0006	
<i>N</i> = 102 Adjusted R^2 = .1398					

Notes: Accountant's wages for each state are taken from the fifth, sixth, and seventh editions of "American Salaries & Wages Survey" representing the time periods of December 31, 1997, 1999, and 2001, respectively. In Panel A, the sample includes all 50 states plus the District of Columbia for each of the three time periods ($N = 153$). In Panel B, the dependent variable is the difference of accountant's wages to the accountant's wages from 2 years ago ($N = 102$). "Recent change to 150-hour" is coded 1 if the state implemented the 150-hour requirement within the last 2 years, and 0 otherwise. "Greater 2 years after 150-hour" is coded 1 if the state implemented the 150-hour requirement more than 2 years ago, and 0 otherwise. "1999" and "2001" are coded 1 for observations in that time period, respectively, and 0 otherwise. "State wages" is a measure of the average wages across all professions for the state. "Change in state wages" is the ratio of state wages to state wages from 2 years ago. *p*-values are for two-tailed tests.

4.2. Supplemental Findings

In addition to examining the effect of the 150-hour requirement on audit fees, our analysis provides evidence on the following issues: (1) the effect of

competitive negotiation restrictions on audit fees, (2) the effect of direct solicitation prohibitions on audit fees, (3) the magnitude of changes in municipal audit fees over the sample period of 1989–1999. Like Hackenbrack et al. (2000), we find that the solicitation restriction (Banned) variable and the competitive negotiation variable (Florida) are significantly positive during the time period in which market was restricted from both solicitation and competitive negotiation (see Table 2, Panel A). However, the results for the Florida variable in 1989 could be partially driven by the 150-hour requirement because Florida was the only state in our sample to have implemented the 150-hour requirement in 1989.

By 1999, all competitive negotiation and solicitation restrictions have been removed, but we continue to define Banned as 1 for states that had *previously* banned solicitation. Because these states did not ban solicitation in 1999, we expect the coefficient for this variable (and Florida) to have insignificant coefficients in the 1999 model. The purpose of the Banned variable in the 1999 model is to confirm that audit fees return to normal after the solicitation restrictions are removed. In our 1999 model (Table 2, Panel B), the Banned variable is no longer positive or significant; this result confirms that audit fees return to normal after the solicitation restrictions are removed. Combined with our results for 1989, our results confirm the conclusions of Hackenbrack et al. (2000) that auditor solicitation restrictions increase audit fees. Unexpectedly, Florida municipalities continue to pay a higher audit fee in 1999. Our findings are consistent with Johnson, Freeman, and Davies (2003) who found that auditors of Florida local governments charge higher fees than auditors in other states even after the competitive negotiation restrictions were removed. Johnson et al. (2003) suggest the higher fees charged in Florida are the result of auditors working more hours. Another explanation for higher fees in Florida is the 150-hour licensing requirement.

The results for the change in audit fees model (Table 3) confirm the findings from the cross-sectional fees models. Fees decreased in those markets that had previously banned auditor solicitation. This result provides a cross-time confirmation of Hackenbrack et al.'s cross-sectional finding that auditor solicitation restrictions significantly increases audit fees. Our evidence shows that once these restrictions are removed, fees decrease. The auditor solicitation results contrast with the competitive negotiation results (Florida). Audit fees in Florida did not change significantly ($t = -0.35$) suggesting that other factors, such as the 150-hour requirement, could have driven Florida's higher fees.

To compare the magnitude of 1989 and 1999 fees, we fit a regression model to the 1989 observations for the 176 cities for which data is available

for 1989 and 1999. The regression coefficients are used to predict 1999 fees which are then compared to the actual 1999 fees. The mean difference of 0.407 implies a prediction error of $1 - e^{-.407} = 50.2\%$. For comparison, we use the procedure described by Menon and Williams (2001) and extend the accounting wage index developed by those authors to 1999. We find that the index has increased by 32.3% while the CPI has increased 34.4%. The lower 95% confidence limit for our fee prediction error is 34.6%. These results suggest that fees for our sample have increased more than the CPI, taking into account population changes and other components of our fee model.

5. CONCLUSIONS

Our results are consistent with a 10-year trend of municipal audit fees increasing at a rate significantly greater than accounting wages and consumer prices. These findings are different from those reported by Menon and Williams (2001) who found that, in their sample of private sector firms, fees did not increase in the 1990s relative to changes in accountants' labor costs. Our results for municipalities may reflect differences in a market for governmental audits where public accountants are required to become proficient in the application of accounting, reporting, and auditing standards that differ significantly from those used by businesses, or they may reflect that cities can be identified with a given state more easily than corporations.⁹

Our findings that the 150-hour requirement affects accountants' wages and audit fees supports the Lee et al. (1999) theoretical model. Fees have increased more in states that adopted a 150-hour requirement. Our test of accountants' wages provide some evidence that input costs for audits have increased in 150-hour states more rapidly than in other states. Unless offset by production efficiencies, these increased input costs are likely to be driving increased audit fees. Prior research has found that the 150-hour requirement restricts the supply of entrants to the profession (Allen & Woodland, 2006). Critics of the rule have contended that such restrictions to the supply of CPAs would increase audit costs. Our findings support the assertion made by critics that the rule increases costs to consumers of audit services. Our findings are important because the 150-hour requirement continues to be debated.

One limitation of our study is that we do not investigate whether the 150-hour requirement has improved the quality of audits. Proponents of the rule argue that audit quality will be improved because entrants to the profession

are more highly qualified. To examine whether the 150-hour requirement has improved the quality of audits, future research will need to compare audit quality either (1) across states that have and have not implemented the 150-hour requirement, or (2) for a single state both before and after implementation of the 150-hour requirement. Although audit quality is difficult to measure, a few studies have employed audit quality proxies in the local government sector.¹⁰

NOTES

1. The 41 states include Colorado which enacted the rule in 1998 and rescinded it in 2000 before it was implemented.

2. Several studies examined the efforts of CPAs to limit their own numbers including Young (1988, 1991) and Colbert and Murray (2003). Young (1988) found that when states grade their own exams, pass rates go down during economic slumps. Young (1991) found that "Restrictive licensing regimes are more likely in states where the interest-group strength of CPAs is high" (p. 809). Colbert and Murray (2003) used a case study approach to examine Colorado's rescission of its 150-hour requirement. They found that CPAs' lobbying positions are in their own best interest, and they have captured the first level of regulators, the State Boards of Accountancy.

3. Florida required that during the proposal stage, the auditee would have no knowledge of price so that the audit would be chosen on the basis of quality rather than price. Only after the auditor was chosen, the auditor and auditee would negotiate a price. If these negotiations failed, the auditee could entertain other proposals.

4. Information for the Banned variable was obtained from Jeter and Shaw (1995). The most recent information they possessed was 1987. Therefore, Banned is measured with error, which will bias the results toward finding no effect.

5. We considered using the number of years since the 150-hour requirement was adopted instead of a 0/1 variable representing the 150-hour requirement. However, because Florida adopted so much earlier than the other states in our sample, this number of years variable was highly correlated with the Florida variable ($R^2 = .90$) in the 1999 sample. When the 150-hour requirement is measured as a 0/1 variable, the correlation with the Florida variable is much more modest ($R^2 = .21$).

6. The regression model results are not sensitive to deleting observations with no rating or to defining ratings as 0 for no rating, 1 for Ba, 2 for Baa, 3 for A, 4 for Aa, and 5 for Aaa.

7. Collinearity is not a serious problem as evidenced by the variance inflation factors that are all less than 10 for each variable in every regression model. The results of the models are substantially unchanged when either the 5% most influential observations are deleted or the observations with studentized residuals greater than two. Tests for heteroscedasticity were insignificant for the residuals of each model.

8. Our findings also complement Schaefer and Zimmer's (2003) study of the effect of state regulations in the accounting profession on the earnings of individual accountants.

9. We are grateful to the Editor for the latter suggestion.

10. For example, Deis and Giroux (1992, 1996) use data from quality control reviews of Texas independent school districts for the time period 1984–1989. Brown and Raghunandan (1995) use desk reviews and quality control reviews from federal audits from the period 1990–1993. Copley, Doucet, and Gaver (1994) used data from quality control reviews collected by the U.S. General Accounting Office for 1985 audits. To examine the effect of the 150-hour requirement on audit quality, measures of audit quality from more recent audits will be required.

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DECOMPOSING THE ELEMENTS OF NONPROFIT ORGANIZATIONAL PERFORMANCE

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ABSTRACT

We outline an analytical framework, containing both financial and non-financial measures, to highlight the factors needed to evaluate nonprofit organizational performance. Similar in structure to the Dupont framework, which disaggregates return on equity, our framework disaggregates current standardized efficiency – equal to the number of standardized units of program service produced in a particular period per dollar of revenue – into component factors. Analyzing this framework provides insight into both the relevance and the limitations of using such financial measures as the fund-raising ratio to judge nonprofit organizational performance.

1. INTRODUCTION

We develop an integrated framework, incorporating both financial and nonfinancial measures, to demonstrate the usefulness and limitations of financial ratio analysis in evaluating nonprofit organizations' performance. This is a timely issue because nonprofit organizations are under considerable

pressure to demonstrate their accountability. The surges of donations following the September 11, 2001, attacks, the tsunami in 2004, and Hurricane Katrina in 2005 all brought increased public attention to the relative performance of different agencies. At the same time, the well-known corporate accounting scandals were reducing public trust in reported financial statements and in auditors.

Our framework may be used as a basis for rational discussion among managers, donors, board members, and others who seek to understand the performance of nonprofit organizations. It links together, on a theoretical level, many of the issues and trade-offs faced by nonprofit organizations, including

- Should they save donations, or spend now?
- If they do spend now, how should they allocate their spending between current programs, current administration, and additional fund-raising, which may help provide future funding?
- When they spend on programs, how should they balance the quantity and quality of services, or how should the organization balance spending on one kind of program against spending on other programs?

The benefit of our framework is to show explicitly the relationships among these factors.

At present, managers cannot “plug numbers” into our framework, and obtain exact results, because some of the variables are not currently measured. This reduces, but does not eliminate, the usefulness of our model. One benefit of our model is that it clearly indicates areas where measurements need to be improved, and serves as support to future research and standard-setting. Further, we argue that a model that is not fully measurable can still be a useful guide to action. For example, much of current auditing practice is guided by the audit risk model, even though in practice auditors do not put cardinal measures on such concepts as “inherent risk” and “control risk.” They still use the model to decide, for example, that strong controls and low inherent risk in an area, even if not precisely measurable, will allow them to reduce substantive testing in that area. Similarly, economists consider the theoretical concept of “utility” useful even though cardinal measures of utility are unavailable.

Our framework is analogous to the well-known Dupont framework for analyzing businesses’ return on equity (ROE) by decomposing the ROE ratio into ratios for profitability, turnover, and leverage. We decompose a measure of current efficiency into factors measuring: (1) relative program quality; (2) efficiency in producing units of output per dollar of program

spending; (3) efficiency in devoting spending to programs, as opposed to supporting services; and (4) efficiency in terms of devoting current revenues to support current operations.

Current operations should not be the sole measure of nonprofit efficiency. When an organization decides to save, rather than spend, in a period, it is deferring the production of charitable outputs to future periods. When it spends on fund-raising, it is making a kind of capital investment, which can produce future donations. Thus, there may be a multiplier effect of current spending on fund-raising. We expand our model to include longer-term efficiency measures that incorporate the deferred and possible multiplier effects of current fund-raising efforts.

Because the nonprofit sector is not focused on generating profits for investors, bottom-line income is not an effective performance measure. We propose measuring performance, for conceptual purposes, as the ability of the organization to accomplish services of standardized quality per dollar of revenues. This measure relates financial inputs to both quantities and qualities of service outputs, which can be broadly defined. Consistent with Behn's (2003) categorization scheme for performance measures, measures relating outcomes to inputs are conceptually appropriate for purposes of evaluation and budget. We believe our framework gives insight into management trade-offs, even where they cannot be measured precisely.

Examination of this framework has several benefits. First, it clarifies the trade-offs that exist between various factors that affect overall performance. We believe the greatest practical use of our framework will be within organizations, serving as a basis for judging alternative budgets and for evaluating performance over time. Second, it may in some circumstances be adapted for use at a program level, and serve as an internal performance evaluation tool, or as a tool for grantors to evaluate the relative performance of grantee organizations within narrowly defined sectors.¹ Third, it puts the usefulness of the program spending ratio, and the related fund-raising ratio, into perspective. Fourth, it focuses attention on areas where further research on performance measures is needed. In particular, the accounting profession needs to develop systems to measure and report program outputs, and to find ways to index measures of different kinds of programmatic output. Managers need methods of evaluating the relative desirability of providing different types of service, and different quality levels. While efforts to measure service efforts and accomplishments are ongoing, with the Governmental Accounting Standards Board (GASB) taking a leadership role (cf. GASB, 2003), these efforts are generally focused on individual output measures rather than methods of summarizing types of outputs or assessing trade-offs.

The issue of evaluating nonprofit performance has enormous practical importance due to the size of the sector. Not-for-profit organizations in 2004 received donations totaling nearly \$250 billion (AAFRC, 2005). Given the large size of the sector, the allocation of resources to effective organizations and away from ineffective organizations is clearly important to nonprofit managers and directors, donors and prospective donors, and regulators.

To assess organizational effectiveness, measures are needed not only of financial inputs, but of the physical amounts and quality of services provided. To assess efficiency, one must measure the amount of effective services provided per dollar, which requires consideration of financial inputs and physical outputs. Financial measures only provide partial solutions to the problem.

So far, the nonprofit and accounting literature do not contain adequate or general measures of effectiveness. The Financial Accounting Standards Board (FASB), in its Statement of Accounting Concepts 4, noted that such measures were needed (FASB, 1980). The GASB has devoted considerable attention to the issue (cf. GASB, 2003). Studies of organizational effectiveness in the nonprofit literature use a range of different performance measures, including summarizing questionnaires seeking evaluations of performance by informed persons; using ratios of program costs to donations, or to total expenses; revenue growth; and program spending growth (Forbes, 1998). The lack of generally accepted performance measures has also seriously impaired academic studies of nonprofit organizational behavior (Parsons, 2003). One complicating factor is that nonprofit organizations have multiple constituencies, with differing goals and preferred performance measures (D'Aunno, 1992; Herman & Renz, 1997; Murray & Tassie, 1994).

Currently, nonprofit organizations are frequently rated by external parties based only on such financial ratios as the ratio of administrative costs to total expenses, or the ratio of fund-raising costs to donations. We suggest that such financial ratios are considered by donors, not because they provide an adequate and complete measure of organizational performance, but because they represent partial measures, and no complete measures have so far been developed. Some organizations use "balanced scorecards" (Kaplan & Norton, 1992) to ensure both financial and nonfinancial measures are considered for internal evaluation purposes. We compare the use of our measure to the balanced scorecard in Section 4.

Section 2 discusses the accounting-based measures that are commonly used to judge nonprofit organizations and their limitations. Section 3 presents an integrated framework for judging performance. Section 4 discusses the implications of the framework and concludes.

2. THE USE OF ACCOUNTING-BASED FINANCIAL RATIOS

It is common for donors and regulators to use certain accounting measures to judge nonprofit performance. For example, donors readily use data from the IRS Form 990 or from state regulators to compute the percentage of expenses (or revenues) the organization devotes to fund-raising expenses, administrative expenses, and programs. Survey evidence from the Council of Better Business Bureaus suggests that many donors desire financial data to guide their donation decisions (Council of Better Business Bureaus, 2003). Various authors provide guidance in interpreting these ratios.² Some authors have also used accounting data to compute the “price” to the donor of obtaining a dollar of spending on programs. See Weisbrod and Dominguez (1986), Posnett and Sandler (1989), Khanna, Posnett, and Sandler (1995), Okten and Weisbrod (2000), Tinkelman (1999), and Marudas and Jacobs (2004).

Accounting standard-setters devote considerable attention to defining functional categories of expenses, in the belief that donors and regulators find such categories helpful. The work of the National Health Council (1964) is an early example. More recent pronouncements include FASB (1980) Statement of Accounting Concepts No. 3, FASB Statements 116 and 117 (FASB 1993a, 1993b), and various AICPA pronouncements (AICPA, 1978, 1987, 1994, 1998, 2002).

A recent court case focused increased attention on accounting measures of nonprofit organizational efficiency. The US Supreme Court, in the 2003 case of *Madigan v. Telemarketing Associates*, ruled that a telemarketer could be prosecuted for fraud for misrepresenting a particular financial ratio, the ratio of fund-raising expenses to donations. This case attracted enormous attention among charitable organizations, professional fund-raisers, watchdog agencies, and state regulators. Charitable organizations and professional fund-raisers argued strongly that the fund-raising ratio was poorly defined, inconsistently measured, and a misleading and inadequate measure of organizational performance. Because fraud, by definition, must involve misrepresentation or omission of a material fact, the Court was in effect being asked to opine on whether the fund-raising ratio was an important fact. When the Court held that the State of Illinois could bring a fraud action against the telemarketer, it implicitly endorsed the relevance and materiality of the fund-raising ratio to donors.

The use of ratios by regulators to evaluate organizations has real-world consequences. The US Supreme Court recognized that nonprofit organizations

could legitimately vary in the fraction of their funds spent on fund-raising, and barred states from prosecuting organizations simply because fund-raising levels are high. The Court noted that such restrictions would tend to penalize organizations that promoted unpopular causes, or combined fund-raising and educational efforts. However, various other parties are quick to judge organizations by this ratio. For example, in 2003 the Better Business Bureau/Wise Giving Alliance, an important public watchdog group, changed its standards of acceptable spending by nonprofit organizations to require that organizations spend no more than 35% of their funds on fund-raising.³ Its previous standard was 50%. The change in standards is likely to damage some organizations' reputations and fund-raising abilities. Other organizations, to stay in compliance, are likely to reduce their fund-raising efforts, at the cost of decreasing their total funds available to fund programs. The Nonprofit Overhead Cost Project of the Urban Institute suggests that skimping on administrative overhead can reduce the effectiveness of organizations (Urban Institute, 2004a).

There is also evidence that donors use financial ratios to determine their allocations of charitable gifts. Studies that find significant associations of donations with one or more ratios include Weisbrod and Dominguez (1986), Posnett and Sandler (1989), Callen (1994), Stout (1997), Khanna et al. (1995), Tinkelman (1999, and 2004), Greenlee and Brown (1999), Okten and Weisbrod (2000), Marudas (2003), and Marudas and Jacobs (2004). The evidence is mixed. Steinberg (1983, 1986a, 1986b) did not find a relationship between donations and the ratios of either administrative or fund-raising costs to donations in his analysis of IRS data from the 1970s. (However, see Tinkelman (1999) regarding the model used for this testing.) Frumkin and Kim (2001) find no relationship between donations and an administrative cost ratio.

Since accounting ratios are being used as performance measures, it is important to consider if they are relevant and reliable. Several major categories of objections have been raised.⁴ For our purposes, the most significant objection is that accounting ratios are *incomplete* performance measures, in that they fail to consider the quantity and quality of service outputs, or organizational strategy. For example, organizations reliant on foundation grants have different fund-raising ratios than organizations reliant on direct-mail campaigns to individuals (Baber, Roberts, & Visvanathan, 2001). The ratios also focus only on the current period, and thus omit future benefits from current spending or from current saving. In some cases, the current period's fund-raising should be considered an investment in donor relationships, which should not all be expensed in the current period.

Financial ratios do not purport to measure such crucial factors as quantity of charitable output and quality of charitable output. They do not measure effectiveness in the use of funds. An organization might be highly inefficient in raising funds but highly efficient in using those funds to deliver quality output to beneficiaries. Similarly, organizations will differ in the effectiveness of their administrative spending in improving the quality of their program efforts.

Although researchers have paid much attention to fund-raising ratios, in part because of data availability, considerations of nonprofit effectiveness have been part of the debate. Both FASB and GASB suggest the disclosure of “service efforts and accomplishments (SEA),” or service efforts and accomplishments of nonprofits (Brace, Elkin, Robinson, & Steinberg, 1980; FASB, 1980; GASB, 1987), with goods and services being the accomplishments, and efforts being the resources and the processes through which they are employed. One proposal is to report a nonprofit organization’s outputs and its outcomes – in other words, the relation of goods and services supplied to improvement in conditions. The GASB has sponsored a variety of research projects (GASB, 2003). However, SEA eludes quantification. Cherny, Gordon, and Herson (1992) describe effectiveness of a nonprofit as the satisfaction of the beneficiaries’ utilities. This has, in general, been taken to involve nonfinancial and supplemental information, and has proven elusive.⁵ Gordon, Khumawala, and Kraut (2004) found that only 5 of 75 organizations in their sample included information on service efforts or accomplishments in the notes to their annual reports.

3. DECOMPOSING FACTORS AFFECTING ORGANIZATIONAL PERFORMANCE

As noted earlier, no one measure of performance is likely to satisfy the varied needs of all users. We choose to concentrate on the organization’s ability to produce outputs (which can be broadly defined) from financial inputs.

3.1. Single-Period Analysis

Our model is inspired by the well-known Dupont framework for analyzing the “ROE” of for-profit organizations. Algebraically, the Dupont framework is expressed as follows:

$$\text{ROE} = \frac{\text{NetIncome}}{\text{Equity}} = \frac{\text{NetIncome}}{\text{Sales}} \times \frac{\text{Sales}}{\text{TotalAssets}} \times \frac{\text{TotalAssets}}{\text{Equity}} \quad (1)$$

Intuitively, the Dupont framework decomposes the overall ROE measure into factors for profitability (net income per dollar of sales), turnover (sales per dollar of assets available to managers), and leverage (assets per dollar of equity). Analysis of these three factors yields a deeper understanding of how businesses achieve a given level of ROE. It also helps managers intelligently decide how to trade-off different aspects of performance. For example, it may make sense in some cases to reduce prices, thus reducing profitability per dollar of sales, if the lower prices yield a sufficient increase in asset turnover. Judging management only on one dimension, such as turnover, would yield an incomplete assessment of how management's efforts affect returns.

The performance of nonprofit organizations can, in theory, be analyzed using an analogous series of ratios. First, we define effectiveness in terms of the charitable outputs actually produced. A given organization may produce a variety of outputs. For example, an international relief organization may provide both food and medical aid. It is conceptually necessary to convert the actual units of output to some standardized index to sum the total output. We define CSE as current standardized efficiency, equal to the number of standardized units of program service produced in a particular period per dollar of revenue. Then, in a one-period setting, we can treat CSE as the product of four factors, as follows:

$$\text{CSE} = \frac{\text{CSU}}{\text{AU}} \times \frac{\text{AU}}{\text{PE}} \times \frac{\text{PE}}{\text{TE}} \times \frac{\text{TE}}{\text{TR}} \quad (2)$$

where CSU is the current standardized units (i.e., the number of standardized units of output quality produced in the current period); AU the actual units (i.e., the actual number of units of output produced); PE the program expenses, in dollars, in the current period; TE the total expenses in the current period; and TR the total revenues in the current period.⁶

We define the first factor, CSU/AU, as the "Program Quality Index." It is a measure of how the actual units produced compare to a standard quality index. An international relief organization that ships many tons of supplies overseas would have a high level of actual units delivered, but if the supplies were spoiled, or inappropriate to the needs of the population, the supplies would only correspond to a low level of standardized tons of supplies.

The concept of Current Standardized Units is an important one for any organization with multiple outputs. Deciding what relative values to place on differing outputs will force management to very clearly determine its priorities. Determining the best way of standardizing units is likely to be the

most difficult part of applying our model. Organizations are likely to have to settle upon rules of thumb to try to make differing program outputs, and differing program qualities, comparable.⁷

We call the second factor, AU/PE, the “Program Output Index.” It measures how many units of output the organization obtains for each dollar expended. An international aid organization that buys food cheaply from farmers would have a higher program output index than one that pays retail prices for food.

The third factor, PE/TE, is the “Program Spending Ratio.” It measures the fraction of the current year spending devoted to programs, rather than to administrative or fund-raising expenses. It is clearly related to the fund-raising ratio. It is also related to “Price” in academic writing (see [Parsons, 2003](#)). An organization spending a large percentage of its revenues on programs would have a high PE/TE.⁸

The fourth factor, TE/TR, is the “Current Spending Factor.” It measures the extent to which current revenues are expended in the current period, as opposed to being saved for use in future periods. This term captures the amount of funds devoted to reserves.

This framework puts both the usefulness, and the limitations, of accounting ratio analysis of nonprofit organizations into perspective. In its entirety it captures numerous dimensions of a nonprofit’s activities. An organization devoted to delivering meals to the elderly will be measured first on the Program Quality Index: how does the quality of its meals and the timeliness of their delivery compare with an objective standard. Second, it would be evaluated on the basis of the Program Output Index: how efficient is the organization in obtaining meals from suppliers. Third, it would be assessed according to the Program Spending Ratio: how effective is the nonprofit in utilizing its contributions for meals programs rather than for fund-raising or administration. Finally, the Current Spending Factor would capture the degree to which revenues are being spent on current meals programs, rather than being saved for future meals programs.

Clearly, certain ratios are relevant to the overall assessment of effectiveness. All other things held constant, organizations that save less, and devote higher proportions of their spending to program expenses, will have higher Current Spending Factors and higher Program Spending Ratios. They will therefore be more effective in delivering services in the current period. Thus, it is not surprising that various studies, cited earlier, find associations between donations and measures of ratios similar to the program expense ratio, nor that [Marudas \(2003\)](#) finds an inverse relation between donations and amounts of reported accumulated savings.

However, it is unreasonable to expect all other things to be constant. The framework indicates that the two accounting ratios, the Program Spending Ratio and the Current Spending Factor, explain only part of the story. Measures of quality and quantity of output are outside the scope of the two accounting ratios.

Just as a for-profit manager may trade off such factors as profit margin and turnover to achieve higher ROE, a nonprofit or governmental manager may logically make trade-offs both within and among the four components of CSE. For example, choosing to produce more of one output and less of another is a choice among products that together make up Current Standardized Units. Managers weigh the relative values of the two outputs to make rational choices. Increasing output quantity at the expense of output quality is a trade-off between two different components of CSE, namely the Program Quality Index and the Program Output Index. Less obviously, there will be cases where increasing dollars spent on current programs, and decreasing spending on current administration, may result in lower, not higher, levels of CSU. In this case, the greater program spending has the direct mathematical effect of raising the Program Spending Ratio. However, if there is inadequate administrative infrastructure, the organization may have trouble maintaining production of output (AU) and maintaining output quality (as measured by the ratio of CSU to AU). The higher Program Spending ratio may be more than offset by declines in the Program Quality Index and the Program Output Index.

In our formulation, an increase in fund-raising at the expense of program spending reduces CSE. However, another trade-off should be recognized, because more fund-raising may raise additional current year donations, meaning more services can be delivered, albeit at lower *per-dollar* effectiveness levels. An organization may decide it is better to feed 10,000 hungry people than 1,000, even if the food is delivered marginally less efficiently or effectively per person served or per dollar spent. As noted later, the analysis for the multiperiod setting must also recognize the possible future multiplier effect of current fund-raising.

We have included a hypothetical numerical example of the application of this framework in the appendix.

3.2. Multi-Period Analysis

To expand the analysis beyond a single period, we consider two more factors. First, funds saved in the first period may vary in the degree to which

they are spent on programs in subsequent periods. Second, fund-raising expenditures in the first period may raise donations in subsequent periods, which will support additional program expenditures. As noted earlier, while accounting standards expense all fund-raising spending in the current period, some probably represents an investment in future relations with donors.

We define the number of Deferred Standardized Units (DSU) as the program units produced in future periods by the expenditure of funds raised, and saved, in the initial period. The funds saved in the initial period = total revenues (TR) – total expenditures (TE). The savings result in incremental funding available in future years, designated as IF. We can define DSE (deferred standardized efficiency) mathematically as follows, where Δ indicates the change in the variable

$$\text{DSE} = \sum_{t=1}^{\infty} \frac{1}{(1+i)^t} \left(\frac{\Delta \text{DSU}_t}{\Delta \text{AU}_t} \times \frac{\Delta \text{AU}_t}{\Delta \text{PE}_t} \times \frac{\Delta \text{PE}_t}{\text{IF}_t} \times \frac{\text{IF}_t}{(\text{TR}_0 - \text{TE}_0)} \times \frac{(\text{TR}_0 - \text{TE}_0)}{\text{TR}_0} \right) \quad (3)$$

In this formulation, the deferred standard units are the product of six factors, including, from left to right:

- a discounting factor;
- a Program Quality Index ($\Delta \text{DSU} / \Delta \text{AU}$);
- a Program Output Index ($\Delta \text{AU} / \Delta \text{PE}$);
- a Program Spending Ratio, expressed as the change in program expenditure each future year as a fraction of the incremental funding, IF;
- a Savings Usage Index, expressed as incremental funding divided by the original savings; and
- the original level of savings as a fraction of initial period revenues.

The parts of this model that differ from the single-period setting are the original level of savings, the Savings Usage Index, and discounting. For there to be deferred benefits, there must first be savings. The original savings level represents that part of year zero revenue, which was not spent in year zero. (To the extent the year zero revenue is spent in year zero, it increases the measure of CSE. If expenses exceed revenues in year zero, the original savings level will be negative, and future periods will produce fewer units due to the need to pay-off the year zero deficit.) Then, the savings must be used to generate benefits in some later year. The Savings Usage Index, for some subsequent year j measures the portion of the original savings that is

spent in year j , which would be the incremental funding in year j , divided by the original savings. Thus, the combination of original savings, and the Savings Usage Index for a subsequent year, determines the extra amount of funds the organization will spend in that year. Since the spending is deferred, a discount factor is applied.

The other three terms in this model (the Program Quality Index, the Program Output Index, and the Program Spending Ratio) are all identical to the corresponding terms in the one-period setting. They measure the extent to which: extra money spent is used on programs, extra spending on programs produces extra output, and extra output can be categorized as standard-quality output.

We also need to consider the multiplier effect induced because spending on fund-raising efforts in the initial period, FR_0 , may induce future donations, DON_t , which may in turn be spent on programs in future periods. If we define this additional level of output as MSU, for Multiplier Standardized Units, then the Multiplier Standardized Efficiency (MSE) is computed as follows:

$$MSE = \sum_{t=1}^{\infty} \frac{1}{(1+i)^t} \left(\frac{\Delta MSU_t}{\Delta AU_t} \times \frac{\Delta AU_t}{\Delta PE_t} \times \frac{\Delta PE_t}{\Delta DON_t} \times \frac{\Delta DON_t}{FR_0} \times \frac{FR_0}{TR_0} \right) \quad (4)$$

This equation uses similar terms and logic as the previous model. The intuition is that the effect of the first period expenditure on fund-raising on future charitable output depends upon

- the organization's focus on fund-raising in period zero (FR_0/TR_0 , or the fund-raising ratio);
- the productivity of the fund-raising efforts in raising future donations ($\Delta DON/FR_0$);
- the use of incremental donations for incremental program spending ($\Delta PE/\Delta DON$);⁹
- the organization's efficiency in converting spending on programs to actual units of output ($\Delta AU/\Delta PE$); and
- the organization's ability to achieve proper output quality ($\Delta MSU/\Delta AU$).

In this model, a high fund-raising ratio will have two effects. First, higher spending on fund-raising will, all other things being equal, mean reduced program spending. This reduces CSE. However, fund-raising has a positive effect on future program service delivery.

While MSE is defined as an infinite sum, there are reasons to believe that in practice only a short horizon will be appropriate, except possibly for gifts in whole or in part restricted to future use, such as endowment gifts. First, if donors have high preferences for current expenditures, the applicable discount rate will be high. Second, much fund-raising is either direct mail or telephone, not long-term brand-building, and so the incremental donations induced are all likely to come from short periods after the fund-raising expenditures.¹⁰ Also, if the ratio of donations to fund-raising becomes less than one, standard multiplier analysis comes into play, and the result will be bounded.

Putting the results of Eqs. (2), (3), and (4) together, the total standardized output (TSU) of an organization can be expressed as the sum of the current units, the future units made possible by savings, and the future units induced by the multiplier effect of fund-raising expenditures, or, mathematically

$$\text{TSU} = \text{CSU} + \text{DSU} + \text{MSU} \quad (5)$$

The total standardized efficiency is found by dividing the total number of standardized units by the total revenue of the organizations, or adding the three efficiency measures, so

$$\text{TSE} = \text{TSU}/\text{TR} = (\text{CSU} + \text{DSU} + \text{MSU})/\text{TR} = \text{CSE} + \text{DSE} + \text{MSE} \quad (6)$$

While our analysis is performed using average data for each period, one could readily convert the analysis to a marginal basis. In theory, it would be correct to save when the marginal deferred standardized efficiency exceeds the sum of the marginal current and multiplier standardized efficiency measures.

4. DISCUSSION AND CONCLUSION

The issue of evaluating nonprofit organizational performance is a difficult one. Traditional financial measures alone are clearly inadequate. One way that some organizations attempt to incorporate both financial and non-financial measures in performance evaluations is through use of the “balanced scorecard” (Kaplan & Norton, 1992). A balanced scorecard is typically made up of 15–20 measures, divided among the 4 areas: performance for customers,

traditional financial measures, internal processes, and innovation and improvement activities (Kaplan & Norton, 1993). The measures are chosen by management to represent key performance measures, and are measured and reported separately. The development, communication, and use of these measures requires considerable time and management involvement, but has the benefit of forcing managers to consider key drivers of performance in their organization. Kaplan and Norton (1996) cite as one of their examples a bank that took 30 months to implement a balanced scorecard system.

Our framework addresses most of the same areas as the balanced scorecard, but is conceptually more tightly integrated. Clearly, our model incorporates traditional financial measures of efficiency. Our emphasis on standardized quality and on quantity of desired outputs overlaps with the balanced scorecard areas of performance for customers and internal processes. While our framework does not explicitly have goals for learning and innovation, we believe organizations attempting to improve performance, and studying the disaggregated factors of our framework, will have tools to learn from their experience. What makes our model more integrated is its focus on arriving at a single indexed score. An issue in using balanced scorecards for such purposes as compensation is how to weight the various measures. The measures in the balanced scorecard can be quite diverse, including such factors as the number of hours spent with prospects discussing new work (Kaplan & Norton, 1993), and no natural weighting or aggregation method presents itself. In our framework the disaggregated measures fall into a logical sequence.

The decomposition of factors affecting efficiency presented here, while somewhat oversimplified, serves to bring out some of the complexities of measuring the efficiency of not-for-profit organizations. While there may be circumstances where our framework can be applied numerically, we believe its greater value is to focus attention on managerial trade-offs and on areas where research is needed. In practice, we expect it is most likely to be used internally within organizations. The difficulties of arriving at objectively supportable relative weights for various outputs are likely to limit the use of the framework by outsiders seeking to compare organizations. One exception might be grantors seeking to compare organizations providing narrowly defined types of services.

The framework for measuring efficiency in this chapter contains both terms that are currently reported and terms that are not currently measured. Terms that are currently reported, or calculable easily from financial statements, include total expenses; total revenues; total program expenses; current year revenues not expended; and the degree to which current year spending

exceeds current year revenues, and is thus a draw-down of prior savings. Terms that are not currently reported include actual units of output; an index to convert actual units of output to a standard quality index; measures of incremental donations induced by prior year fund-raising efforts; measures of incremental program spending funded by these incremental donations; and the planned year of expenditure of saved donations.

Based on this framework, the decision-usefulness of the particular financial ratios can be seen in context. For example, the ratio of program expenditures to total revenues is a relevant ratio. *Ceteris paribus*, a higher ratio does indicate a more efficient organization in the current period.

However, we can also see what factors may cause a single-minded focus on the program ratio to be misleading. For example, overspending on programs may result in unfavorable quality due to a lack of adequate overall administrative leadership. Alternatively, low spending on programs in a current year may be indicative, not of inefficiency, but of an organization's prudent decision to save, expecting future years' productivity or quality to be better than the current year's. As a third example, an organization with a favorable fund-raising function may properly exploit a high marginal return on fund-raising to induce high future donations, in the confidence that high current diversion of funds to fund-raising efforts will result in larger future programs.

For the framework to be used in a numeric form, more research is needed. In particular, methods of measuring quantities and qualities of actual outputs are required, as well as a system for computing indices to allow measurement of outputs of organizations with a variety of different outputs. There may be some situations where market forces give some evidence of these measures. For example, one could conceive of a situation where famine relief in the form of bags of grain and other foodstuffs is provided to an area, which also has a functioning market supplying food to those people who can afford to pay. Then the local market prices could help determine the relative values of the various physical food deliveries.

Given the difficulty of the task of arriving at generally usable quality and quantity measures, it is likely that this model will be applied in a subjective, judgmental form. In some ways, the situation is analogous to that in auditing, where auditors consider the effects of control risk, inherent risk, and detection risk on audit risk even though they are rarely able to compute cardinal measures of any of these theoretical constructs. Our framework provides for clear discussions of the trade-offs organizations must make. While organizations may not be able to precisely measure "standardized outputs," using this framework may force managers to ask the hard questions

needed to make rational trade-offs. Which outputs are most valuable? What level of quality can we sacrifice to serve more people? Does spending now make sense, or should we wait?

The framework can also help skeptical financial statement users frame questions in an organized fashion for evaluating performance. If, for example, an organization announces it has exceeded its goals of units of service in three areas, but fallen short on one, the framework would raise various questions. How important was the one area, versus the three, in terms of “standardized units?” Did the goals include quality standards, and, if not, was quality compromised to obtain the outputs? How costly per unit was the achievement of the goals? Did the achievement come at the expense of future efforts?

NOTES

1. We discuss later some of the issues involved in arriving at measures of standardized units of output. These issues are less critical when the framework is used internally, or by grantors operating in a narrowly defined area of service.

2. See, for example, [Swords \(2001\)](#) and [Schmidt \(2002\)](#).

3. See the standards for assessing organizational performance, on www.give.org.

4. Other criticisms involve the inaccuracy of the measures; the freedom organizations have to use differing cost allocation methods; the volatility of the ratios as responses to fund-raising appeals change over time; the inaccuracy of IRS data; and the failure of accounting measures to capture the marginal relations of donations to program spending. See [Grimes \(1977\)](#) for an early critique of the use of fund-raising ratios, and [Association of Fundraising Professionals \(2003, p. 4\)](#) for a more recent critique. See [Steinberg \(1986a, 1986b\)](#) regarding the importance of using marginal data. See [Froelich and Knoepfle \(1996\)](#) and [Gordon, Greenlee, and Nitterhouse \(1999\)](#) for discussions of limitations in the data. The Urban Institute’s Nonprofit Overhead Cost Project noted that the functional classification of expenses, particularly personnel expenses, was a low priority for nonprofit organizations, and they reported that “obvious functional expense reporting errors occur in audited financial statements and Forms 990 even when the documents are prepared by auditors and CPAs” ([Urban Institute, 2004b](#)). Some studies, analogous to the earnings management literature, suggest that nonprofit managers may deliberately misallocate expenses to “manage” ratios to more favorable levels. For example, [Greenlee and Gordon \(1998\)](#) found numerous cases where Pennsylvania charities that used professional fund-raising consultants reported spending zero on fund-raising costs. See also [Krishnan, Yetman, and Yetman \(2003\)](#), [Khalaf \(1992\)](#), [Trussel \(2003\)](#), and [Yetman \(2003\)](#).

5. The funding sources of many nonprofits are also a blend of the donative and the commercial ([O’Hagan & Purdy, 1993, p. 157](#)), depending, for example, on patrons and on ticket sales, on benefactors and on hospital revenues. But for the purpose of this study, the commercial aspect of nonprofits will be regarded as constant; only the donative will vary.

6. We measure all financial variables on the accrual basis. The information available to outside donors generally comes from either financial statements or the IRS Form 990, which are generally prepared on the accrual basis. Second, accrual accounting uses the matching principle to try to meaningfully match expenditures against related operating revenues. Thus, the cost of a capital expenditure would be spread over its useful life under the accrual basis.

7. Such issues arise in other areas of economic measurement. For example, government efforts to measure inflation must first settle upon some basket of goods considered representative, and use those goods to create an index. Then, over time, the Consumer Price Index must take into account changes in the qualities of the goods in the index as well as changes in their prices.

8. To the extent an organization manipulates its expense allocation process, the amount reported as program expenses might misrepresent the actual usage of funds. However, the positive effect on the Program Spending Ratio would be offset by the negative effect on the Program Output Index.

9. This model ignores second-order multiplier effects arising when some funds raised in subsequent periods are used to raise still more funds.

10. The literature on advertising also suggests that most advertising has limited long-term impact. See Ehrlich and Fisher (1982).

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APPENDIX. APPLYING THE ANALYTICAL FRAMEWORK TO A HYPOTHETICAL ORGANIZATION

In this appendix, we apply our analytical framework to a hypothetical nonprofit organization for a single period. The mission of the Tropical Anti-Polio Institute (“TAPI”) is to inoculate residents of a tropical country against polio. TAPI buys vaccines on the open market, and uses its staff and equipment to distribute and administer the drugs free to patients.

Baseline Scenario

The following facts describe the budgeted operations of TAPI.

- Budgeted revenues are \$10 million and budgeted expenses are \$9.5 million, leaving \$0.5 million to be saved for use in future years.
- It has budgeted \$1 million for administrative overhead and fund-raising; and \$8.5 million for programs.

- Of the \$8.5 million in program spending, \$5.5 million will be spent on vaccines.
- The remaining \$3 million is budgeted for program staff salaries, transportation, refrigeration of the vaccines, and other necessary costs of fulfilling its mission.
- The wholesale cost of the vaccines is \$5 per dose, so TAPI plans to buy 1.1 million doses. Each dose is expected to be actually delivered to a patient.
- There is approximately a 90% chance that a dose will provide immunity. Thus, the 1.1 million doses will actually immunize approximately 1 million people.

CSE in this case can be measured directly as the ratio of people immunized to dollars of revenue. Revenue = \$10 million, and 1 million people were immunized. This reduces to 0.100 immunizations per dollar of revenue.

CSE can also be measured indirectly, as the product of four factors:

- The Program Quality Index is the ratio of current standardized units of output (CSU) to Actual Units (AU). Here, the standardized unit would be 1 million patients immunized. The actual units would be 1.1 million doses delivered. $CSU/AU = 1 \text{ million}/1.1 \text{ million}$, or approximately 0.909 immunizations per doses delivered.
- The Program Output Index is the ratio of actual units (AU) of output to the program expenses (PE). Here, 1.1 million doses were delivered, and \$8.5 million was spent on programs. The program output index would equal $1.1/8.5$, or about 0.129 actual doses delivered per dollar of program expense.
- The Program Spending Ratio is the ratio of program expenses to total expenses. In this case, the ratio = \$8.5 million/\$9.5 million of total spending. This reduces to 0.895 dollars of program spending per total spending.
- The Current Spending Factor is the total expenses in the period divided by total revenues. In this case, the Current Spending Factor = \$9.5 million divided by \$10 million in revenues, or 0.950.

These four factors could be combined as follows:

$$\begin{aligned} \text{CSE} &= 0.909 \text{ immunizations per dose} \\ &\times 0.129 \text{ dose per program dollars spent} \\ &\times 0.895 \text{ program dollars per total dollars spent} \\ &\times 0.950 \text{ total dollars spent per dollars of revenue} \end{aligned}$$

The units of the intermediate terms cancel out, and the result (ignoring rounding) is $CSE = 0.100$ immunization per dollar of revenue, the same as what was computed directly.

It is clear from this model that certain decisions are “no-brainers.” For example, if TAPI could buy and administer the same drugs for half the per-dose price, the Program Output Index would rise, no other factor would be affected, and CSE would improve. If TAPI could obtain vaccines with a better than 90% effectiveness rate, for the same price, its Program Quality Index would rise, no other factor would be affected, and CSE would improve.

Other managerial decisions are more complex, since they involve trade-offs between current and future effects, or between the four component ratios in the current period. The following two alternative scenarios explore these issues.

Alternative Scenario 1: Change Savings Assumption

What would be the effect of increasing the savings from \$500,000 to \$1 million?

Current spending must decrease from \$9.5 million to \$9 million, so the Current Spending Factor falls from 9.5/10 to 9.0/10. If nothing else changed this would reduce CSE by about 5%. However, the ultimate impact on CSE depends on *how* spending is cut.

If the entire cut is from fund-raising or administrative expenses, and if there was so much slack in these areas that the cuts in spending have no impact on current revenues or on outputs, then CSE would end up unchanged. The program spending ratio would increase from 8.5/9.5 to 8.5/9.0, exactly compensating for the reduction in the Current Spending Factor. (The other two ratios would be unchanged.)

If the entire cut is from vaccine purchases, then only 1 million doses can be bought, and these doses will only immunize about 900,000 people. CSE falls from 0.10 to 0.09, since \$10 million in revenues now results in only 900,000 immunizations, not 1 million. In this case, three ratios are all affected in the same direction. The Current Spending Factor falls from about 0.95 to 0.90, as discussed earlier. The Program Spending Ratio falls slightly from 8.5 million/9.5 million (or 0.895) to 8 million/9 million, or 0.889. The Program Output Index is a third contributor to the declining efficiency. Since we have assumed the same staff and program support services are now being used to deliver fewer vaccines, the delivery process is

less efficient. The Program Output Index falls from 1.1 million doses/\$8.5 million in program expense (or 0.129) to 1 million doses/\$8 million in program expense (or 0.125). The Program Quality Index is unaffected, and remains 0.90.

$$\text{CSE now} = 0.90 * 0.889 * 0.125 * 0.90 = 0.090$$

The impact on CSE from the decision to increase savings by 5% of total revenues ranges from no effect (if administrative and fund-raising can be cut without adverse effects) to a fall of 10% (from 0.100 to 0.095). Whether the manager should actually increase the savings also depends on the expected future benefits from spending the saved funds in the coming years.

Alternative Scenario 2: Changing the Administrative Structure to Improve the Vaccine's Efficacy

The efficacy of many vaccines depends upon how they are stored and handled. We assume in this scenario that TAPI is considering changes to its administrative structure that will allow it to do better purchasing of vaccines, to train its workers better, and to have better control over the handling of the drugs. Would TAPI be justified in asking a donor for a special grant of \$1,000,000 to fund administrative infrastructure improvements, if it could increase the rate of successful inoculation per dose delivered from 90% to 95%?

Assume that all the assumptions in the baseline case are still valid, except that total revenues now equal \$11 million, administrative and fund-raising spending total \$2 million, and the rate of successful inoculation is 95%. Would CSE rise or fall?

We first compute CSE directly. Total revenues, the denominator, are now \$11 million. The same total number of doses of vaccine is delivered, 1.1 million. However, now 1,045,000 people, not 1 million, have been successfully immunized. CSE now equals 0.095, or about 5% *worse* than the level of 0.100 in the base scenario.

Why did CSE decline? The increases in the Program Quality Index from 0.90 to 0.95 and in the Current Spending Index (from 9.5/10 to 10.5/11) were more than offset by a larger decline in the Program Spending Ratio as the organization spent a larger proportion of its funds on administration. The Program Output Index is unchanged.

Should the donor be unhappy? On the one hand, more people have been immunized, which is a good thing. However, if the donor could have made the same donation to an organization with a CSE of 0.100, then the \$1 million donation would have immunized more people.

Could the managers have made other trade-offs to maintain CSE at 0.100 while increasing administrative spending by \$1 million? With this example, an increase in the effectiveness of the vaccine to 100% would result in a CSE of exactly 0.100. This means that the most additional extra spending that could be justified by an increase in the Program Quality Index is \$1,000,000. Additional administrative costs might also be justified by improvements in the Program Output Index. Better administration might result in eliminations of inefficiencies in the delivery of vaccines. Reducing savings, and using the funds on programs, would also improve current efficiency, albeit at the expense of future years.

AUDITOR ATTESTATION OF MANAGEMENT'S EVALUATION OF INTERNAL CONTROL: EVIDENCE FROM THE NONPROFIT SECTOR

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ABSTRACT

Section 404 of the Sarbanes–Oxley Act (SOX), which requires SEC registrants to include a management report on internal control and auditor attestation of such a report, has elicited strong opposition from registrants. Although not required, some nonprofits voluntarily have their auditor attest to management's evaluation of internal control. Using survey responses from chief financial officers of large nonprofit organizations, we examine factors associated with voluntary auditor attestation of management's evaluation of internal control over financial reporting. Our results indicate that auditor attestation is more likely for nonprofits that have a higher proportion of audit committee members with financial expertise and are in the education sector, but less likely for nonprofits with greater restricted funds. Overall, the evidence supports the notion that nonprofit organizations respond differently to the voluntary use of auditor attestation depending on their resource dependency and other individual

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characteristics. Given the ongoing controversy and efforts to change the mandatory internal control reporting required by SOX, the evidence in this chapter can be useful to ground arguments in empirical evidence.

AUDITOR ATTESTATION OF MANAGEMENT'S EVALUATION OF INTERNAL CONTROL: EVIDENCE FROM THE NONPROFIT SECTOR

Section 404 of the Sarbanes–Oxley Act (SOX, 2002) requires SEC registrants to include in annual reports (a) a management report on internal control and (b) auditor attestation of the report. Section 404 has become arguably the most controversial issue of SOX. Faced with vociferous opposition from companies, the SEC has thrice postponed the implementation date of the internal control reporting requirement (SEC, 2004a, 2004b, 2004c, 2005c).¹ In addition, the SEC hosted a roundtable to “evaluate the implementation” of Section 404 (Solomon, 2005) and formed an advisory committee to deal with problems related to implementation of Section 404 on smaller companies (SEC, 2004d, 2005a, 2005b).

SOX is applicable only for SEC registrants. However, other entities – such as nonprofit organizations – have started to voluntarily subject themselves to the standards mandated by SOX, including the internal control reporting requirements (*Wall Street Journal*, 2005). We examine auditor attestation of management evaluation of internal control over financial reporting for nonprofit organizations. We first provide empirical evidence about the extent of such auditor attestation of management's evaluation of internal control. We then examine the factors associated with nonprofits' voluntary use of auditor attestation of management's evaluation of internal control.

Issues related to internal control and governance in nonprofit organizations has recently attracted the attention of legislators. For example, efforts are under way in the U.S. Senate and in some state legislatures to enact legislation that would bring some elements of SOX to nonprofit organizations (U.S. Senate, 2004; Hempel & Borrus, 2004). However, internal control related issues within nonprofit entities have received little attention from researchers. Given the growing role of nonprofits in the U.S. economy, there is a need for improved understanding of extant internal control practices in the nonprofit sector.² We fill this void in the literature using data from a survey of 126 chief financial officers of nonprofit organizations as well as financial information from the *GuideStar* database to examine the

auditor attestation of management's evaluation of internal control at large nonprofit organizations.

Examining factors associated with the voluntary use of auditor attestation over internal control reports by nonprofit organizations is particularly relevant given recent developments related to internal control reporting. Given that SOX has mandated internal control reporting by all SEC registrants and the ensuing controversy, it is useful to examine auditor involvement with internal control reporting in a setting where such involvement is voluntary. Although there are many differences between SEC registrants and nonprofit organizations, evidence from an alternative setting (such as nonprofits) can shed light on incentives of organizations to involve the auditor in internal control reporting. Given the ongoing debate and efforts to change the mandatory internal control reporting required under SOX, evidence about voluntary internal control reporting can be useful to ground the arguments in empirical evidence.

Our investigation also adds to the research streams of two other areas of interest to accountants and auditors. First, empirical evidence about audit committees at nonprofit organizations is sparse.³ We provide valuable empirical evidence about the association between the characteristics of audit committees and voluntary choices related to the use of the external auditor. Second, we contribute to the literature on voluntary disclosures by providing evidence about the association between auditor attestation of internal control reports and economic and governance characteristics of organizations.

BACKGROUND AND HYPOTHESES

Legislators, regulators, and private sector bodies are interested in the reporting on internal control by management and the auditor. The Commission on Auditors' Responsibilities ([Cohen Commission, 1978](#)) and the National Commission on Fraudulent Financial Reporting ([Treadway Commission, 1987](#)) both recommended that the SEC require (a) registrants to include a management report on internal control and (b) auditor attestation of such an internal control report. The SEC proposed a rule in 1988 that required registrants to include a report on management's responsibilities for internal control, but did not subsequently implement such a rule.⁴

Congress enacted SOX as law in the aftermath of the Enron and WorldCom failures. Section 404 of SOX requires the SEC to "prescribe rules requiring each annual report . . . to contain an internal control report [from management], which shall . . . contain an assessment, as of the end

of the most recent fiscal year of the issuer, of the effectiveness of the internal control structure and procedures of the issuer for financial reporting.” In addition, SOX requires that “with respect to the internal control assessment . . . each [PCAOB] registered public accounting firm that prepares or issues the audit report for the issuer shall attest to, and report on, the assessment made by the management of the issuer.”

The requirements of SOX do not currently apply to nonprofit entities, with two limited exceptions.⁵ However, nonprofit organizations also have experienced financial scandals and problems related to controls leading to reduced public confidence in charities (Salmon, 2002). Recent problems in nonprofit organizations led to proposals from legislators and state regulators to extend the provisions of SOX to nonprofits (NCNA, 2004; U.S. Senate, 2004; Higgins, 2005). The Finance Committee of the U.S. Senate held hearings on accountability and charity reform as a prelude to enacting legislation related to the governance and auditing of nonprofit organizations (U.S. Senate, 2004; Wells, 2005). Hempel and Borrus (2004) noted that “at least 13 states are mulling new laws that apply Sarbanes–Oxley-type regulations to [nonprofits].” Of particular interest is proposed legislation in Massachusetts and New York that seeks Section 404 type internal control reporting regulations for nonprofits that exceed certain size thresholds (NCNA, 2004).

Audit partners from the Big 4 note that SOX “raises the bar in general” and that nonprofit entities would want to voluntarily comply with the new legal provisions related to audit committees (McCarthy, 2003; Tieman, 2003). Some nonprofit trustees, who are executives from large corporations, are asking whether voluntary compliance with the provisions of SOX “could send a good short-hand message to donors and regulators about the integrity of their nonprofit” (TACS, 2004). Along these lines, anecdotal evidence indicates that some nonprofit organizations have started to voluntarily comply with the provisions of SOX (*Wall Street Journal*, 2005).

In light of the aforementioned, we examine factors associated with nonprofit organizations’ voluntary use of the auditor to attest on management’s evaluation of internal control. We develop testable hypotheses related to such voluntary use of auditor attestation based on resource dependency and other organizational characteristics.

Resource Dependency Hypotheses

There is a long literature related to voluntary disclosures by corporations.⁶ The theoretical framework used in such research is based on the notion

that the demand for voluntary disclosures arises from information asymmetry and agency costs between an entity's (insider) managers and resource-providers (outsider); hence, voluntary disclosures are likely to be related to the economic and governance characteristics of organizations (Healy & Palepu, 2001).

Given the absence of "owners" or residual-claimants and the fact that the objectives of nonprofits are not well defined, the standard principal-agency framework must be adapted for nonprofit organizations. Prior research in management suggests that the resource dependency approach can be an appropriate framework to examine voluntary disclosures in the nonprofit setting (Pfeffer & Salancik, 1978). Some prior studies use the resource dependency approach to examine a variety of issues related to how nonprofits and their boards operate (e.g., Anheier, Toepler, & Sokolowski, 1997; Hillman & Dalziel, 2003; Miller-Millesen, 2003; Peng & Kellogg, 2003). We adopt the resource dependency framework to explain the voluntary use of auditor attestation of management's report on internal control by nonprofit organizations.

Specifically, we posit that differences in the composition of resources received from outsiders would be associated with differences in the perceived demand for voluntary internal control disclosures. From the perspective of a nonprofit organization, the primary benefit associated with an auditor's reporting on internal control would likely involve more favorable consideration by external parties of requests for resources. Nonprofits receive a significant amount of funding from governmental grants, donor contributions, and creditor financing. These sources of funding place restrictions on the use of their funds, which lead to the need for monitoring. Thus, our first four hypotheses are based on the need for monitoring by governments, donors, and creditors.

Governmental Grants

Nonprofits that receive governmental grants are subject to additional reporting and internal control requirements by the governments that provide funding. These additional requirements compel nonprofits to implement additional monitoring mechanisms. Nonprofits recognize that additional monitoring mechanisms help them demonstrate to their funding sources that they are fiscally responsible for government resources. Legislators, the media, and the public often scrutinize organizations that receive governmental grants. These parties are concerned whether the organization is using the funds for the intended purpose. Several studies found that the receipt of government grants is associated with nonprofits'

structure, board of directors, and operational policies (e.g., Gronbjerg, 1993; Smith & Lipsky, 1993; Froelich, 1999; Chaves, Stephens, & Galaskiewicz, 2004). Hence, we expect a direct relationship between the demand for monitoring and the receipt of governmental grants. This leads to the first hypothesis.

H₁. Nonprofits that receive government grants will be more likely to have auditor attestation of management's evaluation of internal control.

OMB (1997) circular A-133 requires that nonfederal entities that receive \$300,000 or more in one year in federal awards have a single audit or a program specific audit.⁷ Among other requirements, the Single Audit Act requires an auditor to report on internal control over federal programs.⁸

There are many differences between an auditor reporting on internal control in a Single Audit and an auditor issuing a separate attestation report on management's evaluation of internal control over financial reporting. The differences relate to the type of assurance provided, scope of the engagement, and types of controls that are evaluated.

First, in a Single Audit, an auditor is not expressing an opinion on management's assertions related to internal control but is reporting on the understanding of internal control obtained, the control risk assessment made, and any reportable conditions and material weaknesses found. In contrast, in a separate attestation report, an auditor provides a positive assurance regarding management's assessment and the effectiveness of internal control over financial reporting. Second, in a Single Audit, the scope of the evaluation of internal control only applies to controls that could have a direct and material effect on a major program; it does not apply to controls unrelated to federal awards. In a separate attestation engagement, an auditor reports on all controls that have a material effect on financial reporting. Third, in an attestation engagement, an auditor is evaluating controls over financial reporting; in a Single Audit, an auditor focuses solely on controls that have a direct and material effect on major programs.

Nevertheless, given the auditor's involvement with internal control in a Single Audit, it is plausible that entities subject to a Single Audit would be more likely to have voluntary auditor attestation of management's evaluation of internal control. This leads to the second hypothesis.

H₂. Nonprofits that are subject to a Single Audit will be more likely to have auditor attestation of management's evaluation of internal control.

Debt

The existence of debt leads to demand for monitoring mechanisms (Jensen & Meckling, 1976). For example, Chow (1982) finds that debt level is associated with the voluntary purchase of audit services, while DeFond (1992) finds that changes in leverage are positively correlated with changes in audit firm quality. Auditor attestation of management's evaluation of internal control signals to creditors that the financial reporting process is more reliable and hence the financial statements are more credible. This leads to the third hypothesis.

H₃. Nonprofits that have long-term debt will be more likely to have auditor attestation of management's evaluation of internal control.

Restricted Donor Funds

Donors can stipulate restrictions related to the expenditure of the donated assets as to purpose or time (temporarily restricted net assets) or can stipulate that the assets be held in perpetuity (permanently restricted net assets). Donors that place restrictions on the time and use of donated assets are more likely to scrutinize nonprofit organizations to ensure their donations are used for their intended purposes.⁹ Conversely, if the intent of the auditor attestation is to convince potential donors to give to the nonprofit, then an organization that already has significant resources would be less likely to use an auditor's attestation of management's evaluation of internal control. Hence, we do not predict a directional association between fund balances and the use of the auditor for attesting on management's evaluation of internal control. This leads to the fourth hypothesis (in the null form).

H₄. There is no association between the proportion of their net assets in the form of restricted funds and auditor attestation of management's evaluation of internal control.

Governance Hypotheses

Good corporate governance could enhance disclosure quality (i.e., governance characteristics and voluntary disclosure quality can be complements). As discussed later, extant research related to the association between corporate audit committees and other monitoring mechanisms supports such a perspective. We consider the following audit committee related characteristics: independence, financial expertise, and diligence (number of

meetings). We examine audit committee characteristics rather than board characteristics because the audit committee has historically been charged with oversight of the financial reporting process, including interactions with the auditor.

Audit Committee Independence

Regulators and legislators have recently directed attention to improving the functioning of audit committees by addressing audit committee composition (e.g., BRC, 1999; SEC, 1999, 2003; SOX, 2002). Such initiatives related to audit committee composition have concentrated on two issues: independence and expertise. The composition of audit committees is also important in the nonprofit sector, particularly given the emphasis on board members' independence and diligence that are the focus of recent legislative efforts to improve the governance of nonprofit organizations (NCNA, 2004).

Section 301 of SOX reflects legislators' concerns about audit committee member independence, and mandates that all members of the audit committee must be independent. Evidence from prior research suggests that there is a positive association between the presence of independent audit committee members and a variety of outcomes related to financial reporting, including earnings management (Klein, 2002; Bédard, Chtourou, & Courteau, 2004), absence of fraud or restatements (McMullen & Raghunandan, 1996; Beasley, Carcello, Hermanson, & Lapides, 2000; Abbott, Parker, & Peters, 2004), and audit reports (Carcello & Neal, 2000). We posit that nonprofit boards that have independent directors would be more likely to voluntarily use the auditor for attesting on management's evaluation of internal control. This leads to the fifth hypothesis.

H₅. Nonprofits that have independent directors on the audit committee will be more likely to have auditor attestation of management's evaluation of internal control.

Audit Committee Expertise

Section 407 of SOX mandates SEC registrants to disclose whether the audit committee has at least one financial expert. Prior research finds that corporate audit committees that have at least one member with accounting and finance expertise are (a) more likely to understand auditor judgments and be more supportive of auditor judgments (DeZoort, 1998; DeZoort, Hermanson, Archambeault, & Houston, 2003), (b) less likely to have

financial reporting problems (McMullen & Raghunandan, 1996), and (c) less likely to have suspicious external auditor switches (Archambeault & DeZoort, 2001). DeFond, Hann, and Hu (2005) find that firms that add a financial expert to their audit committee experience a significant positive stock price reaction. We expect that audit committee members with financial expertise will be more concerned with the quality of the financial reporting system, and will seek to signal the quality of the system by having the auditor attest to management's evaluation of internal control. This leads to the sixth hypothesis.

H₆. Nonprofits that have financial experts on the audit committee will be more likely to have auditor attestation of management's evaluation of internal control.

Audit Committee Diligence

Prior researchers examining issues related to audit committees have used the number of meetings of the committee during a year as a proxy for the diligence of the committee (DeZoort, Hermanson, Archambeault, & Reed, 2002). Evidence from prior research suggests that more frequent corporate audit committee meetings are associated with reduced likelihood of (a) financial reporting problems, fraud, or restatements (McMullen & Raghunandan, 1996; Beasley et al., 2000; Abbott et al., 2004) and (b) suspicious auditor switches (Archambeault & DeZoort, 2001). We expect that audit committees that are more diligent will also be more likely to voluntarily purchase auditor attestation of management's internal control evaluation. This leads to the seventh hypothesis.

H₇. Audit committee meeting frequency is positively associated with auditor attestation of management's evaluation of internal control.

Auditor Type Hypothesis

The external auditor provides yet another monitoring mechanism, and there is a significant amount of literature that suggests that organizations respond to the need for greater monitoring by hiring a Big 4 auditor.¹⁰ DeFond and Francis (2005) noted that different monitoring mechanisms can be viewed as substitutes rather than complements. If the use of a Big 4 auditor and the voluntary purchase of auditor attestation services are substitute monitoring

mechanisms, then nonprofits that use a Big 4 auditor would be less likely to voluntarily purchase auditor attestation of management's evaluation of internal control. However, Big 4 audit partners are reluctant to be associated with a client not following best practices (Bryan-Low, 2003; Hindo & Sager, 2003). Such reluctance may be related to concerns about litigation risk or the adverse publicity surrounding governance failures. Hence, Big 4 auditors may insist on greater involvement in internal control, including attesting management's evaluation of internal control. Given the aforementioned competing arguments, we do not make a directional prediction for relationship between the type of auditor and auditor attestation of management's evaluation of internal control. This leads to the eighth hypothesis (in the null form).

H₈. Auditor type is not associated with auditor attestation of management's evaluation of internal control.

Entity Characteristics Hypothesis

Compared with other nonprofit organizations, hospitals and educational institutions have greater complexity in their governance structures and operations. For example, most hospitals are involved with the extensive and difficult regulations of Medicare and Medicaid programs. Similarly, educational institutions deal with extensive regulations related to most aspects of their accounting, funding, and operations. Thus, we expect these additional complexities will cause an increase in the demand for monitoring mechanisms. This leads to the ninth hypothesis.

H₉. Nonprofits that are hospitals or universities will be more likely to have auditor attestation of management's evaluation of internal control.

Almost all research related to accounting and auditing includes entity size as a control variable, and we also include nonprofit size as a variable in our analysis. Larger nonprofits are more complex and more likely to be the focus of attention from the media and the public, so larger organizations are more apt to incorporate stronger monitoring mechanisms. Conversely, larger organizations are also more likely to have better governance and monitoring mechanisms (Klein, 2002), suggesting that larger nonprofits would require less alternative monitoring mechanisms. Hence, we include size as a control variable in the analysis but do not make a directional prediction for organizational size.

MODEL

We use the following model to test our hypotheses:

$$\begin{aligned} \text{ATST} = & b_0 + b_1 * \text{GRANT} + b_2 * \text{SINGLAD} + b_3 * \text{RESFND} \\ & + b_4 * \text{BONDS} + b_5 * \text{ACIND} + b_6 * \text{ACFXP} \\ & + b_7 * \text{ACMEET} + b_8 * \text{BIG4} + b_9 * \text{HOSP TL} \\ & + b_{10} * \text{UNIV} + b_{11} * \text{SIZE} \end{aligned}$$

The variables are defined as follows: ATST equals 1 if the nonprofit voluntarily has the auditor issuing an attest report on management's evaluation of internal control, else 0; GRANT equals 1 if nonprofit reported government grants, else 0;¹¹ SINGLAD equals 1 if nonprofit subject to Single Audit, else 0;¹² RESFND equals ratio of temporarily restricted plus permanently restricted fund balance to total fund balance; BONDS equals 1 if nonprofit reported tax-exempt bond liabilities, else 0;¹³ ACIND equals 1 if all members of audit committee are independent, else 0; ACFXP equals proportion of audit committee members that are a CPA or other financial expert; ACMEET equals number of audit committee meetings per year; BIG4 equals 1 if audited by Big 4 accounting firm, else 0; HOSP TL equals 1 if nonprofit is a hospital, else 0; UNIV equals 1 if nonprofit is a university or college, else 0; and SIZE equals natural log of total revenues.¹⁴

DATA

We obtained the names, addresses, and related financial information for the 1,000 largest (based on total revenues) nonprofits from *GuideStar*, Inc. *GuideStar* collects data on more than 850,000 IRS-recognized nonprofits. *GuideStar* obtains their financial information from the IRS Forms 990/990EZ and the IRS Business Master Files. For these nonprofits, we mailed a questionnaire to their CFO. Of the 1,000 largest nonprofits, we received information from 144 chief financial officers (response rate of 14.4 percent).¹⁵ Some of the responses had missing data or deleted the control number used in the return envelope. After deleting these respondents, our sample has 126 usable responses. The usable sample includes 66 hospitals, accounting for 52 percent of the observations; universities and colleges constitute another 24 percent (30 of 126) of the sample. About 53 of the 126

organizations (42 percent) in our sample indicated that they requested auditor attestation of management's evaluation of internal control over financial reporting.¹⁶

We performed two tests to address nonresponse bias. First, we collected our data in two mailings (July and September of 2004). Thus, we added an early/late respondent variable to each model but this variable is insignificant in any of the models and has no impact on the results. Second, we also determined whether the sample of 126 respondents in this study differ in any dimension from the other 874 of the largest 1,000 nonprofits. We observed no significant difference between the groups for any of the variables included in this study ($p > 0.50$ in every instance). These results mitigate concerns about nonresponse bias.

RESULTS

As noted in Table 1, the mean (median) revenues are \$265 (\$185) million, while the mean (median) total assets of the sample are \$505 million (\$227 million). The data also indicate that the sample is skewed, so we use the natural log of revenues in our subsequent analyses. A little more than half the sample observations received government grants, while 61 percent of the sample reported tax-exempt bond liabilities. The mean (median) ratio of temporarily restricted plus permanently restricted fund balance to total fund balance is 0.14 (0.04). As can be expected from the nature of the sample (selected from the 1,000 largest nonprofit organizations), 82 percent of the sample nonprofits have a Big 4 auditor.

Only one of the correlations exceeds 0.40 (the correlation between RESFND and SINGLAD is 0.52), indicating that multicollinearity is not a problem. This is confirmed by an examination of variation inflation factors, none of which exceeds 2.9.

Table 2 provides the results from univariate tests (t -test for continuous variables and chi-square test for dichotomous variables) comparing the nonprofit organizations groups with and without an auditor attestation of management's evaluation of internal control. The tests suggest that organizations with auditor attestation have a higher proportion of their audit committee members as financial experts. In addition, organizations with auditor attestation are less likely to have a Big 4 auditor. However, since the relation between firm characteristics and auditor attestation of management's evaluation of internal control is multivariate in nature, these univariate results should be interpreted with caution.

Table 1. Descriptive Statistics for a Sample of 126 Nonprofit Organizations from Fiscal Year 2003.

Variable	Mean	Standard Deviation	25th Percentile	Median	75th Percentile
Revenues (\$M)	265	226	131	185	304
Assets (\$M)	505	908	140	227	527
SIZE	8.33	0.26	8.12	8.33	8.48
GRANT	0.54	0.50	0.00	1.00	1.00
SINGLAD	0.40	0.49	0.00	0.00	1.00
RESFND	0.14	0.19	0.00	0.04	0.20
BONDS	0.61	0.49	0.00	1.00	1.00
ACIND	0.59	0.49	0.00	1.00	1.00
ACFXP	0.53	0.35	0.25	0.50	0.80
ACMEET	4.15	3.22	2.00	4.00	4.00
BIG4	0.82	0.39	1.00	1.00	1.00
HOSPPL	0.52	0.50	0.00	1.00	1.00
UNIV	0.24	0.43	0.00	0.00	0.00

Notes: SIZE, Natural log of revenues; GRANT = 1 if nonprofit reported government grants, else 0; SINGLAD = 1 if nonprofit subject to single audit, else 0; RESFND = ratio of temporarily restricted plus permanently restricted funds to total fund balance; BONDS = 1 if nonprofit reported tax-exempt bond liabilities, else 0; ACIND = 1 if audit committee is fully independent and 0 otherwise; ACFXP = proportion of audit committee members that are a CPA or other financial expert; ACMEET = number of audit committee meetings per year; BIG4 = 1 if audited by Big 4 accounting firm, else 0; HOSPPL = 1 if nonprofit is a hospital, else 0; and UNIV = 1 if nonprofit is a university or college, else 0. The data are for the 2003 fiscal year of 126 nonprofits that responded to our questionnaire. Financial data are from the *GuideStar* database, while information about auditor and audit committees are from the survey responses.

Table 3 presents the results of the logistic regression model used to test our hypotheses. In columns three and four, we first present the results for the regression model that uses a dichotomous variable to measure audit committee independence (1 if all members are independent, else 0). The overall model is highly significant ($p < 0.01$), and the model's pseudo- R^2 is 16 percent. Consistent with expectations, there is a significant positive relation between the proportion of audit committee members that are a financial expert and auditor attestation of internal control, indicating that audit committees with a greater percentage of members with financial expertise are more likely to use auditor attestation. The sign on the RESFND variable (proportion of total assets that are in the form of restricted funds) is negative and significant, indicating that organizations that have a significant proportion of their assets in the form of restricted assets are less likely to use auditor attestation.

Table 2. Comparative Statistics of Nonprofits Receiving ($n = 53$) and Not Receiving ($n = 73$) Auditor Attestation of Management's Evaluation of Internal Control for Fiscal Year 2003.

Variable	Auditor Attestation of Management's Evaluation of Internal Control		<i>t</i> - or Chi-Square statistics (<i>p</i> -Value)
	Yes ($n = 53$)	No ($n = 73$)	
GRANT	0.47	0.59	1.70 (.19)
SINGLAD	0.42	0.36	0.45 (.50)
RESFND	0.10	0.16	1.59 (.12)
BONDS	0.64	0.59	0.36 (.55)
ACIND	0.58	0.60	0.02 (.89)
ACINDPER	0.85	0.90	1.25 (.21)
ACFXP	0.61	0.47	2.13 (.04)
ACMEET	4.26	4.07	0.33 (.74)
BIG4	0.74	0.88	4.08 (.04)
HOSPTEL	0.57	0.49	0.65 (.42)
UNIV	0.26	0.22	0.34 (.56)
SIZE	8.29	8.36	1.40 (.17)

Note: ACINDPER, Proportion of audit committee directors that are independent. *p*-values are two-tailed.

There is a negative association between the use of a Big 4 auditor and the voluntary purchase of auditor attestation; we interpret this evidence as indicating a substitution effect. That is, the use of a Big 4 auditor can itself be a signal on the part of management and provide added comfort to the audit committee, board, and outsiders; hence, the need for additional signaling through auditor attestation of internal control may not be necessary.¹⁷

As we expected, universities are more likely to use the external auditor to attest to management's evaluation of internal control. Universities deal with numerous governmental regulations, and hence have more to gain from using the auditor for expanded attest services.

DeFond and Francis (2005) questioned the requirement in SOX (and in other regulatory requirements, such as those relating to the SEC and stock exchanges) for the audit committee to have 100 percent independent directors. Given the earlier, we use an alternative measure for the audit committee independence construct. Specifically, we use the proportion of audit committee members that are independent. The last two columns of Table 3 provide the results when we use this alternative specification for audit committee independence. Although the significance of the audit committee independence variable is much lower than this alternative specification (while

Table 3. Logistic Regression Results for a Model of Nonprofit Organizations Voluntarily Receiving Auditor Attestation of Management's Evaluation of Internal Control in Fiscal Year 2003 ($n = 126$).

$$\text{Model: } ATST = b_0 + b_1 * \text{GRANT} + b_2 * \text{SINGLAD} + b_3 * \text{RESFND} \\ + b_4 * \text{BONDS} + b_5 * \text{ACIND} + b_6 * \text{ACFXP} + b_7 * \text{ACMEET} \\ + b_8 * \text{BIG4} + b_9 * \text{HOSP TL} + b_{10} * \text{UNIV} + b_{11} * \text{SIZE}$$

Label	Predicted Relation	Model 1		Model 2	
		Estimate	p -value ^a	Estimate	p -value ^a
Intercept	?	7.96	.30	8.23	.29
GRANT	+	-0.75	.84	-0.53	.88
SINGLAD	+	0.68	.32	0.70	.36
RESFND	?	-3.32	.01	-4.50	.01
BONDS	+	0.76	.12	0.77	.12
ACIND	+	0.56	.26		
ACINDPER	+			0.07	.94
ACFXP	+	1.51	.04	1.43	.04
ACMEET	+	0.01	.86	0.01	.88
BIG4	?	-1.17	.02	-1.46	.02
HOSP TL	+	1.00	.10	0.85	.16
UNIV	+	1.58	.06	1.52	.06
SIZE	?	-0.97	.25	-1.06	.26
Model chi-square		62.34		62.65	
p -value		<0.01		<0.01	
Pseudo R^2		0.16		0.17	

Note: $ATST = 1$ if the nonprofit voluntarily has the auditor issuing an attest report on management's evaluation of internal control, else 0.

^a p -Values are not transformed because the distribution for a chi-square test is asymmetric (versus the symmetric bell-shape for t -statistics).

continuing to remain statistically insignificant), the results related to the other variables remain substantively similar to those presented earlier.

SUMMARY AND CONCLUSIONS

Section 404 of the Sarbanes–Oxley Act mandates internal control reporting by SEC registrants and auditor attestation of such reports. This requirement is controversial, and there are efforts now to repeal or modify the internal control related requirements of SOX. Nevertheless, given recent

well-publicized governance failures and other abuses at some large nonprofits, legislators are considering extending similar requirements to the nonprofit sector (U.S. Senate, 2004; Higgins, 2005; Wells, 2005).

Some nonprofits voluntarily include a management report on internal control and auditor attestation of this report. Given that recent controversies surrounding the *mandatory* internal control reporting requirements of SOX, we examine factors associated with the *voluntary* use of auditor attestation of management's internal control evaluation by nonprofit organizations. Our data are based on survey responses from 126 chief financial officers and financial data from the *Guidestar* database. For the nonprofits in our sample, we find that 42 percent indicated that they requested auditor attestation of management's evaluation of internal control over financial reporting.

We use the resource dependency framework, governance characteristics, auditor type, and entity characteristics to develop our hypotheses related to nonprofits' voluntary use of auditor attestation of management's report on internal control. Our multivariate results suggest that the proportion of audit committee members that are financial experts and the type of nonprofit are positively associated with a nonprofit's voluntary use of auditor attestation of management's report on internal control. The composition of the fund balance and the use of a Big 4 auditor are negatively associated with the inclusion of auditor attestation of management's report on internal control. Thus, the voluntary use of auditor attestation over management's evaluation of internal control by nonprofit organizations varies depending on resource dependency and other characteristics of the organization.

Our findings support the position that internal control reporting can be useful as a voluntary signaling mechanism, and provide useful empirical evidence in the context of the current debate related to the mandatory internal control requirements under SOX as well as similar legislation under consideration for nonprofits. Our results also add to the growing stream of research related to voluntary disclosures by organizations.

The findings of this chapter are subject to certain limitations. As with most survey-based studies, our results may be impacted by nonresponse bias. However, we did not find any difference between early and late respondents and did not observe any significant differences between the respondents and nonrespondents for any of the variables examined in this study. Further, the results of this study are based on a survey of 126 of the 1,000 largest nonprofits in the United States; our findings may not extend to smaller nonprofits, or nonprofits in other countries. Future research should

examine if similar results are obtained for smaller nonprofits or for nonprofits in other countries.

NOTES

1. Accelerated filers, defined as a U.S. company with equity market capitalization over \$75 million and has filed at least one annual report with the SEC, must comply with Section 404 for the first fiscal year ending on or after November 15, 2004. All others must comply with Section 404 for its first fiscal year ending on or after July 15, 2007 (SEC, 2004a, 2005c, 2005d).

2. Nonprofit organizations account for (a) 5.8 percent of all organizations in the country, (b) 6.7 percent of national income, and (c) 7.1 percent of the workforce (Independent Sector, 2002). The data are for 1998. Comparable data for later years are not available in the 2002 (latest) version of the *Nonprofit Almanac*.

3. Vermeer, Raghunandan, and Forgione (2006) examine the composition of nonprofit audit committees and factors associated with their composition.

4. Beginning in 1993, insured depository institutions with \$500 million or more in total assets are required by the FDIC to report on internal control over financial reporting and to obtain auditor attestation of those reports.

5. The two exceptions are the provisions relating to document destruction and whistle-blower protection.

6. See, for example, Lang and Lundholm (1993), Frankel, McNichols, and Wilson (1995), Botosan (1997), and Healy, Hutton, and Palepu (1999).

7. The requirements of Circular A-133 are applicable only for federal grants. In contrast, our data include grants from federal, state and local governments. The threshold increases to \$500,000 for fiscal years after December 31, 2003.

8. It is important to recognize that reporting on internal control under the Single Audit Act does not include issuing an opinion on management's evaluation of internal controls (OMB, 1997).

9. Donors may also be concerned with nonprofits that fail to use their donated assets and accumulate the funds (Chang & Tuckman, 1990).

10. See, for example, Francis and Wilson (1988) and DeFond (1992). We use the phrase Big 4 for expositional convenience, since evidence from prior research primarily relates to the period when the firms were known as the Big 8.

11. From discussions with certain nonprofits, we include a dichotomous measure since the amount of grants can differ significantly from year to year. Thus, using a continuous measure of grants would be less appropriate if the nonprofit had either received (or, expected to receive) significant governmental grants in the recent past (near future). As expected, the results with this alternative measure (i.e., continuous measure for the grant variable) were less significant.

12. SNGLAD is a subset of the GRANT variable and we obtain substantially similar results if either of these variables is omitted.

13. We get substantively similar results if we use the ratio of bonds outstanding to total assets.

14. Results related to our hypotheses are similar if we use log of total assets as the measure of size.

15. DeZoort et al. (2003) mentioned the problems in obtaining responses from high-ranking corporate officials, and suggested that response rates around 15 percent are reasonable.

16. It is possible that some nonprofits have a management report on internal control without having auditor attestation of such a report. However, the usefulness of such unattested reports is questionable. In our questionnaire, we did not ask if the organization had a management report on internal control without auditor attestation.

17. Such a substitution effect is more plausible in the relatively less-litigious environment of nonprofits. In the context of for-profit public companies, the supply side incentives related to the auditor may be higher leading to a positive association between the use of a Big 4 auditor and auditor attestation of internal control.

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HOSPITAL PERFORMANCE SURROUNDING THE BOND RATING REVISION EVENT

Kreag Danvers

ABSTRACT

I investigate managerial responses to hospital bond rating revisions by scrutinizing the consistency of performance measures across pre- to post-revision intervals. Multinomial logistic regression results for a national sample of nonprofit hospitals reveal that downgraded hospital managers initiate preemptive profitability improvements, and post hoc liquidity increases, to signal short-term credit stability. However, managers do not favorably change other measures, such as those relating to efficiency and capacity costs, to support long-term solvency. Policy implications arise from a managerial focus on short-term responses, which may not avert future increases in hospitals' cost of capital, or decreases in accessibility of debt financing. Upgraded hospitals, however, report sharply decreasing post-revision profitability. These findings caution rating analysts and bondholders to closely monitor pre- to post-revision performance of rating upgrades, which may not reflect analyst performance expectations.

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1. INTRODUCTION

I examine changes in hospital performance across pre- to post-revision intervals and document managerial responses to the bond rating revision event. Pre-revision analyses provide insight regarding factors that are differentially associated with the likelihood of upward and downward credit revisions by rating analysts, as well as a context for examining post-revision changes. More significantly, I investigate organizational responses to the revision event by examining the extent to which managers change financial and operating characteristics in the periods proximate to the event.

Restricted access to equity financing motivates nonprofit hospitals to issue rated revenue bonds. A revenue bond is a particular type of municipal bond that nonprofit hospitals issue for project financing, whereby the bond issuer pledges to bondholders the revenues generated by the project. Since nonprofit hospitals comprise approximately 85 percent of the 5,000 hospitals in the United States, they represent a significant industry segment (*Healthcare Financial Management Association, 2001*). In fact, *Pallarito (1999)* recently noted that the nonprofit health care sector issued a record \$32.6 billion in tax-exempt bonds during 1998.

Within an unstable health care environment the cost and availability of capital are important strategic considerations for hospital managers (*Beith & Goldreich, 2000*). Indeed, *Wheeler, Smith, Rivenson, and Reiter (2000)* found in a series of interviews that almost all nonprofit hospital chief financial officers consider a high bond rating crucial to their capital structure policies. Moreover, tax subsidies make revenue bonds the least costly source of capital for these hospitals (*Payne, 1995*). Thus, relative to for-profit organizations, access to debt financing is more critical to nonprofit hospitals, which causes the industry to be highly sensitive to initial bond ratings and subsequent revisions.

Some consequences of bond rating revisions include changes to hospitals' cost of capital and their ability to obtain debt financing in capital markets. Thus a good credit rating often represents the difference between obtaining lower-cost financing in the public capital market, more expensive private-placement financing, or possibly no debt financing at all (*Picker, 1991*). In terms of economic importance, the cost of a downgrade for a typical revenue bond issuer may include millions of dollars in extra interest expense as well as higher debt-service reserve requirements (*Palm, 1988*).

To illustrate, a 30-year, \$30 million bond issue with an "A" rating will typically yield about 75 basis points less than a similar one with a "BBB-" rating, which costs almost \$6 million more over the bond amortization.

Applying this 75 basis point differential to the average long-term debt outstanding for this study's sample (long-term debt averages \$49 and \$87 million for downgrades and upgrades, respectively), the costs (benefits) for a downgraded (upgraded) hospital ranges from \$367,500 to \$652,500 annually.

Since many nonprofit hospitals achieve fairly low profitability levels, a differential interest cost of this magnitude could mean the difference between profit and loss. In addition, debt-service reserve funds that often equal 1 year of debt service would be greater for a lower-rated bond, and portfolio managers may be prohibited from holding speculative grade bonds (Palm, 1988).

In addition, credit ratings are used as an executive labor market signals about management quality and can affect compensation, both of which strengthen the incentives for managers to secure better ratings. For example, Williams (2005) discussed how a hospital administrator's leadership was critical to Littleton Regional Hospital's (New Hampshire) financial recovery and credit rating. Wyatt-Johnson and Bennett (2004) also observed that managerial compensation within nonprofit health systems is converging to the for-profit sector, with 90 percent of major medical center CEOs receiving some form of incentive compensation. Such factors provide managers with strong incentives to respond to rating revisions.

While managerial responses to the revision event have not been examined for either corporate or nonprofit entities, the unique nonprofit hospital sector presents an optimal research setting to examine this issue. Policy implications relate to the ability of nonprofit hospitals to maintain financial stability and capital market access, and that creditworthiness should be evaluated across a broad time frame – at least 3 years or more before and after a rating revision. My findings also suggest that implementing mandatory nonfinancial performance measure reporting, such as for hospital quality, would enhance performance evaluation, thus improving bond market efficiency.

I examine managerial responses by scrutinizing the consistency of financial and nonfinancial performance measures across pre- to post-revision intervals. My analysis considers the interactions of analyst expectations, rating revision actions as well as responses to such actions. Managers of downgraded hospitals are expected to change financial and operating characteristics in response to, or in anticipation of, downward rating revisions to signal credit stability, and to preserve compensation levels. Likely organizational responses include improvements to controllable performance dimensions, such as profitability and liquidity. For example,

Greater Southeast Healthcare System in Washington, DC, announced a lay-off of 250 employees to reduce operating costs in the same week that a bond rating agency lowered its rating (Gardner, 1998).

Conversely, opportunistic managers are likely to seek rating upgrades to obtain a lower cost of capital to increase facility size and enhance their compensation. In this case, profitability performance for upgraded hospitals could deteriorate across subperiods as pre-upgrade profitability is maximized. Thus the revision event motivates managers to change performance measures to achieve low-cost financing, maintain capital market access, and increase compensation levels.

Multinomial logistic regression results for a national sample of nonprofit hospitals are consistent with these expectations. Specifically, results indicate favorable changes to profitability and liquidity in downgraded hospitals, but unfavorable profitability changes in upgraded hospitals, relative to no-change control groups. For downgraded hospitals, decreases in staffing also suggest quality deterioration that could have negative long-term financial solvency implications. Observable declines in profitability for upgraded hospitals caution rating analysts to closely monitor the subsequent performance of upgrades to ensure consistency with expectations. These results show that managers can respond either in anticipation of, or in response to, this important nonregulatory event.

The remaining sections are organized as follows. Section 2 presents prior research and motivation. Section 3 describes the research method, revision process, hypotheses, and sample selection. Section 4 presents models and tests, and Section 5 discusses results along with a sensitivity analysis. Section 6 summarizes the findings and provides concluding remarks.

2. PRIOR RESEARCH AND MOTIVATION

2.1. Bond Ratings and Accounting Information

Studies examine the relationships of bond rating changes to either accounting information or market reactions in municipal and corporate settings (e.g., Raman, 1981; Copeland & Ingram, 1982; Ingram, Raman, & Wilson, 1989; Green, 1990). McCue, Renn, and Pillari (1990) studied hospital bond rating changes and found that pre-downgrade utilization and liquidity are associated with different types of downgrades. In addition, Danvers (2003) examined rating agency's explanations that accompany changes in credit

ratings for nonprofit hospitals and finds significant differences in agency-cited performance dimensions, such as profitability, liquidity, service-mix, capital structure, and market share, across upward and downward revisions.

In their study of hospital performance, Zeller, Stanko, and Cleverley (1996) identified seven key financial performance factors, which include: (1) profitability, (2) fixed asset efficiency, (3) capital structure, (4) fixed asset age, (5) working capital efficiency, (6) liquidity, and (7) debt coverage. Watkins' extension of Zeller et al. (1996) focused on certain nonfinancial measures (e.g., utilization and capital efficiency) that are not routinely reported in financial statements but have incremental value in explaining bond rating levels. Such findings are consistent with other studies that suggest hospital financial disclosures are deficient and call for improved reporting of nonfinancial information.

Deficiencies in financial reporting within the nonprofit hospital sector mostly focus on untimely reporting, inadequate disclosure, and not reporting relevant nonfinancial items, rather than a lack of financial reporting, per se. Indeed, Pallarito (1998) stated that hospitals are very reluctant to voluntarily disclose information, notwithstanding incentives for greater disclosure.

Moreover, Sengupta (1998) found that corporate firms with higher-quality financial disclosure experience lower effective bond interest costs, which is accentuated with increasing uncertainty about the firm's prospects. Since nonprofit hospitals operate with a high degree of uncertainty due to ongoing changes in third-party payment mechanisms, the cost of external financing for nonprofit hospitals might be mitigated through more complete financial disclosure, particularly with regard to relevant, nonfinancial operating information.

2.2. Managerial Responses to External Events

Relevant research also examines hospital responses to governmental events such as state or federal regulatory changes (e.g., Soderstrom, 1993; Barniv, Danvers, & Healy, 2000; Lynch, 2003). These studies generally find that hospital managers respond to external events through modifying operating and financial characteristics. Although a bond rating revision is nonregulatory in nature, it is nonetheless an important external event that can impose significant costs on hospitals and induce hospital responses. Such responses are expected to be most clearly detectable for hospitals with credit rating downgrades.

2.2.1. Benchmarking and Rating Downgrades

Relatively few articles relate to management's sensitivity to voluntary or involuntary benchmarking. Most notably, [Evans, Hwang, Nagarajan, and Shastri \(1997\)](#) document responses by Pennsylvania hospitals to involuntary benchmarking. They find that state-mandated hospital disclosures of performance information induce poorly performing hospitals to improve within 2 years subsequent to the disclosure requirement. In an analogous manner, rating agencies effectively create a benchmarking scheme when they evaluate the relative credit risk of bond issues and render revision decisions. Indeed, [Standard & Poor's *Creditweek – Public Finance Criteria* \(1997\)](#) emphasized that management factors are a key area wherein the agency assesses the team's ability to effectively monitor and control resources through effective budgeting, cash management, and credit policies.

Ratings and related revisions thus represent a type of voluntary benchmarking sought by the bond issuer and organizational responses should be expected. For example, [Wallace \(1986\)](#) discovered that decisions by municipalities to initially contract for an audit reflect the unit leader's desire to improve the bond rating. In addition, [Fisher and Fisher \(1993\)](#) examine the association between auditor switching and bond rating changes and suggest that management is sensitive to changes in bond ratings.

Through the rating benchmarking scheme, credit agencies perform a monitoring function, which spurs management initiatives to enhance operational effectiveness ([Wakeman, 1990](#)). In the case of rating downgrades, organizations can signal credit stability by improving closely monitored performance dimensions, such as profitability and liquidity. Finally, hospital managers may decrease length-of-stay, which [Evans, Hwang, and Nagarajan \(2001\)](#) identified as a significant determinant of hospital costs, to convey cost-effective behavior.

2.3. Opportunism and Rating Upgrades

Conversely, managers may actively seek rating upgrades to reduce the cost of capital and ensure financing for future capital projects that can positively affect managerial recognition and compensation. Managers are also motivated to attain specific earnings thresholds, such as generating positive profits, sustaining recent performance, and meeting analyst expectations because financial statement users, including rating agencies, promote the use of performance thresholds ([Degeorge, Patel, & Zeckhauser, 1999](#)). Such motivations may also induce earnings management behavior by managers.

Both bond rating upgrades and higher stock prices in for-profit corporations effectively reduce the cost of external financing and create incentives for managers to be opportunistic. For example, [Erickson and Wang \(1999\)](#) found that acquiring firms overstate earnings immediately before a stock swap announcement to reduce the cost of buying a target firm. In addition, [Loughran and Ritter \(1995\)](#) found that market returns for initial public offerings and seasoned equity offerings decline subsequent to the offering event.

[Louis \(2004\)](#) explained acquiring firms' post-merger underperformance through identifying post-merger reversals, within 1 year after merger announcement, of pre-merger earnings management. Finally, [Jain and Kini \(1994\)](#) observed significant declines in profitability, along with increases in capital expenditures that are likely a result of issuers' investments of IPO proceeds, during post-initial-public-offering (post-IPO) subperiods. Possible explanations for post-IPO profitability deterioration include managerial incentives to invest in nonvalue maximizing projects and increase perquisite consumption, as well as managerial window-dressing of financial statements before going public. Similarly, [Loughran and Ritter \(1997\)](#) found that return on assets for firms conducting seasoned equity offerings (SEOs) peaks at the time of offering, but decreases by one-half within 4 years of the offering, relative to a matched control group of nonissuers.

2.4. Managerial Compensation Arrangements

Through maintaining, or improving, access to external financing, hospital managers can increase their organization's size, which is positively associated with management compensation ([Pink & Leatt, 1991](#)). Moreover, [Eldenburg and Krishnan \(2003\)](#) found a positive relationship between hospital profitability and CEO compensation, which is consistent with [Brickley and Van Horn \(2002\)](#) who identified significant associations between profitability and CEO compensation, as well as turnover, in nonprofit hospitals.

Such linkages between profitability performance and managerial compensation also create incentives to manage earnings through the use of discretionary accruals ([Eldenburg & Vines, 2004](#)). Managers may seek rating upgrades through pre-upgrade earnings management, or window-dressing. Indeed, [Robbins, Turpin, and Polinsky \(1993\)](#) found that the existence of management compensation plans in nonprofit hospitals is positively associated with income-increasing accounting choices. Such managerial actions to manipulate earnings to achieve a rating upgrade, or misallocate resources by consuming perquisites, would result in post-upgrade performance declines. Indeed,

Forgione (1999) indicated that external monitoring provides strong incentives to nonprofit managers to behave similar to for-profit managers.

In sum, prior research examines corporate and municipal rating changes, hospital financial disclosure, and responses to state or federal government regulations, including involuntary benchmarking schemes. Further studies identify relatively strong pre-IPO and pre-SEO operating performance, but weaker post-transaction performance. In addition, managers in both nonprofit and for-profit organizations are similarly concerned with minimizing the cost of capital and managing financial performance, particularly profitability, to maximize compensation.

I examine the extent to which managers change financial and nonfinancial characteristics during periods surrounding bond rating revisions. Responses to this important event should be most evident within the nonprofit hospital industry, where bond issuance is the primary source of external financing. The significant implications associated with revision actions for nonprofit organizations are relevant to creditors, bondholders, rating agencies, managers, policymakers, and scholars.

3. RESEARCH METHOD

3.1. Rating Revision Process

3.1.1. Standard and Poor's Rating Surveillance

Standard and Poor (S&P) performs two levels of ratings review within its surveillance process that could lead to a rating action. First, S&P conducts an annual “financial” review for all ratings, which primarily relies upon audited financial statements and supplemental operational information (Standard & Poor's *Creditweek – Public Finance Criteria*, 1997). While the first-level, financial review is cursory and focuses on “red flag” items, it may be sufficient for S&P to affirm a rating.

Discussions with an S&P health care analyst reveal a limited number of “red flag” variables, which include operating income, cash levels, admissions (volume), and organizational changes. The rating agency's request for supplemental information also implies that current financial statement disclosure is inadequate, as indicated in Section 2. For example, information items not routinely disclosed in financial statements include nonfinancial accounting information such as productivity measures (e.g., FTEs per adjusted occupied bed), utilization statistics, payer-mix information, case-mix index, and significant operational changes.

Although primary market analysts participate in surveillance activities, secondary-market analysts perform the majority of surveillance reviews. A fairly small number of rating analysts cover a wide range of bond ratings as there are approximately 24 analysts in the secondary market surveillance section who monitor more than 13,000 municipal issues in the Public Finance Department. This equates to an average surveillance of more than 500 issues per analyst (Standard & Poor's *Creditweek – Viewpoint on Secondary Markets*, 1996).

Indications of credit risk changes revealed during the financial review may trigger a second-level, “comprehensive” review through which S&P conducts further inquiry to determine whether a rating revision is appropriate. The comprehensive review may also occur periodically based on industry sector and bond rating level. For instance, health care issues that are rated A+ or higher are likely to receive a comprehensive review every 3 years, while for securities rated BBB or lower a comprehensive review is supposed to occur annually (Standard & Poor's *Creditweek – Public Finance Criteria*, 1997).

Beyond the information used in a financial review, a comprehensive review includes additional financial analyses, evaluation of and communication with management, and consideration of economic factors. Additionally, the review process reflects other variables such as market interest and visibility along with sector trends, debt amount, and material events (Standard & Poor's *Creditweek – Public Finance Criteria*, 1997). Possible outcomes of the comprehensive review include affirmation of the current rating, a change in rating, or placement of the rated debt on the S&P Creditwatch listing. The issuer is also permitted to undertake an appeal before revision; however, this appeal process is not further addressed here.

The annual review process may result in approximately 5 percent of all municipal securities receiving a rating revision in any given year (Standard & Poor's *Creditweek – Public Finance Criteria*, 1997). This estimate relates to S&P rating changes during the 5-year period 1991–1996. A typical timetable for the annual review process is graphically depicted in Fig. 1. As shown, there is an initial lag of approximately 3–4 months following fiscal year-end for the issuer's independent audit to be completed. An additional month lapses for the rating agency to receive audited financial and other information. Finally, a few more weeks are required to perform a first-level and, if necessary, a second-level review before affirming or revising the rating.

In sum, an analyst's review is driven by the annual reporting cycle and is completed somewhere between 22 and 28 weeks following fiscal year-end.

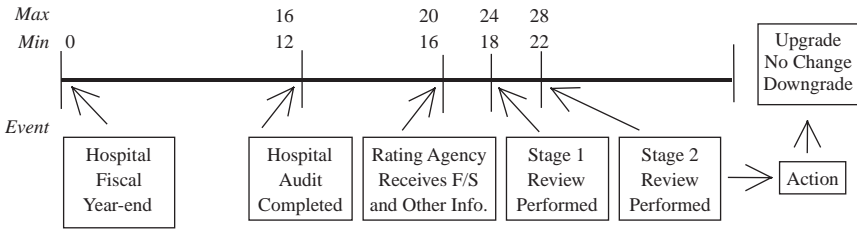


Fig. 1. Review Process and Revision Timetable (In Weeks).

Note that SEC secondary-market disclosures, new debt issues, and scheduled comprehensive reviews can induce rating revisions outside the normal reporting cycle as well. Analysis of the time lag between hospital fiscal year-end and rating revision announcements for this study’s sample (excluding revisions coinciding with new issues or issuer default) indicates a mean (median) of approximately 26.9 (27.9) weeks.

If warranted, an upgrade decision would be rendered upon completion of the second-level review. Although the financial review is designed to detect annual changes in performance, hospital managers could petition S&P to conduct an interim comprehensive review for upgrading consideration. Regardless, hospitals with favorable financial performance should be identified via the financial review for upgrading on an annual basis. Therefore, S&P’s ratings surveillance process mitigates potential self-selection bias within the upward-revision subgroup, particularly given that annual performance data are used in this study.

While hospitals seeking to be upgraded may lobby the rating agency to facilitate a favorable rating action, hospitals likely to be downgraded would attempt to forestall adverse rating actions. In addition to the annual review, reputation incentives and professed independence of rating agencies suggest that efforts in either direction should have limited influence on the timing of a rating decision relative to the periodic review process. For these reasons, self-selection bias is not deemed to be a concern for either subgroup.

3.2. Hypotheses

3.2.1. Downgrade Hypothesis

Since hospital managers derive utility in the form of prestige, increased compensation, and income security, along with other perquisites associated with a larger institution, they have incentives to increase facility size

(Cohodes & Kinkead, 1984; Pink & Leatt, 1991). At a minimum, nonprofit hospital managers are expected to pursue actions consistent with a “quantity–quality maximization” decision-making model (Cohodes & Kinkead, 1984). Quantity–quality maximization is a special case of the general utility-maximizing model and assumes that hospital management maximizes and balances the quantity and quality of services provided. Inadequate financial reporting within the nonprofit hospital sector could also facilitate managerial efforts to maximize perquisites (e.g., Mensah & Chiang, 1996).

Given that facility investments are largely financed through tax-exempt bonds, it is critical for hospitals to maintain low-cost access to bond markets. In addition, operating self-sufficiency requires nonprofit hospitals to achieve minimum levels of economic performance, including the ability to meet scheduled debt service payments. Clearly, obtaining a higher credit rating, or not sustaining a credit downgrade, are key financial objectives for hospital managers (Beith & Goldreich, 2000).

In the case of hospitals with weakening financial performance that are at risk of being downgraded, managers may attempt to signal credit stability through influencing short-term controllable factors. In particular, profitability is a key income statement indicator for nonprofit hospitals and is closely monitored by bond rating agencies (*Standard & Poor’s Creditweek – Municipal Finance Criteria*, 1995). Key financial measures that S&P routinely monitors include excess margin, days cash on hand, days in accounts receivable, and debt to capitalization (*Standard & Poor’s Creditweek – Municipal Finance Criteria*, 1995).

Although a rating downgrade is not as severe as debt covenant violation or bankruptcy, similar responses may occur. For example, Defond and Jiambalvo (1994) found abnormal accruals for firms that violated debt covenants in the year before violation, and Sweeney (1994) indicated that managers of firms approaching default respond with income-increasing, accounting changes. In addition, Rosner (2003) found that when bankrupt firms that do not appear to be distressed approach bankruptcy, they report significantly greater income-increasing accruals relative to control firms during nongoing-concern years. Burgstahler and Eames (2003) suggested that analysts cannot consistently identify firms that engage in earnings management to avoid small losses. Within the health care industry, Mensah, Considine, and Oakes (1994) examined accounting conservatism and earnings management by HMOs in the accrual of incurred, but not reported, expenses. They found that such expenses were systematically understated by financially weaker HMOs in an effort to minimize regulatory costs.

Profitability measures are also associated with managerial compensation within nonprofit hospitals (Brickley & Van Horn, 2002; Eldenburg & Krishnan, 2003). Since managers can readily influence profitability through reducing discretionary expenses and implementing income-increasing accounting accruals and methods, changes to profitability are expected to be the primary performance measure influenced by managerial actions. Thus, the most immediate management reaction to pending or actual rating revisions may be to make income-increasing accounting choices.

In addition, S&P scrutinizes days in accounts receivable, and a related measure, days cash on hand. Since reduced days in accounts receivable can positively impact cash levels, an important liquidity response should be more readily revealed through changes in receivables, which could precede changes in cash levels. Moreover, decreases to accounts receivable suggests relatively more efficient cash conversion and effective managerial control. Thus, although pre-revision changes in net accounts receivable should be greater for downgrades, post-downgrade managerial distress responses are expected to accelerate receivables conversion and improve liquidity. For other financial dimensions, such as financial leverage, facility age, and capital expenditures, managers are not expected to initiate changes within one or two fiscal periods. Relatively higher long-term debt to capitalization and facility age, along with lower turnover and capital expenditure levels are expected across both subperiods for downgrades.

In sum, potential consequences of a rating downgrade include a higher cost of capital and debt service costs, diminished ability to obtain additional debt financing, and reduced managerial compensation. Given such punitive implications, profitability and liquidity improvements are expected for the downgrade subgroup as managers attempt to influence the probability distribution of future rating revisions by signaling credit stability to rating analysts and creditors. This first “downgrade distress” hypothesis is formally stated as follows:

H1. Managers of downgraded hospitals signal credit stability by reversing pre-revision profitability and liquidity performance.

As managers strive to avoid downgrades they can undertake such actions either in expectation of, or in response to, the revision such that responses can reasonably be expected in advance of the actual downgrade action. A response in advance of an actual rating revision announcement is consistent with the S&P rating surveillance process, which includes prior notification of review to the issuer along with follow-up reviews and analyses by rating analysts.

This process suggests that hospital managers have opportunities to respond before a downgrade is actually issued. However, since the primary purpose of notification is to permit an appeal by presenting new, or mitigating, information to be considered by the agency, prior notification of possible downgrade typically occurs too late for managers of downgraded hospitals to take any meaningful action in managing appropriate decision variables. Hospitals that actually experience a downgrade would likely have been unsuccessful in managing decision variables in the prior period. Thus H1 examines whether hospital managers improve either real (value-added) or reported (accounting-based) performance across the pre- to post-revision subperiods.

3.2.2. Upgrade Hypothesis

For debt issues, bond rating upgrades, similar to higher stock prices, effectively reduce the cost of external financing. Consistent with the behavior of for-profit firms that seek to reduce their cost of equity capital (e.g., Jain & Kini, 1994; Erickson & Wang, 1999; Loughran & Ritter, 1997) nonprofit managers could initiate pre-upgrade actions to secure higher bond ratings to reduce the cost of debt capital. Since bond rating surveillance occurs on an annual basis, and organizations can petition for a comprehensive review to be upgraded at any time, managers exercise some degree of control over the timing of both bond rating revisions and stock issuance.

Bond rating upgrades facilitate hospital expansion opportunities and improve profitability through reducing interest costs, both of which can positively impact management compensation (Pink & Leatt, 1991; Eldenburg & Krishnan, 2003). Thus, the analysis for upgrades focuses on profitability, which is the performance dimension most readily influenced by opportunistic actions such as the use of discretionary accruals to manage earnings (Leone & Van Horn, 2003; Eldenburg & Vines, 2004).

When managers successfully improve pre-upgrade profitability through short-term, earnings management actions, post-revision profitability will necessarily deteriorate. This expectation is similar to acquiring firms' post-merger underperformance within 1 year after merger announcement (Louis, 2004). Other performance measures are not as readily managed in the short term and not as directly tied to managerial compensation (e.g., days cash on hand, long-term debt to capitalization, and facility age).

Managers cannot consistently increase profitability over time, as the hospital will tend toward a profitability plateau and show statistical insignificance with respect to the revision event. However, decreases, or negative changes, to profitability will show negative statistical associations

in subsequent periods. To the extent that managers improve pre-upgrade profitability through undertaking short-term earnings management actions, post-upgrade profitability will necessarily deteriorate, which will reflect a positive (negative) association of return on assets to the revision event in the pre-revision (post-revision) subperiod. This “managerial opportunism” hypothesis for upgrades is formally stated as follows:

H2. Managers of upgraded hospitals increase pre-revision profitability performance, but show post-revision profitability decreases.

Thus H2 examines whether hospital managers increase reported pre-revision performance with post-revision deterioration.

3.3. Sample Selection

3.3.1. Revision Sample

Rating revision announcements are compiled from Standard & Poor’s *Creditweek* (1991–1995) for all rated nonprofit hospitals in the United States from 1991 to 1995. The data source for hospital-specific performance measures is the Merritt Research Healthcare Database (2001), a credit and investment analysis database. The database is a product of Merritt Research Services, LLC, Cedar Rapids, Iowa, and contains annual audited financial statement and operational information for more than 1,600 hospitals and systems from all 50 states and the District of Columbia. Rating actions pertain to fixed-rate, tax-exempt, hospital revenue bonds as reported in Standard & Poor’s *CreditWeek – Municipal Bond Ratings: Revisions*.

However, certain types of revisions are excluded from the sample since they do not reflect changes in the underlying credit of the issuer. For example, rating changes for credit-enhanced issues represent either addition or deletion of credit enhancement, or changes in the rating of the credit facility backing the issue, and are thus excluded. Panel A of Table 1 shows that from an initial 260 revision announcements identified during the 5-year period, 222 are matched to hospitals in the database by name, location, and bond issue. This sample represents approximately 30 percent of the hospitals in the Merritt database with nonenhanced ratings.

Ownership and service types may influence results where, for instance, limited administrative funding for district hospitals can lower performance due to difficulty in recruiting and retaining top management. Service type and control codes from the AHA (1996) *Guide to the Health-Care Field* are used to further exclude 10 proprietary, governmental, or special-service type

Table 1. Sample Selection Criteria.

Panel A: Revision Observations ^a				
Total revisions reported in S&P Creditweek				260
Revisions unmatched to hospitals in Merritt database				(38)
Net revisions matched to hospitals in Merritt database				222
Revisions with nonconforming AHA control or service codes				(10)
Revisions not matched to no-change control hospitals				(13)
Net revisions for nonprofit, general service, acute care hospitals before missing data				199
Revision observations with missing data				(92)
Net revisions with complete data for primary logit model				107
Matched control observations				107
Total observations available for analysis				214
Panel B: Distribution of Net Revision and Control Observations by Year				
Year	Upgrades	Matched control group ^b	Downgrades	Matched control group ^b
1991	3	3	25	25
1992	10	10	14	14
1993	12	12	13	13
1994	3	3	6	6
1995	11	11	10	10
Total	39	39	68	68

^aHospital-specific credit changes for the period 1991–1995.

^bNo revisions are observable for the S&P-rated no-change control group from 1991 to 1995. These hospitals are individually matched to each of the revision observations using the following control dimensions: time (year); ownership type (AHA control code); service classification (AHA service code); urban/rural location (Metropolitan statistical area); teaching status (teaching or nonteaching); bond rating level before change; and size (total assets in the year of match).

hospitals. In addition, 13 revision observations are not matched to the control group of no-change hospitals, as discussed later.

Therefore, the revision sample is limited to nonprofit, general-service, acute-care hospitals for which there is a matched no-change observation and data are available in the Merritt database. Since I examine hospital-specific performance measure changes over a 5-year window (2 years pre- and 2 years post-revision, plus the year of revision), missing data across time and performance measures cause the elimination of 92 additional observations, which results in 107 net revisions available for multivariate analyses.

Panel B of Table 1 shows that downgrades (68) substantially outnumber upgrades (39), which closely correspond to the proportions for the initial 260 announced revisions. Although financial reviews are performed annually, no rating changes are observed for a total of 504 S&P-rated hospitals over the sample period. After missing data items and screening for nonconforming service and control types, 274 no-change hospitals are available for matching to revision observations.

3.3.2. Control Sample

Since the health care industry is in constant flux, many factors can affect hospital performance. In addition, I use interrupted time series tests to examine managerial responses, which necessitates a control sample to rule out competing explanations, such as mean reversion. Thus it is necessary to incorporate appropriate controls to reflect this environment. Implementing controls for time is critical given ongoing industry changes.

Controls for location are also needed since rural hospital performance tends to differ relative to that of urban hospitals. Moreover, the mission of teaching hospitals, which includes a physician education component, is broader than for those designated as nonteaching. Bond rating levels before the revision event are used to control for differences in historical performance. Finally, while large, urban teaching organizations may have a large asset base, they often have high indigent populations and weak financial conditions as well. These factors increase the importance of including a size-control variable.

Thus for each revision observation, a no-change control hospital is closely matched on the following dimensions: year, ownership type (AHA control code), service classification (AHA service code), location (Metropolitan Statistical Area), teaching status, bond rating level before change, and size (total assets). Owing to missing performance measure data across regression models, revision observations are rematched, as necessary, for each of the models that include a different nonfinancial measure.

The sizable no-change group ($n = 274$) facilitates matching of the no-change, control subsamples to the revision subsamples across all dimensions. Matching on time, ownership, and service is performed without exception. With few exceptions, location and teaching status matches are also completed. Finally, hospitals are matched on bond rating (all within one rating level) and size (on the average, within 15 percent of total assets).

Rating levels for control hospitals are not, on the average, higher or lower than levels for event hospitals. For the upgrade sample, 35 of the 39 (90 percent) are identically matched to a control hospital on pre-revision bond

rating level, while for downgrades 57 of the 68 (84 percent) are identically matched. Remaining revision observations are matched within two gradations (e.g., A+ and A-). The majority of bond rating levels are between A+ and BBB for both revision samples (32 revisions/82 percent for upgrades and 52 revisions/76 percent for downgrades). Overall, the control subsample very closely reflects the corresponding revision subsample, which substantially strengthens the rigor of empirical tests.

4. MODELS AND TESTS

Based on the revision observation sample from 1991 through 1995, this analysis uses performance data from 1989 through 1997 with the hospital-specific years determined by the revision event year. The time span of 5 years surrounding the revision event, including the revision year ($t = 0$) as well as 2 years pre- and 2 years post-revision, undergo examination. A 5-year window ($t-2, t+2$) compensates for lags in reporting, analysis, and initiation of revision actions. In addition, rating agencies examine trends of variables, which suggest that managers consider more than one fiscal period of performance as well.

However, it becomes problematic to associate performance measures to the revision event beyond this 5-year window. For each revision observation, changes in performance measures are examined for each of the 2 years prior ($t-1$ and $t-2$) as well as the 2 years subsequent ($t+1$ and $t+2$) to the revision event, relative to the year of revision (year t). Model (1) is a multinomial logit model, which is the primary multivariate specification that is separately estimated for each year across pre- to post-revision subperiods. Firm subscripts are suppressed for presentation.

$$\begin{aligned} \Delta\text{RATING}_t = & \beta_{0j} + \beta_{1j}\Delta\text{ROA}_{t+m} + \beta_{2j}\Delta\text{CASH}_{t+m} + \beta_{3j}\Delta\text{ARD}_{t+m} \\ & + \beta_{4j}\Delta\text{LTD}_{t+m} + \beta_{5j}\Delta\text{PPA}_{t+m} + \beta_{6j}\Delta\text{TOV}_{t+m} \\ & + \beta_{7j}\Delta\text{CAPEX}_{t+m} + \beta_{8j}\text{LTAS}_{t+m} + \beta_{9j}\text{TEACH} \\ & + \beta_{10j}\text{LOCATION} + \beta_{(1991-1994)j}\text{YEAR} + \varepsilon_{t+m} \end{aligned} \quad (1)$$

Where, ΔRATING_t is a rating revision for hospital i at time $t = 0$, which is equal to 0, 1, or 2 (upgrade, matched no-change or downgrade, or $n = 3$ outcomes); and $m = -2, -1, +1, \text{ or } +2$ fiscal years relative to the revision event; and $j = n-1$ estimated coefficients for revision subgroups.

The multinomial logit provides estimated coefficients for each of $n-1$ groups, where n is the total number of values, or outcomes, that the

dependent variable can assume. The matched no-change hospitals comprise the reference (control) group for the regressions, which along with the revision observations, are used to determine the probability that hospital i is associated with revision outcome j . Thus the multinomial logit provides a more lucid examination of the effects of each variable on the likelihood of upgrade versus downgrade, relative to an ordered logit specification.

The logit tests can be viewed as a reverse regression approach since the hospitals' response is actually the "Y" variable and the rating change event is the "X," or explanatory variable. Because there are multiple possible responses, the reverse regression is estimated with responses on the right-hand side. This approach relies on statistical associations in a multiple regression framework, rather than direct tests for cause and effect relations.

Supplemental regression models include the primary model's financial measures, but incrementally incorporate one nonfinancial measure for examination. Missing data for nonfinancial measures substantially reduce the number of available observations, which constrains potential analyses. For this reason, each nonfinancial measure is added individually to the primary model and the window of examination is restricted to $(t-1, t+1)$ to maximize usable observations.

Hence the basic research question, which relates to managerial responses across both revision categories, is examined through analyzing the consistency of pre- to post-revision changes in performance, relative to a matched control group. Copeland and Ingram (1982) used an analogous approach for general obligation bonds, but their objective related more specifically to the usefulness of the ratings process and the timeliness and reliability of accounting information for predicting rating changes. The multinomial logistic regressions are used to study these multivariate relationships and test the hypotheses.

4.1. Response Variable and Performance Measures

The response variable (Δ RATING) for the multinomial logistic regressions is the bond rating revision announced by S&P. Within a three-level regression model, the matched control group is the reference event, and coefficients for independent variables are estimated for each revision event group, relative to the reference event. Independent variables consist of financial statement and nonfinancial measures reflecting hospital performance dimensions that influence analysts to issue rating actions, some of which are subject to short-term managerial influence.

Performance measures are selected from previous hospital financial-ratio and bond rating studies (e.g., Zeller et al., 1996; Watkins, 2000), along with those monitored by S&P's *CreditWeek*. Recall that Zeller et al. (1996) found seven factors of hospital performance including profitability, fixed asset efficiency, capital structure, fixed asset age, working capital efficiency, liquidity, and debt coverage. In addition, Watkins (2000) uses profitability, capital structure, asset productivity, inpatient utilization, and labor productivity measures in explaining hospital bond rating levels.

Moreover, HCIA, Inc. and Deloitte & Touche, LLP (1995) stated that occupancy rate, admissions and outpatient visits, Medicare and Medicaid revenue percentages, long-term debt to capitalization, debt service coverage, days in net accounts receivable, days cash on hand, operating and total profit margins, full-time equivalents (FTEs) personnel per 100 adjusted discharges, and discharges per bed are indicators of hospital creditworthiness. In my study, missing observations for certain nonfinancial items limit the multivariate analyses that can be performed.

With the exception of levels data presented in Table 2 (and the size-control variable), all performance measure data are presented as first differences since incremental changes in selected measures are likely to cause shifts in credit risk and influence incremental changes in ratings. Indeed, S&P (1995) examines income statement, balance sheet and cash flow trends, or changes, when performing credit evaluations. In addition, a first-difference specification for the explanatory variables tends to mitigate multicollinearity, better controls for correlated, omitted-variable bias (Dunbar & Phillips, 1997), reduces nonstationarity of the financial measures, and ameliorates simultaneity bias, relative to a levels specification. The first-difference specification thus helps to reduce nonstationarity that arises from the bond rating process, particularly with respect to changes in the economic environment and rating grade level (Iskandar, 1991).

Again, upgraded (downgraded) hospitals cannot consistently increase (decrease) performance over extended time periods. For example, when an upgraded hospital achieves a significantly positive change in pre-revision profitability in a particular year, the hospital's inability to maintain profitability improvements (i.e., changes that are approximately zero) will show statistical insignificance in later periods. Conversely, decreases, or negative changes, in performance will show negative statistical associations in subsequent periods. The primary model includes the seven financial statement measures, as well as the control variables, discussed further later.

Table 2. Performance Measure Descriptive Statistics: For a Matched Sample of 214 NonProfit Hospitals between 1991 and 1995.

Panel A: Upgrade and Matched Control Group Levels																
	Upgrades (max $n = 39$)						Upgrade control group ^a (max $n = 39$)						Differences upgrades versus control group ^b			
	$t-2$		$t = 0$		$t+2$		$t-2$		$t = 0$		$t+2$		Mean		Median	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	$t-2$	$t+2$	$t-2$	$t+2$
<i>Financial measures</i>																
ROA	0.055	0.058	0.068	0.066	0.062	0.063	0.046	0.049	0.050	0.049	0.053	0.054	0.009	0.009	0.009	0.009
CASH	119.3	74.4	148.8	131.0	170.9	171.0	93.9	82.2	108.8	92.8	131.1	117.3	25.4	39.8*	-7.8	53.7*
ARD	65.68	64.62	59.85	57.64	56.93	59.27	66.90	68.17	67.51	66.81	65.36	66.62	-1.22	-8.43**	-3.55	-7.35**
LTD	0.383	0.353	0.366	0.372	0.339	0.318	0.401	0.426	0.385	0.388	0.348	0.361	-0.018	-0.009	-0.073	-0.043
TOV	1.978	2.004	2.105	2.061	2.056	1.894	1.963	1.939	1.997	1.958	1.990	1.898	0.015	0.066	0.065	-0.004
PPA	7.090	7.139	7.133	7.384	7.784	7.708	6.987	6.900	7.472	7.439	8.029	7.682	0.103	-0.245	0.239	0.026
CAPEX	0.115	0.104	0.087	0.079	0.099	0.077	0.107	0.086	0.095	0.086	0.095	0.081	0.008	0.004	0.018	-0.004
<i>Nonfinancial measures</i>																
LOS	5.717	5.600	5.535	5.350	5.100	5.000	5.834	5.950	5.589	5.600	5.342	5.300	-0.117	-0.242	-0.350	-0.300
STAFF	6.457	6.250	7.252	7.250	8.366	8.370	7.087	7.090	7.737	7.490	8.158	7.815	-0.630	0.208	-0.840	0.555
CAPPROD	58.92	61.03	58.00	55.76	62.39	59.87	54.38	54.11	56.51	53.70	58.83	54.46	4.54	3.56	6.92	5.41
Panel B: Downgrade and Matched Control Group Levels																
	Downgrades (max $n = 68$)						Downgrade control group ^c (max $n = 68$)						Differences downgrades versus control group ^b			
	$t-2$		$t = 0$		$t+2$		$t-2$		$t = 0$		$t+2$		Mean		Median	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	$t-2$	$t+2$	$t-2$	$t+2$
<i>Financial measures</i>																
ROA	0.022	0.022	0.021	0.025	0.033	0.032	0.039	0.035	0.041	0.039	0.055	0.046	-0.017**	-0.022**	-0.013*	-0.014**
CASH	68.0	51.5	70.2	50.7	90.6	77.0	73.1	69.0	81.0	72.4	114.7	81.8	-5.1	-24.1	-17.5	-4.8

ARD	74.50	71.96	71.79	71.60	63.93	62.60	69.89	70.56	66.61	66.54	61.48	63.59	4.61	2.45	1.4	-0.99
LTD	0.401	0.375	0.416	0.411	0.401	0.405	0.387	0.379	0.376	0.372	0.343	0.348	0.014	0.058*	-0.004	0.057*
TOV	1.996	1.849	2.075	1.954	2.080	1.982	1.961	1.932	2.028	1.976	2.110	2.113	0.035	-0.03	-0.083	-0.131
PPA	7.798	7.479	8.320	8.259	9.095	8.889	7.626	7.507	8.037	7.672	8.484	8.183	0.172	0.611	-0.028	0.706
CAPEX	0.096	0.076	0.081	0.076	0.072	0.061	0.099	0.076	0.086	0.081	0.091	0.076	-0.003	0.019*	0.000	-0.015*
<i>Nonfinancial measures^b</i>																
LOS	6.252	6.250	5.972	5.750	5.400	5.200	6.294	5.900	6.145	5.950	5.589	5.500	-0.042	-0.189	0.35	-0.30
STAFF	6.584	6.240	6.940	6.700	7.983	7.600	6.559	6.450	6.811	6.460	7.756	7.410	0.025	0.227	-0.21	0.19
CAPPROD	48.95	47.87	50.29	48.83	52.45	49.62	50.89	51.35	53.76	52.41	56.35	52.63	-1.94	-3.9	-3.48	-3.01

Notes: ROA = Excess of revenues over expenses/total assets; CASH = (cash & investments+board designated funds)/((total operating expenses – depreciation and amortization expense)/365); ARD = (net accounts receivable * 365)/net patient revenue; LTD = long-term debt/total assets; TOV = total operating revenue/net fixed assets; PPA = accumulated depreciation/ depreciation expense; CAPEX = capital expenditures/gross fixed assets; LOS = inpatient length of stay; STAFF = full-time equivalent employees/occupied beds; CAPPROD = case-mix adjusted admissions/beds in service.

* and ** indicate significance at $p < 0.05$ and $p < 0.01$, respectively (based on two-tailed tests).

^aThe upgrade control group is matched on a hospital-specific basis to the upgrade subsample on the following dimensions: time (year); ownership type (AHA control code); service classification (AHA service code); urban/rural location (MSA); teaching status (teaching or nonteaching); bond rating level before change; and size (total assets in the year of match).

^bTests of differences in means (t -statistics) and medians (Z -statistics) for performance measures across groups.

^cThe downgrade control group is matched on a hospital-specific basis to the downgrade subsample on the following dimensions: time (year); ownership type (AHA control code); service classification (AHA service code); urban/rural location (MSA); teaching status (teaching or nonteaching); bond rating level before change; and size (total assets in the year of match).

4.1.1. Financial Statement Measures

- ROA = excess of revenues over expenses/total assets (see [AICPA Guide 2003, pp. 163–183](#), for financial statement presentations and definitions). ROA, which includes nonoperating revenue and expenses, measures the profitability dimension ([Zeller et al., 1996](#); [Watkins, 2000](#); [Brickley & Van Horn, 2002](#)). Since a positive relationship between profitability and credit rating is expected, the first difference of return on assets (Δ ROA) should be greater (less) for upgrades (downgrades) in the pre-revision subperiod, but Δ ROA is expected to decrease (increase) for upgrades (downgrades). Debt service coverage undergoes examination as well, but a high correlation with ROA, combined with a relatively larger number of missing observations for this measure in the database, precludes its use as a financial measure.
- CASH = (cash and investments+board designated funds)/((total operating expenses – depreciation and amortization expense)/365). [Zeller et al. \(1996\)](#) used this measure. Owing to a positive expectation between cash and credit rating, the first difference (Δ CASH) of days cash on hand should be greater (less) for upgrades (downgrades) across both subperiods. Given the credit analysis emphasis of the database, reported cash and investments includes amounts in affiliated foundations. As previously noted, governmental hospitals, which can have off-balance sheet cash balances that are held and managed by a central municipal treasury function, are excluded from the sample.
- ARD = (net accounts receivable * 365)/net patient revenue ([McCue et al., 1990](#); [HCIA, Inc. and Deloitte & Touche, LLP, 1995](#)). Since higher days in receivables suggest inefficient cash conversion and less liquidity, the change in days in net accounts receivable (Δ ARD) should be less (greater) for upgrades (downgrades) in the pre-revision subperiod. Managerial responses by downgraded hospitals to accelerate receivables conversion and improve cash levels suggest that Δ ARD will become less for downgrades. Since the hospital industry maintains substantial receivable levels due to the third-party payer system, a substantial receivables investment more adversely impacts liquidity for the hospital industry than many other sectors. For example, in 1994 hospitals maintained a median of 69 days in receivables ([HCIA, Inc. and Deloitte & Touche, LLP, 1995](#)). Decreases in receivables suggest that more effective managerial controls are in place.
- LTD = long-term debt/total assets ([McCue et al., 1990](#); [HCIA, Inc. and Deloitte & Touche, LLP, 1995](#)). Financial leverage should be negatively related to credit rating and the first difference (Δ LTD) of this capital

structure measure should be less (greater) for upgrades (downgrades) across subperiods.

- PPA = accumulated depreciation/depreciation expense. PPA measures facility age (Zeller et al., 1996). Relatively newer facilities will have a lower average property and plant age, which is more attractive from a credit rating perspective. Thus the change in estimated average plant age (Δ PPA) is anticipated to be less (greater) for upgrades (downgrades) in both subperiods.
- TOV = total operating revenue/net fixed assets (Zeller et al., 1996; Watkins, 2000). Turnover measures the efficient use of net fixed assets, which should positively influence credit ratings. Therefore, the change in the fixed asset turnover (Δ TOV) should be greater (less) for upgrades (downgrades) in both subperiods.
- CAPEX = capital expenditures/gross fixed assets. CAPEX measures capital expenditures (Zeller et al., 1996; Barniv et al., 2000). Credit rating tends to be positively associated with capital expenditures that maintain or upgrade hospital facilities and the change in capital expenditures (Δ CAPEX) is expected to be greater (less) for upgrades (downgrades) in both subperiods. Post-revision, positive (negative) reinforcements for upgrades (downgrades) are consistent with Jain and Kini (1994) due to changes in hospitals' ability to obtain debt financing.

To summarize, managerial responses for downgrades are expected for ROA and ARD, while only changes in ROA are expected for upgrades. However, several of the performance measures are likely to not be changed by managers in the short term (e.g., financial leverage and facility investment). As previously indicated, additional variables are included in the regression equations to control for the effects of size, teaching status, urban location, and year of revision. These variables are presented later.

4.1.2. Control Variable Definitions

- LTAS is the natural log of total assets. LTAS further controls for size effects. Adjusted patient days and hospital beds were also considered for use as size-control measures, but extensive missing data precluded their use in matching the control groups and in estimating the major logistic regressions. The size-control variable should be greater (less) for upgrades (downgrades).
- TEACH is a dummy variable to control for teaching status. TEACH is assigned a value of one for teaching hospitals and is zero otherwise. Since

high costs, overspecialization, and high numbers of uninsured create stress for teaching hospitals (Montague & Pitman, 1996), TEACH should be less (greater) for upgrades (downgrades).

- LOCATION is a dummy variable to control for urban versus rural location, which assumes the value of one when a hospital is located in a metropolitan statistical area (MSA) and is zero otherwise. Since rural hospitals tend to perform better than urban hospitals (MEDPAC, 2001), LOCATION should be less (greater) for upgrades (downgrades). MEDPAC's (2001) analysis of the financial performance of rural hospitals indicates that total margin is greater for rural over urban hospitals for every year throughout the 1990s, which includes the sample period examined in this study.
- YEAR is the dummy control variables for year of revision event. YEAR takes the value of one for the year of revision (or matched year) and is zero otherwise.

The usefulness of financial statement data is enhanced when supplemented by relevant operating statistics. Recall that S&P requests supplemental operating information, in addition to audited financial statements, as part of the annual rating review process. Market competition, managed care payer mix, and other nonfinancial measures are considered for use in this study, but due to a high frequency of missing data it could not be implemented. Indirect proxies were used for hospital payer mix, which can have performance consequences through affecting cash flow and liquidity and thus bias against finding the hypothesized results.

In addition to the primary model consisting of the seven financial statement measures and the four control variables presented earlier, differences in the following nonfinancial measures are examined across revision subperiods. To control for omitted variables problems, each nonfinancial measure is incrementally examined within the context of the primary financial model. Nonfinancial performance improvements are expected only for the downgraded subsample due to their distressed situations and the necessity of managers to undertake real operational improvements. On the contrary, an opportunistic orientation for the upgraded group suggests no significant changes in nonfinancial performance measures across subperiods.

4.1.3. Nonfinancial Measures

- LOS is the length-of-stay. The change in this efficiency measure (Δ LOS) reflects hospitals' ability to control costs (Evans et al., 2001). Payment per diagnosis under the prospective payment system creates incentives for hospitals to reduce the LOS. More effective cost control by upgraded

hospitals suggests that Δ LOS is less (greater) for upgrades (downgrades) pre-revision, but with an expected reversal for downgrades due to managerial efforts to improve cost-effectiveness. Although a LOS adjusted for case-mix captures differences in patient mix, the first differencing specification used in this study mitigates comparability problems.

- STAFF = full-time equivalent employees/occupied beds. Watkins (2000) uses this quality measure, which I use in this study for consistency. Since hospitals with greater service quality should have stronger credit, pre-revision Δ STAFF should be greater (less) for upgrades (downgrades), with an expected reversal for downgrades reflecting managerial efforts to improve quality. Other quality measures (e.g., mortality rates) are available through Medicare, but need to be adjusted for local patient health demographics.
- CAPPROD = case-mix adjusted admissions/beds in service (Watkins, 2000). The pre-revision change in this capital productivity measure (Δ CAPPROD) should be greater (less) for upgrades (downgrades), but with a downgrade reversal due to efforts to manage capacity costs. Alternative productivity measures include patient case flow and occupancy rate, but a high frequency of missing data precludes examination of these measures.

5. RESULTS

5.1. Descriptive Statistics and Univariate Tests

5.1.1. Performance Measure Levels and Tests across Revision Subgroups

Panel A of Table 2 presents mean and median performance measure levels at 2 years pre-revision ($t-2$), the year of revision ($t = 0$), and 2 years post-revision ($t+2$), for upgrades and the upgrade-matched control group. Differences in means and medians across subgroups, along with significance levels for t -statistics and Wilcoxon tests, are also presented in Panel A. Panel B presents similar data for downgrades and the downgrade-matched control group. To moderate the effects of extreme observations, all performance measures are winsorized by year for levels (or first differences in subsequent tables) at the 1st and 99th percentiles.

As shown in Panel A, upgrades obtain a peak mean (median) ROA of 6.8 percent (6.6 percent) at $t = 0$, while the matched control group's mean (median) ROA peaks at $t+2$ with 5.3 percent (5.4 percent). Statistically

significant differences in performance measure levels are observed at $t+2$ for CASH and ARD. The absence of statistically significant differences at $t-2$ implies that the upgrade group has pre-revision characteristics similar to the control group.

In Panel B, performance levels for the downgrade and downgrade-matched control groups show that downgrade profitability is highest at $t+2$ with mean (median) ROA of 3.3 percent (3.2 percent). Similar to Panel A, the downgrade-control group shows highest mean (median) ROA of 5.5 percent (4.6 percent) at $t+2$. With the exception of profitability, differences are significant for LTD and CAPEX only at $t+2$, which also implies that the downgrade group has pre-revision characteristics similar to the control group. Finally, downgrades appear to be more highly leveraged than upgrades and the control groups at $t+2$, with mean (median) LTD of 40.1 percent (40.5 percent). Wheeler et al. (2000) discussed why nonprofit hospitals' capital structure may be biased toward high-equity financing ratios, as shown in Table 2.

5.1.2. Performance Measure Changes and Tests across Subperiods

In Table 3, Panel A presents mean performance measure changes for upward revisions and for the matched, upgrade-matched control group, pooled 2 years pre- and post-revision. Panel B shows univariate information for downward revisions and the downgrade-matched control group. In both panels, paired differences in means (t -tests) for the performance measure changes are presented across revision and control groups.

Panel A indicates statistically significant declines in Δ ROA and Δ TOV for upgraded hospitals across revision subperiods. In addition, post-revision increases in Δ PPA are reported for upgrades, suggesting that even though capital expenditures are increasing, average facility assets are growing older. No statistically significant differences in mean changes are indicated for the matched upward-revision control group in Panel A. For downgrades, Panel B presents significant increases in Δ ROA and Δ CASH, and also a decrease in Δ LOS across subperiods. However, results for the matched downward-revision subgroup in Panel B also reveal increased Δ CASH with reduced Δ LOS. These results provide a preliminary indication that managers of downgraded hospitals improve profitability, cash, and LOS, but not by as much as the no-change group.

Fig. 2 summarizes the annual mean change in profitability (Δ ROA) across pre- to post-revision subperiods ($t-2$ to $t+2$) by revision subgroup, along with the combined no-change subgroup. The graph indicates that the mean Δ ROA for the no-change group remains fairly stable between 0 and 0.5

Table 3. Performance Measure Changes Pooled 2 Years Pre- and Post-Revision by Revision and Control Groups.

Panel A: Upgrade and Matched Control Group ^a						
	Upgrades (max $n = 78$)			Upgrade control group (max $n = 78$)		
	Pre-revision	Post-revision	Difference	Pre-revision	Post-revision	Difference
<i>Financial measures^b</i>						
Δ ROA	0.006	-0.005	-0.011*	0.002	0.000	-0.002
Δ CASH	17.172	16.173	-0.999	7.642	12.853	5.211
Δ ARD	-2.789	-1.535	1.254	-0.004	-0.594	-0.590
Δ LTD	-0.008	-0.015	-0.007	-0.007	-0.018	-0.011
Δ TOV	0.056	-0.025	-0.081*	0.013	-0.003	-0.016
Δ PPA	0.046	0.335	0.289**	0.244	0.289	0.045
Δ CAPEX	-0.012	0.007	0.019	-0.007	-0.001	0.006
<i>Nonfinancial measures^b</i>						
Δ LOS	-0.216	-0.248	-0.032	-0.183	-0.232	-0.049
Δ STAFF	0.391	0.464	0.073	-1.127	0.298	1.425
Δ CAPPROD	0.654	1.604	0.950	0.953	0.913	-0.040
Panel B: Downgrade and Matched Control Group ^c						
	Downgrades (max $n = 136$)			Downgrade control group (max $n = 136$)		
	Pre-revision	Post-revision	Difference	Pre-revision	Post-revision	Difference
<i>Financial measures^b</i>						
Δ ROA	-0.001	0.006	0.007*	0.001	0.007	0.006
Δ CASH	-0.025	10.044	10.069**	4.552	12.779	8.227*
Δ ARD	-1.530	-3.803	-2.273	-1.549	-2.653	-1.104
Δ LTD	0.009	-0.009	-0.018	-0.006	-0.015	-0.009

Table 3. (Continued)

Panel B: Downgrade and Matched Control Group ^c						
	Downgrades (max $n = 136$)			Downgrade control group (max $n = 136$)		
	Pre-revision	Post-revision	Difference	Pre-revision	Post-revision	Difference
ΔTOV	0.039	-0.003	-0.042	0.034	0.041	0.007
ΔPPA	0.291	0.377	0.086	0.204	0.226	0.022
$\Delta CAPEX$	-0.010	-0.004	0.006	-0.006	0.002	0.008
<i>Nonfinancial measures^b</i>						
ΔLOS	-0.101	-0.293	-0.192*	-0.094	-0.324	-0.230*
$\Delta STAFF$	0.081	0.510	0.429	0.281	0.425	0.144
$\Delta CAPPROD$	0.956	1.439	0.483	-0.404	0.972	1.376

Notes: ΔROA = Excess of revenues over expenses/total assets; $\Delta CASH$ = (cash & investments+board designated funds)/((total operating expenses - depreciation and amortization expense)/365); ΔARD = (net accounts receivable * 365)/net patient revenue; ΔLTD = long-term debt/total assets; ΔTOV = total operating revenue/net fixed assets; ΔPPA = accumulated depreciation/depreciation expense; $\Delta CAPEX$ = capital expenditures/gross fixed assets; ΔLOS = inpatient length of stay; $\Delta STAFF$ = full-time equivalent employees/occupied beds; $\Delta CAPPROD$ = case-mix adjusted admissions/beds in service.

* and ** indicate significance at $p < 0.05$ and $p < 0.01$, respectively, based on one-tailed tests for revision sample and two-tailed tests for control sample. Paired t -test (means).

^aDue to two-period pooling, maximum $n = 78$ for the upward revision and upward-revision control subgroups. The upgrade control group is matched on a hospital-specific basis to the upgrade subsample on the following dimensions: time (year); ownership type (AHA control code); service classification (AHA service code); urban/rural location (MSA); teaching status (teaching or nonteaching); bond rating level before change; and size (total assets in the year of match).

^bFirst differences of levels variables defined in Table 2 are computed annually (i.e., $\Delta = year_t - year_{t-1}$).

^cDue to two-period pooling, maximum $n = 136$ for the downward revision and downward-revision control subgroups. The downgrade control group is matched on a hospital-specific basis to the upgrade subsample on the following dimensions: time (year); ownership type (AHA control code); service classification (AHA service code); urban/rural location (MSA); teaching status (teaching or nonteaching); bond rating level before change; and size (total assets in the year of match).

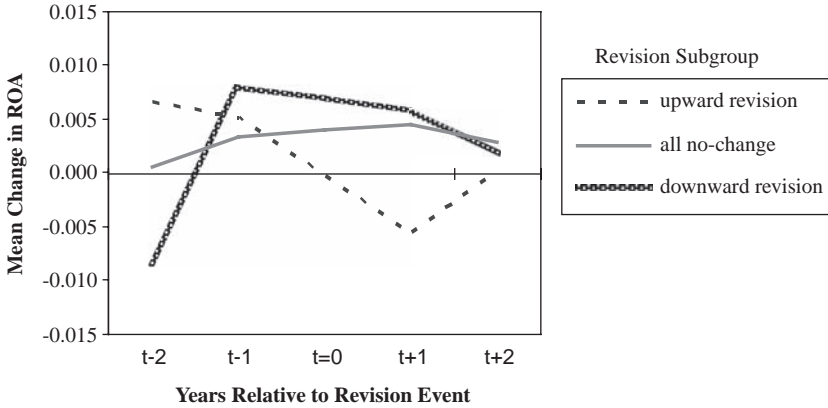


Fig. 2. Mean Change in ROA by Revision Subgroup.

percent throughout the sample period. However, for the downward subgroup, negative mean ΔROA at $t-2$ becomes strongly positive at $t-1$ and is greatest among subgroups. In contrast, mean ΔROA for upgrades is highly positive at $t-2$, but sharply negative at $t+1$. Although these univariate results provide some initial evidence of managerial responses to revision event, multivariate analyses are necessary to more rigorously examine the relationships of these measures to the revision event.

5.2. Primary Logistic Regressions Using Financial Measures

Table 4 presents results for the primary multinomial logistic regressions with a three-level response variable (two revision subgroups and the combined, matched no-change subgroup) and financial performance measures across pre- to post-revision subperiods. I use the generalized logit specification in SAS Ver 8 for PROC LOGISTIC (LINK = GLOGIT option) to estimate the multinomial logistic regressions (SAS Institute Inc., 2000, *SAS OnlineDoc®: Version 8*). Given that the revision event year (i.e., $t = 0$) differs across hospital observations (see Table 1) a control for time is used.

The primary regressions incorporate all control variables, including year-control dummies, which equals one for the year of revision and zero otherwise (not tabulated). As shown, all variations of Model 1 ($t-2$, $t-1$, $t+1$, and $t+2$) are highly significant (chi-squares ranging from 50.660 for $t+2$ to 73.497 for $t-2$). Recall that coefficients are separately estimated for

Table 4. Primary Logistic Regression Results by Year Relative to Revision Event ($t = 0$).

$$\begin{aligned} \text{Model 1}^a \quad \Delta\text{RATING}_t = & \beta_{0j} + \beta_{1j}\Delta\text{ROA}_{t+m} + \beta_{2j}\Delta\text{CASH}_{t+m} + \beta_{3j}\Delta\text{ARD}_{t+m} + \beta_{4j}\Delta\text{LTD}_{t+m} + \beta_{5j}\Delta\text{PPA}_{t+m} \\ & + \beta_{6j}\Delta\text{TOV}_{t+m} + \beta_{7j}\Delta\text{CAPEX}_{t+m} + \beta_{8j}\text{LTAS}_{t+m} + \beta_{9j}\text{TEACH} + \beta_{10j}\text{LOCATION} \\ & + \beta_{(1991-1994)j}\text{YEAR} + \varepsilon_{t+m} \end{aligned}$$

where $\Delta\text{RATING} = 0, 1, \text{ or } 2$ (upgrade, matched no-change or downgrade, or $n = 3$ outcomes) and $m = -2, -1, +1, \text{ or } +2$ fiscal years relative to the revision event, and $j = n - 1$ coefficients for revision subgroups

Total $n = 214$: 39 upgrades, 107 matched no-change, 68 downgrades (all regressions)

Performance Measures ^b	Predicted Signs (Pre/Post)	Upgrades				Predicted Signs (pre/post)	Downgrades			
		$t-2$	$t-1$	$t+1$	$t+2$		$t-2$	$t-1$	$t+1$	$t+2$
		Pre-revision		Post-revision			Pre-revision		Post-revision	
ΔROA	(+/-)	11.434 (1.14)	-12.480 (-1.10)	-24.464*** (-2.38)	-2.207 (-0.26)	(-/+)	-19.492*** (-2.37)	14.489** (2.13)	-1.487 (-0.18)	2.925 (0.45)
ΔCASH	(+/+)	0.003 (0.24)	0.031*** (3.26)	0.009 (1.20)	-0.004 (-0.47)	(-/-)	-0.023*** (-2.63)	-0.009 (-1.15)	0.001 (0.16)	-0.013* (-1.64)
ΔARD	(-/-)	-0.014 (-0.48)	0.005 (0.23)	-0.013 (-0.51)	-0.002 (-0.10)	(+/-)	-0.028 (-1.27)	-0.015 (-0.95)	-0.011 (-0.61)	-0.031* (-1.53)
ΔLTD	(-/-)	-14.716** (-1.92)	5.760 (1.30)	-8.138* (-1.58)	6.285 (1.22)	(+/+)	7.325** (1.92)	7.348** (2.29)	0.871 (0.23)	4.978 (1.08)
ΔPPA	(-/-)	-0.673** (-1.83)	-0.945*** (-2.61)	0.284 (0.74)	0.127 (0.42)	(+/+)	0.909*** (2.90)	-0.111 (-0.42)	0.453* (1.62)	0.368* (1.45)

Δ TOV	(+ / +)	0.281 (0.25)	5.195*** (3.43)	-0.192 (-0.20)	-0.505 (-0.39)	(- / -)	0.583 (0.63)	-0.752 (0.72)	-0.672 (-0.89)	-0.485 (-0.43)
Δ CAPEX	(+ / +)	1.012 (0.23)	10.039** (2.30)	9.748*** (2.65)	-4.864 (-1.49)	(- / -)	-7.514** (-2.08)	0.077 (0.02)	0.118 (0.04)	-4.829* (-1.52)
<i>Control variables</i>										
LTAS		0.751** (2.38)	1.130*** (3.32)	1.077*** (3.29)	1.061*** (3.30)		-0.215 (-0.75)	-0.200 (-0.77)	-0.369 (-1.32)	-0.522* (-1.77)
TEACH		-0.886 (-1.16)	-1.187 (-1.41)	-1.388** (-1.68)	-1.482* (-1.82)		0.763 (1.22)	0.613 (1.01)	0.864 (1.38)	1.037 (1.64)
LOCATION		-0.031 (-0.06)	-1.162* (-1.88)	-1.025* (-1.74)	-0.844 (-1.48)		-0.242 (-0.53)	-0.076 (-0.18)	-0.099 (-0.24)	-0.168 (-0.40)
Model χ^2 (<i>p</i> -value) ^c		73.497 (0.000)	72.901 (0.000)	53.431 (0.003)	50.660 (0.006)					

Notes: LTAS = The natural log of total assets; TEACH = a dummy variable with a value of one for teaching hospitals and is zero otherwise; LOCATION = a dummy variable with a value of one for urban hospitals and is zero otherwise; and YEAR = a dummy variable that equals one in the year of revision (or matched year) and is zero otherwise. No revisions are observable for the S&P-rated no-change control group from 1991 to 1995, which is the reference group for estimated coefficients in all models. These hospitals are individually matched to each of the revision observations using the following control dimensions: time (year); ownership type (AHA control code); service classification (AHA service code); urban/rural location (MSA); teaching status (teaching or nonteaching); bond rating level before change; and size (total assets in the year of match). *t*-values are in parentheses.

*, **, and *** indicate significance at $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively, based on one-tailed tests for performance measures and two-tailed tests for control variables.

^aYear-control dummies are not tabulated.

^bFirst differences of levels variables defined in Table 2 are computed annually (i.e., $\Delta = \text{year}_t - \text{year}_{t-1}$).

^cReported χ^2 and *p*-values are for both upgrade and downgrade subgroups.

each pre- or post-revision year, relative to the revision event year. Also, note that only one model χ^2 and p -value are presented for each time period for both subgroups since the multinomial logistic regression provides $n-1$ estimated coefficients for the n subgroups (i.e., the estimated coefficients for both upgrades and downgrades are generated by the same regression).

For the upgrade group at $t-2$, the estimated coefficients for Δ LTD and Δ PPA are significantly less (and significantly greater for the control variable LTAS), relative to the no-change group. This indicates that hospitals have greater reductions than the control group in financial leverage and facility age at two periods before upgrade. Moving to one period before upgrade ($t-1$), Δ CASH, Δ TOV, and Δ CAPEX are significantly greater than the control group, as predicted, while the negative Δ PPA becomes more significant (control variables LTAS and LOCATION are significant as well at $t-1$).

For downgrades at $t-2$, Δ ROA, Δ CASH, and Δ CAPEX are significantly less, relative to the no-change group. Conversely, Δ LTD and Δ PPA are greater for downgrades, as expected, and Δ LTD continues to be greater for downgrades at $t-1$. More importantly, at one period before the downgrade event, Δ ROA for downgrades becomes significantly greater. Although a positive managerial response is expected for downward revisions, this profitability response is clearly detectable before the actual downgrade being issued. This suggests that managers initiate preemptive profitability improvements in an attempt to forestall the actual downgrade rating action.

On the whole, upgraded hospitals have greater pre-revision changes in cash, turnover, and capital expenditures, but smaller changes in financial leverage and facility age, relative to the control group. Downgraded hospitals reveal pre-revision changes that are less for profitability, cash, and capital expenditures, but greater for financial leverage and facility age. Although profitability changes for the downgraded group are initially less at $t-2$, managers undertake profitability increases at $t-1$ to signal financial stability and avoid the actual downgrade action, along with its punitive implications. This increase to profitability represents a short-term, preemptive response to preserve the pre-downgrade credit rating.

Subsequent to revision, Δ ROA for upgraded hospitals is significantly less at $t+1$, which indicates post-upgrade performance deterioration. This strong negative change to profitability in the period immediately following upgrade suggests that managerial actions are related to the observed deterioration in profitability performance. As expected, Δ CAPEX continues to be greater for upgrades one period following the upgrade event (the control variable, TEACH, also becomes significant in expected directions in the post-revision regressions).

Similar to pre-revision results, post-revision performance for downgraded hospitals shows that Δ PPA (Δ CASH) continues to be greater (less). However, note that Δ ARD is significantly less at $t+2$, which suggests that managers are initiating post-downgrade efforts to improve liquidity by accelerating cash conversion of accounts receivable. Finally, Δ CAPEX continues to be less at $t+2$, which is reinforced by reduced access to debt financing as a result of the credit downgrade.

Finally, observe that teaching affiliated hospitals (TEACH) and urban locations (LOCATION) negatively affect upgraded hospitals, but have no significant impact on downgrades. These findings are consistent with [Montague and Pitman \(1996\)](#) who indicate that high costs, overspecialization, and high numbers of uninsured patients create additional stress for teaching hospitals, which provide the previously discussed negative expectation for creditworthiness. Moreover, the results coincide with [MEDPAC \(2001\)](#), which indicates that rural hospitals tend to perform better than urban hospitals.

These findings support both hypotheses of organizational responses to the revision event. Regression results indicate that managers of downgraded hospitals preemptively influence profitability, and in the post-revision subperiod, liquidity (Δ ARD) as well. This evidence suggests that managers in distress with credit downgrades attempt to signal credit stability to rating analysts, creditors, and other stakeholders by improving profitability in advance of the downgrade announcement. Results also indicate that post-revision profitability decreases occur for upgrades only one period following the upgrade announcement, which is consistent with hospital earnings management identified by [Leone and Van Horn \(2003\)](#). Sensitivity analysis presented in [Table 6](#) further examines these profitability responses.

5.3. Logistic Regressions Using Nonfinancial Measures

Further regressions examine the efficiency (Δ LOS), quality (Δ STAFF), and capacity cost (Δ CAPPROD) measures. Since nonfinancial measures have a high frequency of missing data in the Merritt database, analysis and inferences using these measures are restricted. To mitigate this limitation, each nonfinancial measure is incrementally incorporated into the primary model to provide three additional models, each of which includes one of the nonfinancial measures.

In addition, restricting the window of analysis to $t-1$, $t+1$ maximizes usable observations. For each model, the revision subgroups are rematched,

as necessary, to the no-change control hospitals using the control dimensions previously discussed (year, ownership and service types, location, teaching status, bond rating level before change, and size). As with the primary regressions that use financial measures, control variables for size, teaching status, location, and year are also included in the supplemental regressions.

Results for upgrades using nonfinancial measures are shown in Panel A of Table 5, while results for downgrades are presented in Panel B. As indicated in Panel A, only the $\Delta\text{CAPPROD}$ measure is significant for the upgrade group at $t+1$. However, as stated earlier, changes in nonfinancial performance are expected to be more observable for the downgraded subgroup as distressed circumstances promote real operational improvements. Panel B of Table 5 shows a significant decrease in quality (ΔSTAFF) for downgrades at $t-1$. This likely represents anticipatory quality reduction response by downgraded hospital managers that stems from attempts to improve short-term profitability, consistent with the observed profitability increases in the primary regression results. Indeed, the decrease in ΔSTAFF dominates the increased profitability for downgrades in the quality measure regression and renders the estimated coefficient for ΔROA insignificant. However, a significant, post-downgrade reversal in ΔSTAFF suggests a longer-term managerial perspective in restoring quality to improve the long-term credit rating.

Although quality (ΔSTAFF) and efficiency (ΔLOS) have a low to moderate bivariate correlation, and each of these measures is separately incorporated into the logistic regressions, it is interesting that ΔLOS is not significant. While estimated coefficients for pre- to post-revision ΔSTAFF are significant for the downgrade subgroup, as expected, such staffing-related quality changes occur independent of changes in ΔLOS during the periods immediate to the revision event. This result suggests that managers can more readily influence changes to staffing levels than length-of-stay.

These supplemental regression results with nonfinancial measures provide further evidence that downgraded hospitals take preemptive steps to modify underlying operating characteristics immediately preceding downgrade in an attempt to strengthen profitability. However, there is limited evidence that, to some extent, managers restore staffing levels to maintain post-downgrade service quality at $t+1$.

5.4. Profitability Sensitivity Analysis

The primary regression analysis using financial measures indicates that downgraded (upgraded) hospitals increase (decrease) profitability performance

Table 5. Primary Logistic Regressions with Nonfinancial Measures, by Year Relative to Revision Event ($t = 0$).Model 1 (Modified):^a

$$\begin{aligned} \Delta\text{RATING}_t = & \beta_{0j} + \beta_{1j}\Delta\text{ROA}_{t+m} + \beta_{2j}\Delta\text{CASH}_{t+m} + \beta_{3j}\Delta\text{ARD}_{t+m} + \beta_{4j}\Delta\text{LTD}_{t+m} + \beta_{5j}\Delta\text{PPA}_{t+m} \\ & + \beta_{6j}\Delta\text{TOV}_{t+m} + \beta_{7j}\Delta\text{CAPEX}_{t+m} + \beta_{8j}\Delta\text{NONFIN}_{t+m} + \beta_{9j}\text{LTAS}_{t+m} + \beta_{10j}\text{TEACH} \\ & + \beta_{11j}\text{LOCATION} + \beta_{(1991-1994)j}\text{YEAR} + \varepsilon_{t+m} \end{aligned}$$

where $\Delta\text{RATING} = 0, 1, \text{ or } 2$ (upgrade, matched no-change or downgrade, or $n = 3$ outcomes) and $m = -2, -1, +1, \text{ or } +2$ fiscal years relative to the revision event, and $j = n-1$ coefficients for revision subgroups; and NONFIN represents one of three nonfinancial measures included with the primary model. ΔLOS : $n = 170$, 33 upgrades, 85 matched no-change, 52 downgrades; ΔSTAFF : $n = 80$, 19 upgrades, 40 matched no-change, 21 downgrades; and $\Delta\text{CAPPROD}$: $n = 142$, 30 upgrades, 71 matched no-change, 41 downgrades

Performance Measures ^b	Predicted Signs (Pre/Post)	ΔLOS		ΔSTAFF		$\Delta\text{CAPPROD}$	
		$t-1$	$t+1$	$t-1$	$t+1$	$t-1$	$t+1$
<i>Panel A: Results for upgrades</i>							
ΔROA	(+/-)	-9.517 (-0.77)	-24.760** (-2.21)	-29.245 (-1.10)	-25.133* (-1.43)	-24.531 (-1.49)	-30.964*** (-2.55)
ΔCASH	(+/-)	0.045*** (3.39)	0.009 (1.19)	0.070*** (2.85)	0.004 (0.40)	0.044*** (3.14)	0.005 (0.58)
ΔARD	(-/-)	0.034 (1.30)	-0.001 (-0.02)	0.055 (1.34)	-0.036 (-0.95)	0.046 (1.42)	-0.003 (-0.11)
ΔLTD	(-/-)	1.024 (0.19)	-8.957* (-1.59)	-15.230* (-1.38)	-4.397 (-0.52)	1.540 (0.26)	-9.347* (-1.50)
ΔPPA	(-/-)	-0.911*** (-2.33)	0.528 (1.19)	-1.234** (-2.05)	1.209** (1.73)	-1.646*** (-3.24)	0.325 (0.65)
ΔTOV	(+/-)	5.119*** (3.05)	0.561 (0.47)	6.213*** (2.36)	0.024 (0.014)	8.716*** (3.48)	1.525 (1.13)
ΔCAPEX	(+/-)	7.462* (1.59)	8.726** (2.02)	5.237 (0.80)	3.354 (0.62)	16.285*** (2.52)	8.635** (1.85)

Table 5. (Continued)

Performance Measures ^b	Predicted Signs (Pre/Post)	Δ LOS		Δ STAFF		Δ CAPPROD	
		<i>t</i> -1	<i>t</i> +1	<i>t</i> -1	<i>t</i> +1	<i>t</i> -1	<i>t</i> +1
Δ LOS	(-/-)	0.401 (0.54)	-0.288 (-0.88)				
Δ STAFF	(+/-)			0.976 (1.07)	0.780 (0.88)		
Δ CAPPROD	(+/-)					-0.048 (-0.90)	0.072** (1.84)
<i>Control variables</i>							
LTAS		1.527*** (3.64)	1.384*** (3.31)	1.265** (2.50)	1.159** (2.54)	1.579*** (2.76)	1.798*** (3.41)
TEACH		-1.615* (-1.77)	-1.858** (-1.98)	-0.802 (-0.67)	-1.117 (-0.97)	-2.047 (-1.61)	-2.459** (-2.25)
LOCATION		-1.073 (-1.58)	-0.995 (-1.58)	-0.100 (-0.12)	-0.235 (-0.31)	-1.784** (-2.43)	-1.096* (-1.67)
Model χ^2 (<i>p</i> -value)		68.287 (0.000)	46.181 (0.002)	48.920 (0.001)	34.617 (0.043)	64.495 (0.000)	40.620 (0.009)
<i>Panel B: Results for downgrades</i>							
Δ ROA	(-/+)	15.967** (2.05)	-2.913 (-0.33)	1.078 (0.06)	20.849 (1.14)	11.774* (1.40)	-0.188 (-0.02)
Δ CASH	(-/-)	-0.020** (-1.99)	0.002 (0.29)	-0.025* (-1.40)	0.002 (0.20)	-0.018* (-1.64)	0.007 (0.94)
Δ ARD	(+/-)	-0.027* (-1.39)	-0.005 (-0.25)	-0.068** (-1.78)	-0.028 (-0.85)	-0.022 (-0.97)	0.007 (0.32)
Δ LTD	(+/-)	8.078** (2.06)	-5.375 (-1.23)	7.799 (1.24)	0.144 (0.02)	7.507** (1.95)	-0.889 (-0.19)

Δ PPA	(+ / +)	0.046 (0.15)	0.442* (1.35)	-0.177 (0.30)	0.679 (1.17)	-0.066 (-0.19)	0.211 (0.57)
Δ TOV	(- / -)	-0.407 (-0.32)	-0.998 (1.09)	-1.998 (-0.80)	-5.256*** (3.06)	0.155 (0.10)	-1.148 (1.11)
Δ CAPEX	(- / -)	0.459 (0.13)	2.505 (0.76)	8.553 (1.12)	-4.813 (-0.90)	0.998 (0.23)	-1.965 (-0.57)
Δ LOS	(+ / -)	0.023 (0.05)	0.125 (0.49)				
Δ STAFF	(- / +)			-1.654** (-1.97)	1.565* (1.60)		
Δ CAPPROD	(- / +)					-0.012 (-0.30)	0.024 (0.71)
<i>Control variables</i>							
LTAS		-0.290 (-0.84)	-0.679* (-1.80)	-0.313 (-0.61)	-0.660 (-1.11)	-0.220 (-0.52)	-0.801* (-1.85)
TEACH		0.371 (0.53)	1.124 (1.51)	0.359 (0.31)	1.560 (1.22)	0.104 (0.12)	1.249 (1.46)
LOCATION		-0.104 (-0.21)	-0.116 (-0.25)	0.210 (0.26)	1.178 (1.40)	-0.047 (-0.09)	0.254 (0.48)
Model χ^2 (<i>p</i> -value)		68.287 (0.000)	46.181 (0.002)	48.920 (0.001)	34.617 ((0.043)	64.495 (0.000)	40.620 (0.009)

Notes: No revisions are observable for the S&P-rated no-change control group from 1991 to 1995, which is the reference group for estimated coefficients in all models. These hospitals are individually matched to each of the revision observations using the following control dimensions: time (year); ownership type (AHA control code); service classification (AHA service code); urban/rural location (MSA); teaching status (teaching or nonteaching); bond rating level before change; and size (total assets in the year of match). *t*-values are in parentheses.

*, **, and *** indicate significance at $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively, based on one-tailed tests for performance measures and two-tailed tests for control variables.

^aYear-control dummies are not tabulated.

^bFirst differences of levels variables defined in Table 2 are computed annually (i.e., $\Delta = \text{year}_t - \text{year}_{t-1}$).

in anticipation of, or in response to, the revision event. Additional multivariate analysis is conducted to further examine this phenomenon. Specifically, this sensitivity analysis examines elements of ROA to ascertain whether changes in major revenue and expense items explain the profitability effects associated with the revision event. By definition, the profitability measure (ROA) is equivalent to $\text{Margin} \times \text{Turnover}$. In this sensitivity analysis, margin is expressed as excess revenue over expenses (or net income)/total operating revenue. Turnover, as defined earlier, continues to be used in the sensitivity regression. To separate margin into its major constituents, additional financial measures are required.

- **SALEXP** = salary expense/total operating revenue. SALEXP measures a hospital's ability to control labor resources relative to total operating revenue. The first difference (ΔSALEXP) should be less (greater) for upgrades (downgrades) in the pre-revision subperiod. However, managerial responses should result in ΔSALEXP that is greater (less) for upgrades (downgrades).
- **OTHEXP** = (total operating expense–salary, depreciation and interest expenses)/total operating revenue. OTHEXP measures managerial control of other operating expenses relative to total operating revenue. The pre-revision first difference (ΔOTHEXP) should be less (greater) for upgrades (downgrades), but with reversals, it is expected for it to be greater (less) for upgrades (downgrades).
- **OTHREV** = nonpatient revenue/total revenue. OTHREV measures the sum of other operating revenue plus nonoperating revenue (e.g., investment earnings and gift shops) relative to total revenue. This measure reflects managerial efforts to obtain revenue from diversified, nonpatient sources and should be positively associated with credit ratings. Thus the first difference (ΔOTHREV) should be greater (less) for upgrades (downgrades) across both subperiods.

These supplemental measures are incorporated with the turnover measure and control variables, which results in Model 2

$$\begin{aligned} \Delta\text{RATING}_t = & \beta_{0j} + \beta_{1j}\Delta\text{TOV}_{t+m} + \beta_{2j}\Delta\text{SALEXP}_{t+m} + \beta_{3j}\Delta\text{OTHEXP}_{t+m} \\ & + \beta_{4j}\Delta\text{OTHREV}_{t+m} + \beta_{5j}\text{LTAS}_{t+m} + \beta_{6j}\text{TEACH} \\ & + \beta_{7j}\text{LOCATION} + \beta_{(1991-1994)j}\text{YEAR} + \varepsilon_{t+m} \end{aligned} \quad (2)$$

Where, ΔRATING_t is a rating revision for hospital i at time $t = 0$, which is equal to 0, 1, or 2 (upgrade, matched no-change, or downgrade, or $n = 3$

outcomes); and $m = -2, -1, +1, \text{ or } +2$ fiscal years relative to the revision event; and $j = n-1$ coefficients for revision subgroups.

Similar to the nonfinancial regressions, for each revision subgroup the profitability sensitivity sample is rematched, as necessary, to no-change control hospitals using the dimensions previously indicated. In addition, the control variables LTAS, TEACH, LOCATION, and YEAR (not tabulated) are incorporated into the regressions. As Table 6 reveals, all pre- and post-revision models are significant (chi-squares ranging from 16.387 for $t+1$ to 19.640 for $t-1$). At $t-2$, upgrades reflect weak reductions in other operating expenses, along with positive changes in turnover at $t-1$ (consistent with the results presented in Table 4). However, the profitability sensitivity does not explain the ROA decreases for upgrades at $t+1$ observed in the primary regression.

As expected, ΔSALEXP for downgrades is greater than the control subgroup at $t-2$. However, in anticipation of the rating downgrade, salary expense becomes significantly less for downgrades at $t-1$, relative to the no-change group. This supports earlier results (indicated in Table 4) and provides additional evidence of a distress response by hospital managers. Further analyses of the profitability measure for the downgraded group show that the level mean ROA increases 1.83 percentage points, from 1.17 percent ($t-1$) to 3.00 percent ($t+1$). Moreover, salary expense as a percentage of total operating revenue decreases 1.70 percentage points, from 51.3 percent ($t-1$) to 49.6 percent ($t+1$). Thus, improved profitability performance for downgrades largely results from decreased salary expense across the pre- to post-revision intervals. These findings are also consistent with those obtained earlier for the nonfinancial regressions, which reflect decreases in pre-revision quality (ΔSTAFF) at $t-1$.

Even though downgrades also realize significant reductions in other operating expenses (ΔOTHEXP) at $t-1$, nonsignificance at $t+1$ could reflect a shift toward outsourcing of noncore service (labor-related) activities as a cost-saving measure. Therefore, managerial reaction to downgrades focuses on short-term cost reduction and liquidity improvements, partly at the expense of quality. However, responses reveal little impact on measures such as length-of-stay that are essential to maintaining long-term financial solvency.

The sensitivity analysis for upgrades is unable to explain the profitability reversal observed at $t+1$. To the extent that an earnings plateau has been reached, statistically insignificant associations between profitability and the revision event should be observed. It is unlikely that a profitability plateau would result in performance changes that indicate a strong decrease only

Table 6. Logistic Regression Profitability Sensitivity by Year Relative to Revision Event ($t = 0$).

Model 2:^a

$$\Delta\text{RATING}_t = \beta_{0j} + \beta_{1j}\Delta\text{TOV}_{t+m} + \beta_{2j}\Delta\text{SALEXP}_{t+m} + \beta_{3j}\Delta\text{OTHEXP}_{t+m} + \beta_{4j}\Delta\text{OTHREV}_{t+m} \\ + \beta_{5j}\text{LTAS}_{t+m} + \beta_{6j}\text{TEACH} + \beta_{7j}\text{LOCATION} + \beta_{(1991-1994j)}\text{YEAR} + \varepsilon_{t+m}$$

where $\Delta\text{RATING} = 0, 1, \text{ or } 2$ (upgrade, matched no-change or downgrade, or $n = 3$ outcomes) and $m = -2, -1, +1, \text{ or } +2$ fiscal years relative to the revision event, and $j = n-1$ coefficients for revision subgroups

Total $n = 140$: 29 upgrades, 70 matched no-change, 41 downgrades (all regressions)

Profitability Measures ^b	Predicted Signs (Pre/Post)	Upgrades				Predicted Signs (Pre/Post)	Downgrades			
		$t-2$	$t-1$	$t+1$	$t+2$		$t-2$	$t-1$	$t+1$	$t+2$
ΔTOV	(+/+)	-0.657 (-0.86)	1.928* (1.48)	-0.501 (-0.50)	-0.663 (-0.48)	(-/-)	0.803 (1.04)	0.250 (0.24)	-1.520 (-1.84)	-2.090 (-1.91)
ΔSALEXP	(-/+)	-11.259 (-1.05)	-15.649* (-1.48)	6.874 (0.59)	-1.708 (-0.18)	(+/-)	17.114** (1.89)	-19.973*** (-2.35)	-12.366 (-1.22)	-11.699* (-1.36)
ΔOTHEXP	(-/+)	-16.815** (-1.72)	-1.972 (-0.18)	8.213 (0.74)	6.526 (0.66)	(+/-)	12.519* (1.37)	-19.393** (-1.99)	15.874 (1.55)	9.545 (1.13)
ΔOTHREV	(+/+)	9.371 (0.76)	-4.799 (-0.25)	-14.835 (-1.14)	0.591 (0.06)	(-/-)	12.343 (0.85)	15.958 (1.01)	-13.311 (-1.12)	-12.680* (-1.49)

Control variables									
LTAS	0.580*	0.616**	0.531**	0.691**	-0.412	-0.581*	-0.490	-0.546*	
	(1.95)	(2.08)	(1.98)	(2.29)	(-1.30)	(-1.81)	(-1.63)	(-1.69)	
TEACH	-0.998	-0.871	-0.543	-0.826	1.163	1.235	1.002	1.013	
	(-1.10)	(-1.03)	(-0.65)	(-0.97)	(1.41)	(1.48)	(1.24)	(1.18)	
LOCATION	-0.532	-0.603	-0.582	-0.780	-0.139	-0.035	-0.152	-0.296	
	(-0.87)	(-0.98)	(0.94)	(-1.26)	(-0.26)	(-0.06)	(-0.27)	(-0.54)	
Model χ^2	17.241	19.640	16.387	18.915					
(<i>p</i> -value) ^c	(0.069)	(0.033)	(0.089)	(0.041)					

Notes: Δ SALEXP = Salary expense/total operating revenue; Δ OTHEXP = (total operating expenses – salary, depreciation and interest expenses)/total operating revenue; Δ OTHREV = nonpatient revenue/total revenue. No revisions are observable for the S&P-rated no-change control group from 1991 to 1995, which is the reference group for estimated coefficients in all models. These hospitals are individually matched to each of the revision observations using the following control dimensions: time (year); ownership type (AHA control code); service classification (AHA service code); urban/rural location (MSA); teaching status (teaching or nonteaching); bond rating level before change; and size (total assets in the year of match). *t*-values in parentheses.

*, **, and *** indicate significance at $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively, based on one-tailed tests.

^aYear-control dummies are not tabulated.

^bFirst differences are computed on an annual basis (i.e., $\Delta = \text{year}_t - \text{year}_{t-1}$).

^cReported χ^2 and *p*-values are for both upgrade and downgrade subgroups.

one period following upgrade. Such an immediate, negative response would be caused by managerial action around the revision event, rather than reversion to the mean over time.

Further supplemental analysis that incorporates a depreciation measure in the profitability regression indicates that changes in depreciation expense are not significantly associated with upgrades. The mean depreciation expense, as a percentage of total operating revenue, is 5.68 percent at $t-1$, 5.93 percent at $t = 0$ and 5.99 percent at $t+1$, which indicates slight, but not substantial increases in depreciation for upgrades. Similar changes in depreciation are observed for the no-change control group. This slight increase in depreciation expenses would not be due to the use of accelerated depreciation measures since hospitals typically use straight-line depreciation for regulatory and financial reporting purposes. The use of straight-line depreciation for tax-exempt property and Medicare reporting is further explained by [Green and Baker \(1981\)](#) and [Beggan and McNulty \(1991\)](#).

In sum, managers anticipate the downward revision and focus on increasing profitability through short-term cost-reduction efforts, but partly at the loss of quality (i.e., staffing). Managers also prompt improvements to receivables collections within two periods following downgrade. Finally, upgraded hospitals have unfavorable post-revision changes in profitability, which reflects reversals of pre-revision actions. These results for upward revisions are consistent with prior studies in corporate finance (e.g., [Jain & Kini, 1994](#); [Loughran & Ritter, 1997](#)), which find that for-profit firms have incentives to overstate earnings before stock-based transactions, but then reveal post-transaction profitability reversals. Overall, my results support the notion that managers have incentives to change performance measures during the periods immediate to the revision event.

6. SUMMARY AND CONCLUSIONS

I examine managerial behavior in response to a major external event by analyzing responses to the bond rating revision event across pre- to post-revision intervals. In addition to being an important issue to hospital managers and policymakers, this research may help rating analysts and bondholders better understand managerial behavior and organizational responses to widely used rating benchmarks. My findings also enhance our knowledge of the similarities between nonprofit and for-profit organizations and related managerial motivations.

Multinomial logistic regression results for a national sample of nonprofit hospitals indicate that pre-revision changes in profitability, cash, long-term debt, facility age, asset turnover, and capital expenditures are useful to explain revisions from the control group. The relevant performance dimensions identified in this study closely correspond to the seven hospital performance factors established by Zeller et al. (1996) and are included in S&P's not-for-profit hospital ratios and are similar to those cited by McCue et al. (1990) and HCIA, Inc. and Deloitte & Touche, LLP (1995). In addition, Watkins (2000) finds that profitability, capital structure, and inpatient utilization measures are important in explaining hospital bond rating levels.

More importantly, results reveal that downgraded hospital managers initiate improvements to pre-revision profitability, and post-revision liquidity, to signal credit stability. While quality changes are evident 1 year before downgrade, reductions in receivables are not detected until post-revision, which suggests that improving the cash conversion cycle requires more time for managers to implement relative to staff-reduction. Thus managerial efforts to reduce salary and other operating expenses appear to drive the increases in profitability for downgrades. In fact, downgraded hospitals achieve more than a 1.8 percent improvement in return on assets within the $(t-1, t+1)$ interval relative to the revision event.

However, decreases in quality accompany these cost reductions, which could have adverse consequences for patient outcomes and satisfaction. From a financial disclosure perspective, it may be desirable for users to have these nonfinancial information elements routinely available in financial statements. This finding further supports those (e.g., Sherman, 1986; Mensah & Chiang, 1996; Watkins, 2000; Danvers, 2003) who argue for enhanced hospital financial statement disclosure requirements. Timely financial reporting, along with improved disclosure of nonfinancial information such as quality and patient outcomes, could improve the quality of hospital financial disclosure and reduce the effective cost of capital.

Since managers do not favorably change efficiency and capacity cost measures that are necessary to support long-term solvency, short-term cost-reduction responses are not likely to be sufficient to avert future increases in the cost of capital or reduced capital market access. A direct implication of more limited ability to obtain debt financing is that the observed reductions in capital expenditures for downgrades will be perpetuated, which threatens the long-term survivability of affected nonprofit hospitals.

Conversely, sharply decreasing changes in profitability reported only one period following upgrade suggest that managerial opportunism occurs around the revision action. A profitability sensitivity analysis does not

explain managerial actions related to post-upgrade changes in profitability. One possible explanation for the relative deterioration in profitability for upgrades is that pre-revision earnings management actions undergo post-upgrade reversal. Thus, future research that rigorously examines earnings management within the context of bond rating revisions would provide greater insight regarding this phenomenon.

Moreover, the analysis suggests that managers change financial and nonfinancial measures in response to a significant nonregulatory event, which is consistent with quality benchmarking responses identified by Evans et al. (1997). The results are consistent with prior studies that find hospital reactions to regulatory events (e.g., Barniv et al., 2000). Results also support Forgiione (1999) and Eldenburg and Krishnan (2003) such that nonprofit sector managers have strong incentives to concentrate on profitability performance, similar to that of for-profit organizations.

My results are in line with prior corporate studies of for-profit firms (e.g., Jain & Kini, 1994; Loughran & Ritter, 1997), which identify incentives to overstate pre-stock issuance earnings with post-transaction profitability reversals. Moreover, the significance of turnover for bond rating revision decisions is consistent with early corporate bankruptcy prediction studies, such as Altman (1968), where a main predictive driver was asset turnover.

This research also increases analysts' knowledge of how organizations respond to their rating actions. While managers at downgraded hospitals initiate changes to signal short-term credit stability, analysts and bondholders are cautioned to closely monitor the post-revision performance of recently upgraded issuers. In particular, they should note that relatively strong pre-upgrade performance could merely be transitory, or be caused by managerial actions that are not sustainable, and thus do not reflect analyst performance expectations.

Certain limitations restrict further inferences from this research. First, Medicare began a 10-year transition from cost-based to prospective-payment-based system of capital cost reimbursement effective 1991. Although my model captures some of the salient factors (e.g., location, asset age, teaching, and size), a possible increase in unexplained variance stemming from this regulatory change biases against finding hypothesized results. The results might have been stronger were it possible to more finely control for the prospective payment transition. In addition, my study does not directly control for Medicare and Medicaid percentages or disproportionate share payments. The use of indirect proxies also biases against finding the hypothesized results. Finally, I do not explicitly control

for hospital chain membership, which could affect financial resources available to the hospital and thus bond ratings.

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DID BOND PRICES REFLECT ACCRUAL BASIS APPROXIMATIONS BEFORE GASB STATEMENT NO. 34?

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ABSTRACT

Using information reported in pre-Statement No. 34 financial reports, we employ bond pricing regression models to test whether approximations of accrual information are incrementally associated with new issue borrowing costs after controlling for the effects of traditional modified accrual, fund-based information. Our results suggest that even before GASB Statement No. 34 was issued, bond analysts utilized government-wide economic resources measures to determine interest costs on new municipal bond issues.

INTRODUCTION

In June 1999, the Governmental Accounting Standards Board (GASB) issued Statement No. 34: *Basic Financial Statements – and Management’s*

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Discussion and Analysis – for State and Local Governments that vastly altered the reporting requirements for state and local governments. The impetus for the change was the Board’s belief that financial statements should provide users with additional entity-wide information that could be used to better assess a government’s financial condition. To that end, GASB required that financial information for government activities be reported not only on a modified accrual basis (with a focus on sources and uses of funds) but also on the accrual basis. By using accrual accounting, governments are able to provide information from an economic perspective; wherein the government is considered as a single economic unit composed of both current and non-current assets and liabilities.

The implementation of the reporting model was controversial, with governmental accounting professionals arguing that accrual information would not provide sufficient value to financial statement users to justify its high cost to preparers. While accrual information may indeed provide more complete, objective, and comparable information, particularly about the long-term effects of financial policy, little empirical evidence exists that such information is useful. Our finding that accrual information has incremental value over traditional modified accrual information helps address the question of whether accrual information is useful. Interestingly, our results are based on data from the period *prior* to GASB Statement No. 34, indicating that accrual information was already being impounded by users. Therefore, the question raised by our research is whether the more precise information provided by Statement No. 34 increases the usefulness of accrual information.

We assess whether net interest costs of new bond issues reflect accrual information in addition to the modified accrual information reported in governmental fund financial statements in periods prior to GASB Statement No. 34 implementation. Our results differ from [Plummer, Hutchison, and Patton \(2007\)](#), who found that it is the balance sheet information that has incremental value. We find that accrual *operating* information has incremental value relative to modified accrual operating information. Neither modified accrual nor accrual *balance sheet* information appears to be significantly relevant in determining net interest costs for new bond issues.

The next section provides theory and develops the hypothesis. The Design and Sample Selection section presents the research design and describes the sample. A results section is then presented, followed by a section containing a discussion and concluding remarks.

THEORY AND HYPOTHESIS DEVELOPMENT

In issuing Statement No. 34, GASB (1999) argued that users need financial information prepared using both the modified accrual and the accrual basis of accounting. The modified accrual basis of accounting, long used by governments, provides users with information concerning compliance and spending control. GASB identifies modified accrual accounting as helping users assess the current financial position of the entity and whether the entity has operated within its means – fiscal accountability. However, the modified accrual basis of accounting only recognizes revenue when it is available for current period spending and reports costs incurred as expenditures. Under GASB Statement No. 34, accrual accounting recognizes revenues in the reporting period in which an exchange transaction occurs or, in the case of non-exchange transactions, such as taxes, when GASB specified non-exchange requirements are met. The recognition criteria do not require that the revenue be available for current period spending. Under accrual accounting, costs are reported as expenses in the reporting period in which the costs are used to provide goods or services, as opposed to the period in which the costs are incurred. Additionally, under GASB Statement No. 34, accrual accounting requires reporting related to non-current assets and liabilities that was not previously required; for example, recording of infrastructure and the depreciation of capital assets.

GASB Statement No. 34 asserts that the accrual basis of accounting helps users understand the long-term effect that current decisions have on future performance, and thus the ability to meet future obligations. Based on the GASB's assertion and prior corporate research we expect, even in the presence of modified accrual information, that accrual information will be relevant in pricing municipal bonds. Furthermore, while precise accrual measures were not available before GASB Statement No. 34, a number of accrual approximations could be made in the pre-Statement No. 34 period. If accrual information is of value in pricing municipal bonds, we expect that such accrual approximations are incorporated into bond prices. Therefore, we hypothesize that:

In the pre-GASB Statement No. 34 period, accrual accounting information is associated with net interest costs on new bond issues, after controlling for the effects of modified accrual information.

Further, we expect a directional association between accrual financial information and net interest cost, specifically that favorable accrual

information is associated with lower net interest cost while unfavorable information is associated with higher cost.

Since governments reported using the modified accrual basis before GASB Statement No. 34, and continue to use modified accrual subsequent to GASB Statement No. 34, the question of interest is whether accrual information provides value to users in the presence of modified accrual information. Indeed, it is the GASB's belief that accrual information supplements modified accrual information, not supplants the information. Prior municipal bond market research (see reviews by Ingram, Raman, & Wilson, 1987; Reck, Wilson, Gotlob, & Lawrence, 2004) provides evidence on the usefulness of modified accrual accounting information in pricing new issues. Therefore, relying on the GASB's belief and prior research, we anticipate that financial accounting measures based on modified accrual accounting will also be significant to the market.

DESIGN AND SAMPLE SELECTION

Empirical Models

We develop regression models in which interest cost (IntCost) is regressed on financial and control variables that represent bond-specific attributes and market factors known to affect interest costs on municipal bonds. Interest cost is measured as the net, or true, interest cost aggregated across the various maturities of each serial bond issue in our sample of municipal general obligation bonds. Net interest cost has been used for decades in the primary market for municipal bonds as a measure for evaluating competing bids from underwriters. It is calculated by averaging the interest cost across all maturities of bonds in a serial issue, weighted by the total dollar amount maturing in each year. For approximately 36 percent of bond issues in our sample for which true interest cost is not reported, we control for differences by including an indicator control variable in the model.

Table 1 describes the variables used in the regression models. In addition to TIC_Dum, we include three other bond-specific variables (AvgMaturity, Insured, and LowRating) to control for their effects on interest costs. Bonds with higher average term to maturity (AvgMaturity) are more susceptible to both interest rate and default risk and thus require higher interest rates. Many governments purchase bond insurance to reduce borrowing costs. Insured bonds (Insured) reflect the bond rating of the insurer, rather than the government. Bonds with lower bond ratings demand higher yields to

Table 1. Description of the Variables Used to Test the Association between Accrual Accounting Information and Bond Interest Costs.

	Description
<i>Dependent variable</i>	
IntCost	Net interest cost (or true interest cost, if available) on a new bond issue. It is calculated as the average net interest cost across all maturities of the serial bond issue, weighted by the dollar amount maturing each year
<i>Market and bond attribute control variables</i>	
TIC_Dum	Indicator variable having a value of one if the dependent variable represents true interest cost; zero otherwise
BBIndex	Bond Buyer 20-Year Bond Average Yield Index for the week of the new issue (Source: <i>The Bond Buyer</i>)
AvgMaturity	Weighted average term to maturity for each issue of serial bonds
Insured	Indicator variable having a value of one if the new bond issue was insured; zero otherwise
LowRating	Indicator variable having a value of one if the issuer's Moody's bond rating has a speculative grade of Baa1 or below
<i>Financial test variables^a</i>	
<i>Fund level modified accrual balance sheet measures</i>	
GFBal/Rev	Unrestricted fund balance of the general fund, divided by general fund revenues
OperFB/Rev	Aggregate unrestricted fund balances of the general fund, special revenue funds, and debt service funds, divided by the aggregate revenues of those funds
AllGovFB/Rev	Aggregate unrestricted fund balances of all governmental fund types, divided by aggregate governmental funds revenues
<i>Government-wide accrual balance sheet measure</i>	
NetAssets/Rev	Net assets for governmental activities, deflated by governmental activities revenues, measured by adjusting modified accrual information to a GASB Statement No. 34 economic resources/accrual basis (see Fig. 1 for details)
<i>Fund level modified accrual operating statement measures</i>	
GFRatio	General fund revenues divided by general fund expenditures
OpFRatio	Aggregate revenues of the general fund, special revenue funds, and debt services funds divided by aggregate expenditures of those funds
AllFRatio	Aggregate revenues of all governmental fund types divided by aggregate expenditures of those fund types
<i>Government-wide accrual operating statement measure</i>	
GActRatio	Governmental activities revenues divided by governmental activities expenses, measured by adjusting modified accrual information to a GASB Statement No. 34 economic resources/accrual basis (see Fig. 1 for details)

^aSome financial information was obtained from the Government Finance Officers Association Financial Indicators Database. The remainder was collected from official offering statements that accompanied each bond issue.

compensate for their higher assessed default risk. To control for this effect, we include an indicator variable, *LowRating*, to indicate if a bond issue has a speculative Moody's grade of Baa1 or less. Finally, interest costs on new bond issues tend to rise and fall with changes in market interest rates for municipal bonds. Thus, we include the Bond Buyer 20-Year Bond Average Yield Index (*BBIndex*) for the same week as each new bond issue in our sample.

The modified accrual basis of accounting is used for reporting governmental funds – general fund (the primary governmental fund), special revenue funds, debt service funds, and capital projects funds.¹ All but the capital projects fund are considered operating type funds. *Wilson (1990)* summarizes prior research on the impact of varying levels of aggregation of financial information on bond decisions. His findings suggest that many analysts find aggregated operating fund information helpful, but express concerns about obscuring general fund information. A minority of Wilson's respondents indicated that fully aggregated information – both operating and capital information combined – would be useful in making bond investment decisions. Because the relative usefulness of different aggregation levels has not been clearly established by prior research, we test the incremental value relevance of accrual governmental accounting information relative to traditional modified accrual information using three alternative levels of aggregation for the modified accrual information: (1) general fund information only, (2) all governmental operating funds (general fund and aggregate of all special revenue and debt service funds), and (3) all governmental funds (i.e., governmental operating funds plus capital projects funds). For each of these three alternative models, balance sheet ratios and operating statement ratios reflecting both modified and accrual bases of accounting are included as test variables.²

$$\begin{aligned} \text{IntCost} = & \alpha_0 + \beta_1 \text{TIC_Dum} + \beta_2 \text{BBIndex} + \beta_3 \text{AvgMaturity} \\ & + \beta_4 \text{Insured} + \beta_5 \text{LowRating} \\ & + \gamma_6 \text{GFBal/Rev} + \gamma_7 \text{NetAssets/Rev} \\ & + \gamma_8 \text{GFRatio} + \gamma_9 \text{GActRatio} + \mu \end{aligned} \quad (1)$$

$$\begin{aligned} \text{IntCost} = & \alpha_0 + \beta_1 \text{TIC_Dum} + \beta_2 \text{BBIndex} + \beta_3 \text{AvgMaturity} \\ & + \beta_4 \text{Insured} + \beta_5 \text{LowRating} \\ & + \gamma_6 \text{OpFB/Rev} + \gamma_7 \text{NetAssets/Rev} \\ & + \gamma_8 \text{OpFRatio} + \gamma_9 \text{GActRatio} + \mu \end{aligned} \quad (2)$$

$$\begin{aligned}
 \text{IntCost} = & \alpha_0 + \beta_1 \text{TIC_Dum} + \beta_2 \text{BBIndex} + \beta_3 \text{AvgMaturity} \\
 & + \beta_4 \text{Insured} + \beta_5 \text{LowRating} \\
 & + \gamma_6 \text{AllGovFB/Rev} + \gamma_7 \text{NetAssets/Rev} \\
 & + \gamma_8 \text{AllFRatio} + \gamma_9 \text{GActRatio} + \mu
 \end{aligned} \tag{3}$$

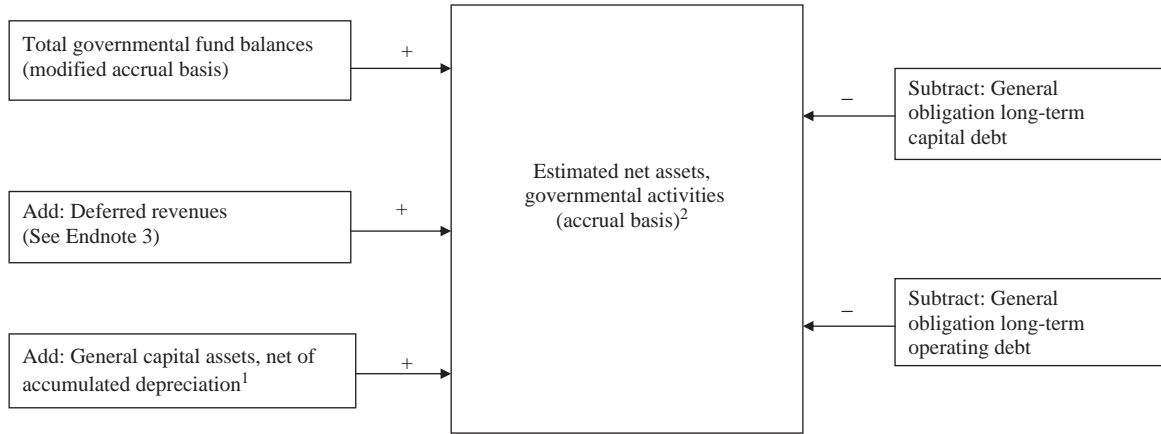
All variables are described in Table 1. In these models, the variables with β coefficients are bond-specific and market control variables and those with γ coefficients are test variables. The ordinary least squares error term in each model is μ . Variables corresponding to coefficients γ_6 and γ_7 represent modified and accrual balance sheet ratios, respectively. Variables corresponding to coefficients γ_8 and γ_9 represent modified and accrual operating statement ratios, respectively. If coefficients γ_7 and γ_9 differ significantly from zero, the hypothesis that accrual information is incrementally relevant in pricing municipal bonds will be supported.

Sample

Our sample consists of 72 general obligation bond issues made by 42 cities during 1996–1998. The sample represents cities for which bond issue data were available from the Thompson Municipal Data Services database and for which all required financial data were provided by either the Government Finance Officers Association (GFOA) Financial Indicators Database or from official offering statements obtained directly from the issuing governments. Cities less than 25,000 in population are excluded from the sample as bond data are unavailable for these cities. Cities with more than 1 million are also excluded. Although only 72 observations are used in the study, these issuers are located in 22 different states, representing varying geographic regions of the United States.

The data for the dependent variable and the control variables were obtained from the Thompson Municipal TM3 Database, a subscription service of the Thompson Municipal Group. Financial test variables were obtained primarily from the GFOA's annual Financial Indicators Databases for the years 1994–1998. Data needed to calculate the values of the economic resources test variables NetAssets/Rev and GActRatio were obtained from both the GFOA databases and official offering statements obtained from the issuers. The components used to estimate the accrual test variables NetAssets/Rev and GActRatio are shown on Fig. 1.³ Since before the implementation of GASB Statement No. 34 governments did not report

Panel A: Balance Sheet Measure (Net Assets/Rev)



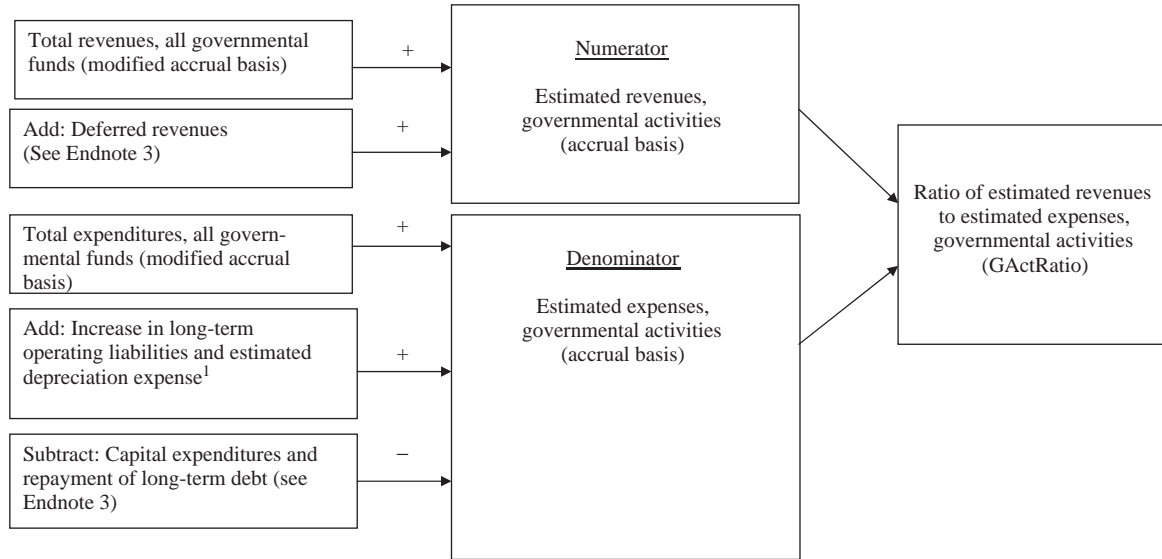
Notes:

¹ Accumulated depreciation on general capital assets assumes that the ratio of net fixed assets to total fixed assets of the proprietary funds (PROPRATIO) of the same governments is a reasonable estimate of net general capital assets to total general capital assets. General capital assets, net of accumulated depreciation, is then estimated as (total general capital net assets)*(1-PROPRATIO).

² The estimate of governmental activities net assets, as calculated above, is deflated by total governmental activities revenue, defined as aggregate revenues plus deferred revenues of all governmental fund types.

Fig. 1. A Description of How the Accrual Measures Used in Models 1-3 Were Estimated

Panel B: Operating Statement Measure (GActRatio)



Note:

¹ The estimation of depreciation expense on general capital assets assumes that the ratio of depreciation expense to net fixed assets of the proprietary funds is a reasonable estimate of the same ratio for general capital assets (i.e., those applicable to government-wide governmental activities). Depreciation expense on general capital assets is then estimated as net general capital net assets multiplied by the ratio of proprietary fund depreciation expense to net proprietary funds fixed assets. Note that issuance of long-term capital debt is not added here since such issuances are reported as other financing sources whereas repayments are reported as expenditures.

Fig. 1. (Continued)

depreciation on their general capital assets, we estimate depreciation for the government-wide operating results variable (GActRatio) by multiplying the book value of governmental assets by a depreciation ratio derived from depreciable proprietary fund assets, assuming that the ratio would be a reasonable approximation for depreciable governmental activity assets.

RESULTS

Descriptive Statistics

Table 2, Panel A, provides descriptive statistics for all variables used in the regressions. The Bond Buyer 20-Year Bond Average Yield Index of 5.348 percent is somewhat higher than the average interest cost for bonds in our sample, primarily because the Bond Buyer's index is calculated for bonds of longer average maturity. The average maturity for bonds in our sample is slightly more than 10 years, ranging from 3 to 18.6 years. Over a third of the bonds in our sample are insured, automatically conferring a Moody's Aaa bond rating for those bonds. Reflecting the favorable national economy during the late 1990s, only 1.4 percent of our sample has a bond rating below an A rating, a level considered to be somewhat speculative, though still an investment grade rating.

The balance sheet test variables also reflect the prevailing favorable financial conditions of the late 1990s.⁴ Significantly, not a single city had a general fund balance less than the five percent that is usually regarded as a "red flag" to credit analysts.

Operating statement measures reflect similarly positive financial results. Revenues exceed expenditures in the general fund by an average 4.8 percent (see variable GFRatio) and total operating revenues exceed total operating expenditures by 2.8 percent (OpFRatio). When deferred revenues are included, total governmental revenues measured on the accrual basis, exceed total governmental expenses, including those for pensions and estimated depreciation expense, by 31.2 percent (GActRatio).

Table 2, Panel B, provides descriptive statistics for the various component measures used to estimate the two government-wide test variables NetAssets/Rev and GActRatio. As shown, deferred revenues, repayment of debt principal, and estimated depreciation expense are relatively minor adjustments to governmental fund revenues and expenditures in estimating the two government-wide test variables. Finally, Table 3 presents bivariate correlations for all continuous variables used in the regression.

Table 2. Descriptive Statistics for a Sample of 72 City Governments Issuing General Obligation Bonds between 1996 and 1998.

Panel A: Variables ^a Used in the Tests of the Association of Accrual Accounting Information with Bond Interest Costs				
Variable Name	Mean	Standard deviation	Minimum	Maximum
<i>Dependent variable</i>				
IntCost	4.817	0.419	3.818	5.713
<i>Control variables</i>				
TIC_Dum (0:1)	0.639	0.484	0	1
BBIndex	5.348	0.326	4.960	6.06
AvgMaturity	10.235	3.179	3.000	18.625
Insured (0:1)	0.375	0.488	0	1
LowRating (0:1)	0.014	0.499	0	1
<i>Test variables</i>				
Fund level modified accrual balance sheet measures				
GFBal/Rev	0.285	0.164	0.075	0.873
OpFB/Rev	0.375	0.217	0.102	1.194
AllGovFB/Rev	0.555	0.250	0.176	1.462
Government-wide accrual balance sheet measure				
NetAssets/Rev	0.281	0.467	-0.642	1.272
Fund level modified accrual operating statement measures				
GFRatio	1.048	0.188	0.744	1.714
OpFRatio	1.028	0.127	0.772	1.530
AllFRatio	0.936	0.129	0.722	1.616
Government-wide accrual operating statement measure				
GActRatio	1.312	0.342	0.812	2.701
Panel B: Components of the Variables Reported in Panel A. The Components Are Calculated by the Summing the Related Balances of All Governmental Funds (Amounts in millions)				
Component measure	Mean	Standard deviation	Minimum	Maximum
Total fund balances	\$58.968	\$66.488	\$5.117	\$303.140
Total general long-term debt	118.624	159.567	1.486	603.719
Deferred revenue	15.352	41.085	0.000	287.201
General fixed assets, net of estimated accumulated depreciation	62.324	81.360	4.237	382.557
Total governmental fund revenues	125.866	161.739	17.838	786.140
Total governmental fund expenditures	139.221	190.647	18.613	1003.166
Change in general long-term debt	0.251	2.144	-4.880	9.579

Table 2. (Continued)

Panel B: Components of the Variables Reported in Panel A. The Components Are Calculated by the Summing the Related Balances of All Governmental Funds (Amounts in millions)

Component measure	Mean	Standard deviation	Minimum	Maximum
Repayment of debt principal	9.618	19.818	0.177	140.456
Capital expenditures	21.924	51.387	0.000	410.089
Estimated depreciation expense, general capital assets	5.118	16.574	0.147	133.201

^aVariable definitions are provided in Table 1. See Fig. 1 for how NetAssets/Rev and GActRatio are calculated.

Regression Results

We use regression analysis for three alternative models, each one providing a test of the association of financial test variables measured with an economic resources focus and accrual basis of accounting (hereinafter referred to as accrual accounting), after controlling for the contribution of similar financial ratios measured with a current financial resources focus and modified accrual basis of accounting (hereinafter referred to as modified accrual). Each model contains a balance sheet ratio and an operating statement ratio. Both ratios are computed using the accrual and modified accrual bases, resulting in four test variables. The alternative models reflect different levels of aggregation of the financial information used to calculate the modified accrual ratios; that is: (1) general fund information only, (2) total of governmental operating funds, and (3) total of all governmental funds, both operating and capital.

Regression results appear on Table 4. In each model the government-wide (accrual) operating statement ratio (GActRatio) is significantly associated with interest cost, as is the corresponding modified accrual operating statement ratio. The governmental operating funds model (model 2) indicates GActRatio is only weakly significant (t -statistic = -1.40 ; $p < 0.10$), whereas it is significant at the 0.05 level (t -statistic = -2.17) in the general fund only model (model 1) and at the 0.01 level (t -statistic = -2.60) in the all governmental funds model (model 3). In contrast, none of the balance sheet ratios are significantly associated with interest costs for the new issues in our sample.⁵

Table 3. Bivariate Correlations between All Continuous Variables^a Defined on Table 1 and Used in the Models Reported on Tables 4 and 5 ($n = 72$).

Variable Name	IntCost	BBIndex	AvgMaturity	GFBal/Rev	OpFB/Rev	AllGovFB/Rev	NetAssets/Rev	GFRatio	OpFRatio	AllFRatio	GActRatio
IntCost	1.000										
BBIndex	.745	1.000									
AvgMaturity	.534	.025	1.000								
GFBal/Rev	-.118	-.018	-.069	1.000							
OpFB/Rev	-.148	.037	-.207	.797	1.000						
AllGovFB/Rev	.001	.027	-.110	.658	.808	1.000					
NetAssets/Rev	-.193	-.169	-.062	.435	.334	.336	1.000				
GFRatio	-.325	-.271	.046	.091	-.071	-.241	.163	1.000			
OpFRatio	-.286	-.198	.046	.277	.136	.016	.227	.651	1.000		
AllFRatio	-.256	-.202	.116	.275	.093	.048	.288	.664	.855	1.000	
GActRatio	-.249	.037	-.318	.302	.610	.489	.130	.191	.293	.182	1.000

Note: Pairwise correlations greater than 0.24 are significant at the 0.05 probability level (two-tailed test).

^aVariable definitions are provided in Table 1.

Table 4. The Results of Regressing Interest Cost on Government-Wide Accrual Accounting Information While Controlling for Modified Accrual Accounting Information and Characteristics of the Bond Issue, for a Sample of 72 Municipal Bond Issues.

	Compared with General Fund Only (Model 1)		Compared with Governmental Operating Funds (Model 2)		Compared with All Governmental Funds (Model 3)	
	Coefficient	<i>t</i> -value	Coefficient	<i>t</i> -value	Coefficient	<i>t</i> -value
Intercept	-0.200	-0.55	-0.325	-0.84	-0.282	-0.77
<i>Control variables</i>						
TIC_Dum	0.109	2.85***	0.099	2.47***	0.096	2.48***
BBIndex	0.893	15.33***	0.913	15.22***	0.904	15.68***
AvgMaturity	0.064	10.32***	0.065	9.73***	0.066	10.14***
Insured	0.030	0.73	0.022	0.52	0.026	0.64
LowRating	0.371	2.22**	0.338	1.79**	0.226	1.25
<i>Financial test variables</i>						
Fund level modified accrual balance sheet variables						
GFBal/Rev	-0.129	-0.96				
OpFB/Rev			-0.044	-0.36		
AllGovFB/Rev					0.161	1.70
Accrual balance sheet variable						
NetAssets/Rev	0.018	0.41	0.004	0.10	-0.015	-0.33
Fund level modified accrual operating statement variables						
GFRatio	-0.289	-2.78***				
OpFRatio			-0.317	-1.77**		
AllFRatio					-0.358	-2.18**
Accrual operating statement variable						
GActRatio	-0.133	-2.17**	-0.109	-1.40*	-0.177	-2.60***
<i>Model statistics</i>						
Model <i>F</i> -value	53.32***		48.34***		52.38***	
Adjusted <i>R</i> ²	0.869		0.857		0.867	

Note: Variable definitions are provided in Table 1.

* $p < .10$ level; ** $p < .05$; *** $p < .01$ level.

Sensitivity Tests

We conducted appropriate diagnostics tests as part of the regression analysis. In addition to analysis of the bivariate correlations presented in Table 3, a review of variance inflation factors revealed they were consistently well below 2.0 for all regression variables, indicating no significant problems

with multicollinearity. In addition, White (1980) tests revealed no instances of significant heteroskedasticity. Only one observation was deemed to be a possible outlier (having a studentized range greater than 3.0). Dropping that observation resulted in even stronger associations than those reported in Table 4 for the operating ratio test variables.

To determine whether the results are sensitive to our sample or that a relatively few observations might be driving the results, we ran regressions on 25 subsamples for which 10 percent of the observations were randomly omitted. Results showing the averages of the 25 subsample regressions are presented in Table 5. The results are similar to those reported for the main sample in Table 4. For the general fund only model (column 1), GFRatio was significant ($\alpha = 0.05$) in 24 of the 25 models run, while GActRatio was significant in 20 of the 25 models. Of the balance sheet variables, only one subsample indicated any significant ($\alpha = 0.05$) balance sheet variables. The results for the governmental operating fund models (column 2) were not as strong, with 12 of the 25 models yielding a significant ($\alpha = 0.05$) OpFRatio and 3 yielding a significant GActRatio. None of the balance sheet variables were significant in the 25 model runs. For all governmental funds (column 3), AllFRatio was significant ($\alpha = 0.05$) in 23 of the 25 model runs, and GActRatio was significant in all 25 runs. AllGovFB/Rev was significant in 10 of the 25 runs, but NetAssets/Rev was not significant in any of the runs.

DISCUSSION

We examine whether borrowing costs of general obligation municipal bonds reflect information about the economic resources of the municipality as a whole on an accrual basis, in addition to traditional financial information about current financial resources on the modified accrual basis. Evidence that approximations of accrual, economic resources financial information were reflected in borrowing costs before issuance of GASB Statement No. 34 would be consistent with the GASB's conclusions that financial statement users need information on *all* assets and liabilities of the government as a whole, not just levels and flows of *current* financial resources assigned to particular funds.

Approximations of accrual balance sheet and operating statement ratios are included in a regression model along with ratios of modified accrual balance sheet and operating statement measures. Three alternative regression models are estimated, corresponding to alternative levels of aggregation

Table 5. Average Regression Results from 25 Random Subsamples that Regressed Interest Cost of New Municipal Bond Issues on Government-Wide Accrual Accounting Information While Controlling for Modified Accrual Accounting Information and Characteristics of the Bond Issue ($n = 65$).

	Compared with General Fund Only (Model 1)		Compared with Governmental Operating Funds (Model 2)		Compared with All Governmental Funds (Model 3)	
	Coefficient	<i>t</i> -value	Coefficient	<i>t</i> -value	Coefficient	<i>t</i> -value
Intercept	-0.226	-0.59	-0.370	-0.91	-0.303	-0.80
<i>Control variables</i>						
TIC_Dum	0.109	2.69***	0.099	2.33**	0.096	2.36**
BBIndex	0.896	14.50***	0.918	14.50***	0.907	14.95***
AvgMaturity	0.066	9.90***	0.066	9.35***	0.067	9.77***
Insured	0.026	0.61	0.020	0.46	0.023	0.56
LowRating	0.355	2.10**	0.329	1.70**	0.208	1.18
<i>Financial test variables</i>						
Fund level modified accrual balance sheet variables						
GFBal/Rev	-0.127	-0.90				
OpFB/Rev			-0.047	-0.23		
AllGovFB/Rev					0.166	1.65
Accrual balance sheet variable						
NetAssets/Rev	0.019	0.42	0.006	0.13	-0.012	-0.27
Fund level modified accrual operating statement variables						
GFRatio	-0.283	-2.54***				
OpFRatio			-0.299	-1.56*		
AllFRatio					-0.363	-2.12**
Accrual operating statement variable						
GActRatio	-0.137	-2.08**	-0.115	-1.38*	-0.179	-2.49***
<i>Model statistics</i>						
Model <i>F</i> -value	49.29***		45.08***		48.86***	
Adjusted R^2	.870		.859		.869	

Note: Variable definitions are provided on Table 1.

* $p < .10$ level; ** $p < .05$; *** $p < .01$ level.

of the modified accrual information: (1) general fund only, (2) all governmental operating funds combined, and (3) all governmental funds combined (both operating and capital projects).

In all three regression models the accrual operating statement measure is significantly associated with interest costs on bonds after controlling for

the modified accrual operating statement measures. Our results indicate that regardless of level of fund aggregation, the aggregate accrual operating information is significantly associated with new issue prices. The finding that highly aggregated approximations of accrual information are useful in the pre-GASB Statement No. 34 periods is of interest given that more precise aggregated accrual data are reported under the GASB Statement No. 34 reporting model. In each model, the modified accrual measures are also significantly associated with bond interest costs. However, none of the balance sheet measures are associated with bond interest costs.

The key point, however, is that even before such information was explicitly required by GASB Statement No. 34, bond analysts appeared to estimate and incorporate estimates of government-wide economic resources measures in their bond pricing decisions. If, as our results imply, users were impounding estimates of accrual information before the issuance of GASB Statement No. 34, the question becomes whether more precise accrual measures offered by Statement No. 34 further add to the usefulness of financial information in pricing of bonds.

The results of [Plummer et al. \(2007\)](#) indicate that GASB Statement No. 34 information is useful; however, they do not control for whether the information is more useful than accrual estimations that may have been made before the implementation of Statement No. 34. Thus, they are unable to answer the question posed by our research – does Statement No. 34 further add to the usefulness of financial information? Additionally, the Plummer et al. study finds balance sheet accrual information to be useful, not operating statement accrual information.

It should be pointed out that in addition to the use of accrual measures taken from pre- versus post-Statement No. 34 periods, there are a number of other factors that are different between our study and the Plummer et al. study that may make it difficult to compare the results of the two studies. Among these factors are different time periods, different samples (municipalities versus school districts), and different credit users. Rather than using bond credit ratings ([Plummer et al., 2007](#)), we use the net interest costs of new bond issues. In general, a yield-based measure is preferable to a categorical measure since it provides a continuous measure of usefulness within bond rating categories.

The results of our study provide benchmark knowledge about the importance of accrual basis information to financial statement users before GASB Statement No. 34. Results from our study, combined with somewhat conflicting results between our study and the Plummer et al. study indicate that as additional data become available further research

is needed to more completely understand the impact of GASB Statement No. 34.

NOTES

1. With the implementation of GASB Statement No. 34 an additional governmental fund type was created – permanent funds.

2. The balance sheet and operating statement test variables used in our study are similar to those used in many of the governmental capital markets studies reviewed in Ingram et al. (1987) and Reck et al. (2004). There is no extant theory that predicts which financial variables would be preferred. The test variables selected represent both point in time (balance sheet) measures and change or flow (operating statement) measures. Moreover, they permit comparable construction using both current financial resources/modified accrual and economic resources/accrual measures.

3. Deferred revenue used in calculating both NetAssets/Rev and GActRatio is a somewhat noisy measure as is the estimated depreciation expense. During the period studied, few governments provided sufficient information to determine the sources of deferred revenues (e.g., how much related to property taxes, intergovernmental grants, special assessments, and other sources). In the case of property taxes, we were unable to determine whether the deferral would have applied to both governmental funds and the government-wide level, since deferral occurs at both levels if tax receivables are recorded before the year for which the taxes are levied. In the case of special assessments, deferrals generally occur in the governmental funds but not at the government-wide level. Because of the complexity of how deferred revenues potentially affect our calculations of NetAssets/Rev and GActRatio, we test both a worst-case measure that assumes all deferred revenues originate in the current year (as reported in Tables 4 and 5) and an alternative measure assuming no change in deferred revenues during the year. In addition, the alternative tests eliminate the estimated depreciation expense from the calculation of GActRatio. As reported in Endnote 5, the overall results are minimally affected by the alternative measures. This is not surprising, since deferred revenues and estimated depreciation expense only amount to 12.2 and 4.1 percent of total governmental revenues, respectively.

4. For example, Reck and Wilson (2006) report that for their sample of 595 new issues that occurred during the relatively weak economy of the 1980s, unreserved general fund balances averaged only 13.6 percent of annual revenues compared with 20.7 percent during the 1990s when the national and state economies were much stronger. Operating surpluses (excess of general fund revenues over general fund expenditures deflated by general fund revenues) were seven times larger in the 1990s than in the 1980s (8.4 percent compared to 1.2 percent).

5. In addition to the comparative accrual, modified accrual models reported in Table 4, we also tested models that include only the modified accrual ratios. The results of those regressions reflect generally strong negative associations between the ratio of revenues to expenditures of each model (GFRatio, OpFRatio and AllFRatio) and interest costs ($p < .01$), but insignificant associations for the balance sheet measures (GFBal/Rev, OpFB/Rev, and AllGovFB/Rev). Also, we tested the

models described in Tables 4 and 5 with the somewhat noisy component measures for deferred revenues and capital use charge omitted from the calculation of the government-wide test measures NetAssets/Rev and GActRatio. The overall results are substantially the same as reported. In model 2, the significance level for GActRatio increased from .10 to the .05 level. In model 3, the significance level for this variable decreased from .01 to just below the .05 level. The results for model 1 were unchanged.

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THE ASSOCIATION OF ACCOUNTING MEASURES AND MUNICIPAL BOND INTEREST COST: A TEST OF GASB 14

Barbara A. Chaney

ABSTRACT

Using a sample of general obligation municipal bonds issued between 1995 and 1997, I test the relation between accounting measures and bond yields for the purpose of determining whether component unit information is considered in the pricing of bonds. In so doing, I test the relative usefulness of different entity definitions. I find that municipal bond yields are most closely associated with financial measures of the government combined with all of its component units. My results provide support for the provisions of GASB Statement 14 requiring inclusion of component unit information in governmental financial reports. In addition, I find that the bond market differentially weights the accounting information of component units included under different GASB 14 criteria, suggesting that the disaggregated reporting format allowed by GASB 14 is useful for collecting and processing information.

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1. INTRODUCTION

Identification of the reporting entity is one of the most fundamental reporting decisions. It is an issue shared by business, private not-for-profit, and public-sector organizations. Presently, business enterprises follow the guidelines of FASB Statement 94, *Consolidation of All Majority-Owned Subsidiaries* (FASB, 1987), which requires consolidation of all subsidiaries in which the reporting entity owns a (nontemporary) majority interest.¹ Within the public sector, guidance is provided by GASB Statement 14, *The Financial Reporting Entity* (GASB, 1991). The provisions of GASB Statement 14 differ from those governing private-sector entities in two respects. First, the definition of the reporting entity is based primarily on the concept of elected officials' accountability for quasi-government organizations rather than control via ownership. The result is that the financial report may include organizations (i.e., component units) that are legally separate, but financially or administratively linked to a state or local government. Second, most component units are included in the financial report through discrete presentation rather than consolidation.

Discrete presentation entails reporting financial data in one or more columns separate from the financial data of the primary government. It allows a user to either include or exclude component units' information when evaluating a government's financial condition. From a research perspective, discrete presentation permits testing the relative usefulness of alternative entity definitions through observing which aggregations of the financial information are most closely associated with economic decisions. In this respect, my study is similar to studies of geographic or segment disclosures.

In the analysis that follows, I use the opportunity provided by discrete presentation to determine whether component unit financial information is considered in pricing general obligation (GO) bonds issued by municipal governments. In so doing, I provide evidence useful in assessing the requirements of GASB Statement 14 for inclusion and discrete presentation of component unit financial information. I calculate financial condition measures for the general fund alone, as well as for aggregations of the government with its component units, and use them as explanatory variables in a municipal bond pricing model. My test of the relative usefulness of different entity definitions to the municipal bond market is based on a comparison of the explanatory power of the model using financial measures derived from varying combinations of the primary government and its component units. I find that municipal bond yields are most strongly

associated with financial measures of the government combined with all its component units. This supports the definition of the governmental financial reporting entity provided by GASB 14.

Additionally, I find that accounting measures derived from control-related component units have less influence on bond prices than accounting measures derived from the primary government and the financially related component units. However, even though I find that the bond market weights the disaggregated pieces of information differently, I do not find that the explanatory power of the disaggregated model is significantly better or worse than an aggregated model of the government and its component units.

The results provide policy implications for the GASB. They suggest that the municipal bond market benefits from GASB 14's overall entity definition in that the market uses fully aggregated financial data to evaluate bond issues. This affirms the GASB's decision to include component unit information in the government-wide financial statements of the financial reporting model (GASB Statement 34, *Basic Financial Statements-and Management's Discussion and Analysis-for State and Local Governments* (GASB, 1999)). In addition, the GASB is currently revisiting GASB 14 as part of a routine evaluation of the effectiveness of its recent standards. I provide evidence that should be a useful input for the GASB's consideration.

2. BACKGROUND ON THE GOVERNMENTAL ENTITY ISSUE

For decades the traditional form of government has been augmented with quasi-government organizations sometimes referred to as public authorities (e.g., the Port Authority of New York and New Jersey was created in 1921). Public authorities are legally separate from the governments that create them and are separate from the traditional business-type activities of a primary government, such as water and sewer operations, which are not legally separate from the primary government and are accounted for in enterprise funds. Public authorities serve public purposes in a unique way by incorporating some of the organizational characteristics of the private sector into government and avoiding some of the hindrances of government bureaucracy. For example, a public authority can often provide a public service, such as operate a park or library, more efficiently by bypassing rigid governmental requirements, such as competitive bidding procedures and debt limitations.

Public authorities are created by governments, thereby raising a public interest issue. In a 1989 Boston magazine cover story titled “The Shadow Government,” public authorities are described as “an invisible government that functions with little oversight by elected officials ... they are ... making too many decisions on the public’s behalf out of the public’s sight and beyond the public’s control.” Concerns such as these prompted the GASB to examine the standards for including public authorities in the financial reports of state and local governments.

The GASB’s financial reporting entity project began with a sponsored research study in which Patton (1987) interviewed bond raters, insurers, and analysts. He found that an important concern when evaluating GO bonds is the potential for a financial drain on a bond issuer by a component unit. This was in contrast to the concerns of preparers of governmental financial statements, who were interested in whether a government has oversight responsibility for a component unit (such as control over the budget approval process). Thus, bond raters and insurers expressed a preference for financial factors, rather than control factors, in determining when to include a component unit. The resulting standard, GASB 14, requires the inclusion of both control-related and financially related component units.

Patton’s (1987) research suggests the display and disclosure provisions of GASB 14 facilitate the market’s valuation of new bond issues. That is, investors and creditors could use the discrete presentation reporting format to create an accounting entity that is most closely correlated with their concerns (e.g., an entity comprised of the primary government and its financially related component units). If this is true, investors and creditors may ignore or discount the control-related component units if they are perceived to be unrelated to the default risk on debt of the primary government.

GASB 14 requires that most component units be displayed separately from the primary government (the core government underlying the entity) and that disclosures describe the relationship between the primary government and its component units. Inclusion is warranted if the primary government exceeds a certain level of accountability for the component unit. Under GASB 14 there are three ways of assessing accountability:

- The first criterion is financial in nature. It specifies inclusion when a primary government appoints a voting majority of the component unit’s governing body and either bears a financial burden or receives a financial benefit from the component unit. The primary government may have guaranteed the component unit’s debt or agreed to subsidize its operations, for example.

- The second specifies inclusion when the primary government appoints a voting majority of the component unit's governing body and is able to impose its will on the organization. The primary government may have the power to hire and fire the component unit's management, for example.
- The third criterion specifies inclusion when a component unit is "fiscally dependent" on the primary government for approval of its budget, its bond issues, or its tax levy.²

The second and third criteria are control-oriented. The first criterion alone appears to satisfy the needs of the bond market even though the third criterion "sounds" financial. Fiscal dependency is, in concept, control over the purse strings rather than control over the purse. The organizations for which the primary government is determined to be sufficiently accountable are included in the governmental entity as component units. The financial position and results of operations of most component units are presented in a column separate from those of the primary government and disclosures describe whether the component units are included for financial or control reasons.

To date, governmental empirical research concerning entity issues is limited to surveys of various constituency groups, including preparers (Shoulders, 1982; Patton, 1987), users (Jones et al., 1985) and auditors (Engstrom, 1985). My study is the first to empirically examine whether the GASB 14 inclusion criteria and provision for discrete presentation are useful in evaluating the interest cost of new GO debt issues. In the section that follows, I develop hypotheses suitable for testing whether the interest cost of GO bonds reflect the financial condition of component units as well as the primary government. Evidence that interest costs are more strongly associated with financial measures when component units are included supports current GASB standards requiring inclusion of these component units. Evidence that interest costs are most strongly associated with accounting measures when component unit information is separately presented or that component unit information is differentially weighted supports current GASB standards requiring discrete presentation.

3. DEVELOPMENT OF HYPOTHESES

Both public- and private-sector accounting standards assume that inclusion of related organizations is useful to the readers of the financial statements. In the private sector, Tosh and Rue (1988) examined companies with an unconsolidated finance subsidiary.³ They measure the relations between the

parent's systematic risk and the debt ratio of the parent company alone and a consolidated debt ratio that includes the debt of the finance subsidiary. Because only the latter is significant, Tosh and Rue conclude that finance subsidiaries should be consolidated with their parent. I improve on Tosh and Rue's research design by including a formal test (i.e., Vuong statistic) of the relative explanatory power between various entity configurations.

The first hypothesis examines whether the interest cost on new GO bond issues is more closely associated with accounting information of the combined financial reporting entity than of the primary government alone. The purpose is to determine whether the GASB's overall definition of the combined financial reporting entity provides information that is useful to the bond market.

H₁. The interest cost on new GO bond issues is more closely associated with accounting variables of the combined financial reporting entity than accounting variables of the primary government alone.

Bond investors are only one of the three groups of financial statement users the GASB considers when setting accounting standards. The other two groups, citizens and legislative oversight bodies, are acknowledged to be equally important (GASB Concepts Statement 1, *Objectives of Financial Reporting* (GASB, 1987)). Therefore, the definition of the combined financial reporting entity promulgated by the GASB may not be perfectly consistent with the bond market's needs. Patton (1987) suggests investors and creditors mainly consider component units with financial relationships to the government (through subsidies, guarantees, etc.), while citizens and legislative oversight bodies are more concerned with control-related factors. If this is true, I expect the bond market to focus on an entity defined by financial relationships rather than control relationships.

This suggests two additional hypotheses. An aggregation of the primary government and its financially related component units is expected to be relatively more useful than (a) the primary government alone and (b) an aggregation of the combined financial reporting entity.

H_{2a}. The interest cost on new GO bond issues is more closely associated with accounting variables of an entity composed of the primary government and its financially related component units than accounting variables of the primary government alone.

H_{2b}. The interest cost on new GO bond issues is more closely associated with accounting variables of an entity composed of the primary government and its financially related component units than accounting variables of the combined financial reporting entity.

3.1. Municipal Bond Market

Municipal bonds are either GO or revenue debt. GO bonds are secured by the taxing authority of the issuing government and are closely associated with the general government. GO bonds are relatively homogeneous compared to revenue bonds, which are structured in myriad ways and issued by a variety of governments and quasi-governments. GO bonds are most appropriate for my study because I am interested in the effect of including component unit information on economic evaluations of the overall governmental entity.

Most municipal bond studies use yield or interest cost in lieu of bond price as the valuation measure of a new bond issue. A bond's price is the present value of expected future cash flows:

$$P_{it} = \sum_{i=1}^T \left[\frac{C_{it}}{(1 + R_{it})^t} \right]$$

where P_{it} is the price of bond i at time t , C_{it} the expected cash flow (interest for periods 1 through T and principal at time T), and R_{it} the discount rate or yield associated with bond i at time t . "For all practical purposes, both theoretically and empirically, bond prices and yields are two sides of the same coin." (Ingram & Wilson, 1999, p. 6). The interest cost measures normally used to compare bids submitted by underwriters (NIC and TIC) are standardized in the industry. NIC (net interest cost) is an average interest cost. I use TIC (true interest cost) because it is an average effective interest rate and is superior to NIC because it considers the time value of money. See, for example, Simonsen, Robbins, and Jump (2005).

4. RESEARCH DESIGN

I test each hypothesis using a relative information content approach by creating two nonnested models and determining which model has greater explanatory power. The models are nonnested because one model is not a subset of the other. This is true even though the combined financial reporting entity's accounting variables are mathematically equal to the primary government's plus the component units' accounting variables. The models focus on two different aggregations, not on the components of information within the aggregations.⁴

To test Hypothesis 1, I create two nonnested models (Eqs. (1) and (2)) based on earlier studies of municipal bonds. Municipal bond models incorporate measures of default risk and marketability as explanatory variables (Hastie, 1972). Financial position (Position) and financial performance (Perform) are accounting measures related to default risk and are described in detail in the following section. The accounting variables in Eq. (1) are those of the primary government alone, and the accounting variables in Eq. (2) are those of the combined financial reporting entity (primary government plus all component units). The remaining control variables capture other aspects of default risk and marketability and are the same in both equations.

$$TIC = \beta_0 + \beta_1 PG_Position + \beta_2 PG_Perform + \beta_3 BondAmt + \beta_4 BBIndex + \beta_5 Maturity + \beta_6 Call + \beta_7 Insured + \beta_8 BondRating + \varepsilon \quad (1)$$

$$TIC = \gamma_0 + \gamma_1 CFRE_Position + \gamma_2 CFRE_Perform + \gamma_3 BondAmt + \gamma_4 BBIndex + \gamma_5 Maturity + \gamma_6 Call + \gamma_7 Insured + \gamma_8 BondRating + \varepsilon \quad (2)$$

PG_Position is the financial position of the primary government, CFRE_Position the financial position of the combined financial reporting entity, PG_Perform the current year operating performance for the primary government, and CFRE_Perform the current year operating performance for the combined financial reporting entity. TIC is the true (effective) interest cost on the bonds issued, BondAmt the natural log of the par value of the bonds issued, BBIndex the Bond Buyer index of GO bonds for the week of the issue (an average interest cost of similar bonds), Maturity the natural log of the years to final maturity, Call a dichotomous variable indicating the existence of a call provision, Insured a dichotomous variable indicating the bond issue is insured against default, and BondRating a discrete measure of the bond's rating (Aaa = 0, Aa+ = 1, etc.).⁵ Table 1 provides further description of the accounting and control variables.

To test Hypotheses 2a and 2b I create an additional nonnested model (Eq. (3) (PGFin)), and compare its relative informativeness to Eqs. (1) (PG) and (2) (CFRE).

$$TIC = \delta_0 + \delta_1 PGFin_Position + \delta_2 PGFin_Perform + \delta_3 BondAmt + \delta_4 BBIndex + \delta_5 Maturity + \delta_6 Call + \delta_7 Insured + \delta_8 BondRating + \varepsilon \quad (3)$$

Table 1. Description of Variables for a Model of True Interest Cost on General Obligation Municipal Bonds.

Panel A: General Definitions		
<i>Dependent variable</i>		
TIC = True interest cost		
<i>Accounting variables^a</i>		
Position = Cumulative surplus (i.e., fund balance or retained earnings)/total revenues		
Perform = Operating cash flows/total revenues		
<i>Control variables</i>		
BondAmt = Natural log of par value of bond issue		
Maturity = Natural log of years to final maturity		
BBIndex = Bond Buyer GO Index for week of the issue, an average interest rate		
Call = 1, if issue has a call provision; zero otherwise		
Insured = 1, if the issue is insured; zero otherwise		
BondRating = 0 if Aaa, 1 if Aa+, 2 if Aa, 3 if Aa-, etc.		
Panel B: Definition of Accounting Variables		
Variable	Primary government	Combined financial reporting entity
Position	$\frac{\text{General fund balance}}{\text{General fund revenues}}$	$\frac{[\text{General fund balance} + (\text{Component unit fund balance or retained earnings})]}{(\text{General fund} + \text{Component unit revenues})}$

Table 1. (Continued)

Panel B: Definition of Accounting Variables		
Variable	Primary government	Combined financial reporting entity
Perform (operating cash flows)	$\frac{(\text{General fund revenues} - \text{Expenditures} + \text{Debt service} + \text{Capital outlay})}{\text{General fund revenues}}$	$\frac{[(\text{Governmental fund revenues} - \text{Expenditures} + \text{Debt service} + \text{Capital outlay}) + \text{Proprietary fund operating cash flows}]}{(\text{General fund} + \text{Component unit revenues})}$
Perform2 ^b (mixed bases)	$\frac{(\text{General fund revenues} - \text{expenditures})}{\text{General fund revenues}}$	$\frac{[(\text{Governmental fund revenues} - \text{Expenditures}) + (\text{Proprietary fund revenues} - \text{Expenses})]}{(\text{General Fund} + \text{Component Unit Revenues})}$
Perform3 ^b (compromise measure of income)	Same as original Perform	$\frac{[\text{All revenues} - \text{All expenditures/Expenses} + (\text{Governmental fund debt Service} + \text{Capital outlay}) + (\text{Proprietary fund depreciation})]}{(\text{General fund} + \text{Component unit revenues})}$
Perform4 ^b (“total” cash flows)	Same as Perform2	$\frac{[(\text{Governmental fund revenues} - \text{Expenditures}) + \text{Proprietary fund operating cash flows}]}{(\text{General fund} + \text{Component unit revenues})}$

^aAll accounting variables are scaled by revenues to control for size and mitigate heteroskedasticity.

^bThree alternate measures of financial performance are used to test the robustness of the original measure.

where, PGFin refers to an accounting variable measured for the primary government combined with only its financially related component units. Eq. (3) represents an entity comprising the primary government and its financially related component units.

Vuong test statistics are used to test Hypothesis 1 by comparing the explanatory power of Eqs. (1) (PG) and (2) (CFRE). The explanatory power of Eq. (3) (PGFin) is compared to Eqs. (1) (PG) and (2) (CFRE) using Vuong test statistics to test Hypotheses 2a and 2b, respectively.

4.1. Empirical Measures of Accounting Information

Ingram, Raman, and Wilson (1987, p. 115) observe that the “empirical literature to date consistently suggests that accounting ratios have information content for municipal bond yields.” However, because “no rigorous theory exists for deducing a linkage between particular accounting variables and [municipal] bond measures,” researchers use a variety of accounting measures. These typically include measures of financial position and financial performance.

I collect accounting variables for: the general fund, the aggregation of all financially related component units, and the aggregation of all control-related component units. The accounting variables for the combined financial reporting entity are summations of all three components. My proxies for the primary government and combined financial reporting entity do not wholly match those described in GASB 14 or appearing in most governmental reports. The difference arises because my primary government measures include only the general fund. This is consistent with previous studies of municipal bonds, which typically derive accounting measures solely from the general fund (Reck, Wilson, Gotlob, & Lawrence, 2004), and is supported by anecdotal evidence. For example, Karvelis (1987, 182) notes “the core of our [MBIAs] credit analysis focuses on the issuer’s general fund.”⁶

The general fund traditionally reports the operations of general government services. Under GASB 14, restricted purpose funds, such as capital projects funds, and proprietary funds are included with the general fund as part of the primary government. I chose to leave these amounts out of my proxy for the primary government for several reasons. Restricted purpose funds have legal restrictions that would preclude a government using those resources to support a financially troubled component unit. Proprietary funds are more commonly financed through revenue bonds and

my analysis is limited to GO issues. Also relevant to my analysis is the fact that including these amounts in the financial measures of the primary government would necessarily also include them in the financial measures of the combined financial reporting entity. Therefore, they would not be incremental to my measures and unlikely to affect comparisons.

Consistent with prior bond market research, the primary government's financial position (PG_Position) is measured as unreserved general fund balance.⁷ This amount represents the net assets of the fund that are not legally restricted for a specific purpose. The general fund is a governmental fund type, which uses the modified accrual basis of accounting and focuses on the flow of financial resources. The most significant differences between modified accrual and accrual accounting are in the treatment of long-term assets and debt. Neither is recorded in the balance sheet of governmental funds. Capital outlays for assets and principal payments on debt are recorded as expenditures in the operating statement of the governmental fund making the cash outlay. I measure the primary government's financial performance (PG_Perform) as an approximation of *operating* cash flows. It is measured as general fund revenues less expenditures, with the capital outlay and debt principal payments added back.⁸

Financial position and financial performance are collected for the financially and control-related component units, separately. Depending on the nature of their operations and the intent of the government, component units may use either the accrual or modified accrual basis of accounting. Financial position is measured as unreserved fund balance if the component unit uses the modified accrual basis or retained earnings if the component unit uses the accrual basis. Financial performance is again measured as an operating cash flow measure. Financial performance is measured as revenues minus expenditures, with capital outlays and debt principal payments added back for component units using the modified accrual basis and as cash flows from operating activities for component units using the accrual basis.

The operating cash flow measure of financial performance attempts to eliminate the differences in measurement between the modified accrual and accrual bases. Because the differences are not so easily dismissed, I explore three alternative measures in sensitivity tests. In one alternative I ignore the differences in measurement bases by taking revenues minus either expenditures or expenses. In another, I loosely convert modified accrual measures to full accrual. In the last, I use an alternative cash flow measure. The test results are robust to the various measures of financial performance. See [Table 1](#) for details of the alternative measures.

5. SAMPLE AND RESULTS

The sample population was identified (using Security Data Company's (SDC) Municipal New Issues Database, now part of Thomson Financial Securities Data) as cities that issued GO bonds between July 1, 1995, and September 25, 1997. The bonds are GO with the proceeds used for general government purposes. The usage requirement eliminates special-purpose bonds, such as Industrial Development Bonds, whose valuation might be affected by specific factors not modeled in this study. In addition, the bonds are new financings rather than issued to refund existing debt. The issues are long-term (greater than 1 year maturity) with a par value equal to or greater than \$1 million. Most importantly, a true interest cost is available.

More than 750 new issues meet the initial screening parameters. However, to insure independence of observations, only one bond issue per issuer is included in the sample. After omitting duplicate issuers, the initial sample includes 600 GO bond issues. The most discerning parameter affecting the sample size, however, is the requirement that the city has one or more discretely presented component units. I requested Comprehensive Annual Financial Reports (CAFRs) by contacting the finance officers of cities with populations in excess of 15,000 because small cities are much less likely to include a component unit in their financial reporting entity. I ultimately obtained CAFRs for 97 cities that include at least one component unit. Table 2 presents descriptive statistics for the sample.

The SDC database provides the dependent variable and control variables for the study, and the accounting variables are obtained from CAFRs released before the bond issue. I use the most recent CAFR preceding the bond issue to derive accounting measures. Cities do not usually provide interim financial information, and there is typically a reporting lag between the fiscal year end and the CAFR's release date. Therefore, an issue's official statement often includes annual financial information that is at least three months dated. For example, the official statement of a December 1995 bond issue would include June 30, 1995, annual financial information.

5.1. Statistical Tests of Nonnested Models

I test which of two nonnested models is relatively more informative with a Vuong (1989) likelihood ratio test. Other tests of nonnested models, such as Cox-Pesaran (Pesaran, 1974), lack the power to distinguish between models that *both* have incremental explanatory power. As a result, the Cox-Pesaran

Table 2. Means and Medians for a Sample of General Obligation Bonds Issued between 1995 and 1997 by City Governments Including at Least One Component Unit.

	Full Sample ^a (<i>n</i> = 97)		FIN Sample ^a (<i>n</i> = 60)	
	Mean	Median	Mean	Median
<i>Bond characteristics</i>				
True interest cost (%)	5.14	5.06	5.14	5.03
BBIndex (%)	5.68	5.70	5.71	5.73
Maturity (years)	18.1	19.5	16.9	19.2
Callable (%)	93	100	90	100
Insured (%)	39	0	35	0
BondRating = (0 if Aaa, 1 if Aa ⁺ , etc.)	1.56	2	1.68	2
BondAmt (\$)	19,070	7,500	19,350	9,330
<i>Accounting measures</i> (\$ in thousands of dollars)				
PG revenues	485,408	34,401		
FIN revenues for 60 observations with financially related component units	155,026	48,542		
CON revenues for 57 observations with control-related component units	158,047	32,655		
PG fund balance ^b	19,124	5,965		
PG surplus ^c	56,870	2,555		
FIN fund balance ^b for 60 observations with financially related component units	15,337	880		
FIN surplus ^c for 60 observations with financially related component units	(13,935)	(96)		
CON fund balance ^b for 57 observations with control-related component units	59,183	1,950		
CON surplus ^c for 57 observations with control-related component units	(2,882)	3		

^aFull sample includes all entities that have at least one component unit and FIN sample includes only entities with a financially related component unit.

^bFund balance = Unrestricted fund balance or retained earnings (PG, primary government; FIN, financially related component units; CON, control-related component units).

^cSurplus = Revenues – Expenditures or expenses.

statistics can be ambiguous—rejection or acceptance of *both* models. The Vuong test is useful because it does not presume that either model is the “true” model. Thus, the Vuong statistic provides a more powerful, directional test.

The first hypothesis compares the primary government to the fully implemented GASB 14 entity definition. Hypotheses 2a and 2b test whether the bond market tailors the GASB entity definition to the inclusion criteria it considers important. The full sample of 97 cities is not used for these last two

tests because it is necessary to compare only entities including a financially related component unit. Sixty cities include at least one financially related component unit.

5.2. Tests of Relative Information Content

The first step in calculating the statistics is to run separate OLS regressions for Eqs. (1)–(3). Although not the focus of this study, the individual parameter estimates on the regressions are consistent with results of earlier research (see Table 3). As predicted, the coefficient estimates for the accounting variables are negative (i.e., stronger financial measures are inversely related to bond yields) while the estimated coefficients on the control variables are all positive and significant. Eq. (2) (combined financial reporting entity) exhibits the largest adjusted R^2 of .5223.

5.2.1. Hypothesis 1 Results

Using the full sample of 97 cities, the combined financial reporting entity (Eq. (2)) is compared to the primary government (Eq. (1)). A significant

Table 3. Results from Regressing Eq. (2) Combined Financial Reporting Entity Accounting Variables on True Interest Cost for a Sample of 97 Cities Issuing General Obligation Bonds between 1995 and 1997.

Variable Name	Coefficient	White Test Statistic ^a	Significance
Intercept	-.9185	-1.15	
<i>Accounting variables</i>			
CFRE_Position	-0.1500	-1.73	*
CFRE_Perform	-0.3125	-1.91	*
<i>Control variables</i>			
BondAmt	0.1375	3.19	***
BBIndex	0.8014	6.84	***
Maturity	0.2289	2.54	***
Call	0.3236	2.30	**
Insured	0.4402	4.99	***
BondRating	0.1142	4.49	***
Adjusted R^2	.5223		

Notes: CFRE_Position = Cumulative surplus/total revenues; CFRE_Perform = Operating cash flows/total revenues.

* $p < .10$; ** $p < .05$; *** $p < .01$.

^aWhite Test Statistics are used in lieu of standard t -tests to mitigate for heteroskedasticity.

Table 4. Vuong Statistics for Tests of Differences in the Explanatory Power of a Model of True Interest Cost between Alternative Entity Definitions for a Sample of General Obligation Bonds Issued by Cities between 1995 and 1997.

Hypothesis (null)	Model	Sum of Squared Residuals	Vuong Statistic ^a	Significance	Comments
H1: CFRE = PG <i>n</i> = 97	CFRE (Eq. (2))	.00786	-2.45	**	CFRE outperforms PG
	PG (Eq. (1))	.01838			
H2a: PGFin = PG <i>n</i> = 60	PGFin (Eq. (3))	.00366	-2.06	**	PGFin outperforms PG
	PG (Eq. (1))	.00775			
H2b: PGFin = CFRE <i>n</i> = 60	PGFin (Eq. (3))	.00366	2.34	**	CFRE outperforms PGFin
	CFRE (Eq. (2))	.00228			

Notes: CFRE refers to the model using the combined financial reporting entity's accounting information, PG refers to the model using the primary government's accounting information, and PGFin refers to the model using the accounting information of the aggregation of the primary government and its financially related component units.

** $p < .05$.

^aA significantly negative result indicates that the explanatory power of the first model is superior and a significantly positive result indicates that the second model's explanatory power is superior.

Vuong statistic of -2.45 indicates that the explanatory power of the combined financial reporting entity's accounting variables is superior to that of the primary government. Table 4 presents the Vuong test statistics. This suggests that the bond market perceives there is an information benefit from combining related organizations with the primary government.⁹

5.2.2. Hypotheses 2 Results

The second set of hypotheses explores the nuances of the GASB 14 entity definition, attempting to target aspects of the definition that may be useful to the bond market. Hypothesis 2a compares an aggregation of the primary government and its financially related component units (Eq. (3)) to the primary government (Eq. (1)). A sample of 60 cities that have financially related component units is used for this test. A Vuong statistic of -2.06 indicates that the financial aggregation in Eq. (3) is superior to the primary government alone in Eq. (1). This supports Hypothesis 2a and suggests that

the bond market includes the accounting information of financially related component units when evaluating a primary government's GO bond issue.

However, the result for Hypothesis 2a may only be reflecting the pattern suggested by Hypothesis 1, namely that any type of inclusion and aggregation is useful to the bond market. To test whether the bond market is discriminating between the financially related and control-related component units, Hypothesis 2b compares the aggregation of the primary government and its financially related component units (Eq. (3)) to the combined financial reporting entity (Eq. (2)).

In this comparison of 60 cities, I unexpectedly found that full aggregation is preferred.¹⁰ The aggregation of the primary government and its financially related component units is rejected (Vuong statistic of 2.34) in favor of the combined financial reporting entity. The result for Hypothesis 2b suggests that the bond market does not ignore control-related component units when valuing a municipal new issue. This is contrary to what the bond market representatives suggested in Patton's (1987) interviews.

However, the test of Hypothesis 2b is not precise enough to determine conclusively that the bond market does not make distinctions between the primary government and the different types of component units. It indicates that full aggregation is relatively more informative than partial aggregation, but it cannot rule out the possibility that bond investors differentially weight financial information of the primary government, financially related component units, and control-related component units. If the financial information of the primary government and its component units is valued differently, discrete presentation provides a benefit. I test this in the section that follows.

5.3. Tests of the Usefulness of Discrete Presentation

Discrete presentation is useful if presentation of disaggregated information provides details that complement the aggregated totals used to price municipal bonds. Each disaggregated piece may be weighted differently by the bond market based on the importance of the underlying relationship to the default risk of the GO bonds. I present a series of additional hypotheses based on these relationships.

H_{3a}. In a model of true interest cost, the accounting variables of the primary government are weighted more than the accounting variables of the control-related component units.

H_{3b}. In a model of true interest cost, the accounting variables of the financially related component units are weighted more than the accounting variables of the control-related component units.

I test the hypotheses using the following equation:

$$\begin{aligned}
 TIC = & \alpha_0 + \kappa_1 PG_Position + \kappa_2 Fin_Position + \kappa_3 Con_Position \\
 & + \lambda_1 PG_Perform + \lambda_2 Fin_Perform + \lambda_3 Con_Perform \\
 & + \alpha_1 BondAmt + \alpha_2 BBIndex + \alpha_3 Maturity + \alpha_4 Call + \alpha_5 Insured \\
 & + \alpha_6 BondRating + \varepsilon
 \end{aligned} \tag{4}$$

In Eq. (4), financial position and performance are measured separately for the primary government (PG_Position, PG_Perform), the financially related component units (Fin_Position, Fin_Perform), and the control-related component units (Con_Position, Con_Perform). Eq. (4) is a disaggregated model. It is similar to Eq. (2) in that the financial position and performance measures in Eq. (2) (CFRE_Position, CFRE_Perform) are the sum of the three measures from Eq. (4) and represent the financial position and performance of the combined financial reporting entity. Revenue of the combined entity is used to scale all accounting variables.

I compare the two sets of three coefficient estimates of Eq. (4) ($\kappa_1, \kappa_2, \kappa_3$ and $\lambda_1, \lambda_2, \lambda_3$) for differences in relative weights. If the financial information of the primary government and its component units are valued equivalently, disclosure of the sum is sufficient (Jennings, 1990). A finding of significant differences in some or all of the estimated coefficients (F -statistics) in Eq. (4) indicates that investors value the components differently from each other and supports the GASB's provision for discrete presentation.

Another means to test the usefulness of discrete presentation is to compare the explanatory power of the disaggregated financial information (Eq. (4)) with financial information aggregated for the combined financial reporting entity (Eq. (2)).¹¹ I test whether Eq. (4) has greater explanatory power than Eq. (2) under the following hypothesis:

H₄. The true interest cost on new GO bond issues is more closely associated with disaggregated accounting variables than accounting variables of the combined financial reporting entity.

The results of testing Hypotheses 3 and 4 are summarized in Table 5.¹² Panel A presents tests of differences in the estimated coefficients for the primary government, the financially related component units, and the

Table 5. *F*-Statistics and Vuong Statistics for Tests of the Usefulness of Disaggregated Presentation of Primary Government and Component Unit Information in a Model of True Interest Cost on General Obligation Bonds Issued by 96 Cities between 1995 and 1997.

Panel A: <i>F</i> -Tests of Differences in Regression Coefficients			
Hypothesis	<i>F</i> -statistic	<i>p</i> -value (one tail)	Comments
$\kappa_1 < \kappa_2$	0.25	.3092	No difference in relative weights of financial position of the primary government and financially related component units
$\kappa_1 < \kappa_3$	3.25	.0376	The financial position of the primary government is more heavily weighted than that of control-related component units
$\kappa_2 < \kappa_3$	5.68	.0097	The financial position of the financially related component units is more heavily weighted than that of control-related component units
$\lambda_1 < \lambda_2$	0.05	.4112	No difference in relative weights of financial performance of the primary government and financially related component units
$\lambda_1 < \lambda_3$	0.01	.4572	No difference in relative weights of financial performance of the primary government and control-related component units
$\lambda_2 < \lambda_3$	0.04	.4164	No difference in relative weights of financial performance of the financially- and control-related component units
Panel B: Vuong Test of Differences in Disaggregated and Combined Financial Reporting Entity Models			
Hypothesis (null)	Sum of Squared Residuals	Vuong Statistic ^a	Comments
Disaggregated model (Eq. (4))	.0087		No evidence that a disaggregated reporting model is superior
Combined entity (Eq. (2))	.0093	-0.79	

^aA significantly negative result indicates that the explanatory power of the first model is superior and a significantly positive result indicates that the second model's explanatory power is superior.

Table 6. Results from Regressing Eq. (4) Disaggregated Accounting Variables on True Interest Cost for a Sample of 96 Cities^a Issuing General Obligation Bonds between 1995 and 1997.

Variable Name	Coefficient	White Test Statistic ^b	Significance
Intercept	-1.3128	-1.93	*
<i>Accounting variables</i>			
PG_Position	-0.00034960	-0.93	
Fin_Position	-0.00020550	-1.80	*
Con_Position	0.00024656	1.72	*
PG_Perform	-0.00030631	-2.88	***
Fin_Perform	-0.00023754	-0.53	
Con_Perform	-0.00036455	-0.87	
<i>Control variables</i>			
BondAmt	0.0683	2.42	***
BBIndex	0.8491	3.51	***
Maturity	0.3074	8.79	***
Call	0.4808	4.79	***
Insured	0.3548	4.35	***
BondRating	0.0680	3.18	***
Adjusted R ²	.5974		

Notes: PG_Position = Cumulative surplus/Total revenues; Fin_Position = Cumulative surplus/Total revenues; Con_Position = Cumulative surplus/Total revenues; PG_Perform = Operating cash flows/Total revenues; Fin_Perform = Operating cash flows/Total revenues; Con_Perform = Operating cash flows/Total revenues.

^a $p < .10$; ^{**} $p < .05$; ^{***} $p < .01$.

^aNew York is deleted from this sample because it becomes an outlier upon disaggregation.

^bWhite Test Statistics are used in lieu of standard t -tests to mitigate for heteroskedasticity.

control-related component units. Based on the results of Patton (1987), I expect that financial information of control-related components is less influential in valuing bonds than the financial information of the primary government or the financially related component units. I also test for differences between the primary government and its financially related component units. Because both financial position and performance are inversely related to true interest cost, the more negative the coefficient, the greater the weight assigned to a given measure.

I find no evidence that bond investors value financial measures of the financially related component units differently from those of the primary government. This suggests that the bond market values the information of financially related component units as much the information of the primary government. Consistent with expectations, I find that the financial position of control-related component units appears to be less influential in valuing bonds

than the financial position of either the primary government or the financially related component units. No differences are observed among the coefficients on measures of current period financial performance. This result holds even though the primary government's financial performance is significant.¹³

Panel B presents a Vuong statistic comparing the disaggregated model (Eq. (4)) to that of the combined reporting entity (Eq. (2)). While the model containing disaggregated financial information appears to explain more of the variation in true interest cost, the differences in explanatory ability between the disaggregated and combined models is not significant. The result is that I have conflicting evidence regarding the usefulness of discrete presentation – significant differences among the coefficients using *F*-statistics but insignificant differences in explanatory power using the Vuong test. (The regression results of Eq. (4) are presented in Table 6 and are generally representative of the OLS regression results of the other equations.)

The difference in outcomes of testing Hypotheses 3 and 4 is likely the result of a limited sample size. The *F*-test is designed for finite samples, while the Vuong test is based on asymptotic theory. Accordingly, the distributional properties of Vuong are not well known for limited samples, such as ours. In this setting, the *F*-statistic provides a better test and the results of Vuong tests should be interpreted with caution.¹⁴

6. CONCLUSION

Under GASB Statement 14, *The Financial Reporting Entity*, the financial reports of state and local governments are required to include quasi-government organizations that are administratively or financially linked to the primary government. Unlike the private sector, the financial statements of these component units are discretely presented. This enables a financial statement user to selectively include component units when evaluating a government's financial condition. I use the opportunity provided by discrete presentation to determine whether component unit financial information is considered in pricing GO bonds issued by municipal governments. My analysis provides evidence useful in assessing the requirements of GASB 14 for the inclusion and discrete presentation of component units in municipal reports.

I observe that the true interest cost on newly issued bonds is more closely associated with the accounting information of the GASB 14 combined financial reporting entity than the accounting information of the primary government alone. Further, I find that the true interest cost is more strongly

associated with the combined financial reporting entity than an aggregation of the primary government and its financially related component units. This supports the GASB's overall definition of the financial reporting entity.

Additionally, I test whether the bond market distinguishes between the accounting information of financially related and control-related component units. I find evidence that the financial information of component units included for control-related reasons is not valued as strongly as financial information of the primary government or its financially related component units. This supports the GASB's requirement for discrete presentation of component unit information.

My results have policy implications for the GASB because it is currently revisiting GASB 14 as part of an agenda project to examine the effectiveness of the standard. I find support for the entity definition provided by GASB 14 and evidence supporting discrete presentation. In addition, my results support the GASB 34 requirement that component units be included in the government-wide financial statements.

NOTES

1. In 1999 the FASB issued an Exposure Draft, *Consolidated Financial Statements: Purpose and Policy*, which would require consolidation based on effective control rather than ownership. However, the Board has not issued a final statement on consolidation policy. Instead, the Board has focused its efforts on consolidation procedures (e.g., eliminating pooling of interest accounting via Statement 141 and revising the accounting for goodwill via Statement 142) and harmonizing business combination accounting with the International Accounting Standards Board.

2. Some examples of component units include the city of Atlanta's Recreation Authority, which operated a stadium, sports arena, and the Atlanta Zoo. It is a component unit because Atlanta promised to help fund any deficiencies in principal and interest payments on construction bonds (i.e., a financial burden to the city). The City of San Mateo can impose its will on the Children and Families First Commission because the City Board of Supervisors may remove appointed commission members at will. Although the City of Baton Rouge does not guarantee the debt of the Fire Protection District or subsidize its operations, the District is fiscally dependent on the City because the City Council approves the district's tax rates and charges.

3. The Financial Accounting Standards Board (FASB) issued Statement 94, *Consolidation of All Majority-owned Subsidiaries*, in late 1987, requiring corporations to begin consolidating their finance subsidiaries in 1988. Before this standard, finance subsidiaries were not consolidated because the corporation's and the subsidiary's operations are "nonhomogeneous." Tosh and Rue (1988) use financial reports issued prior to FASB Statement 94.

4. Biddle, Seow, and Siegel (1995) and Jennings (1990) discuss the difference between relative information content and incremental information content tests.

5. The amounts paid for bond insurance are deducted from the net proceeds in calculating TIC and increase the effective interest rate, similar to bond discounts. Bonds are insured in the interest of marketability to assure AAA rating. The dichotomous Insured variable is necessary to capture the interest cost effect between a bond's insured rating and its "natural" rating in the absence of insurance. Results using separate indicator variables for different bond ratings (AAA, AA, A) in place of the single variable, BondRating, are not qualitatively different.

6. The Municipal Bond Investors Assurance (MBIA) Corporation is the largest provider of municipal bond insurance. In 1993, it insured 36.7% of municipal new issues that were insured (Zipf, 1995).

7. Wilson (1983) uses a qualitative variable to indicate the existence of a general fund deficit. Wallace (1981) uses the natural log of general fund deficit, while Wilson and Howard (1984) replicate Wallace using general fund balance, regardless of whether it is a deficit or surplus. Reck et al (2004) measure general fund balance scaled by revenues.

8. Wilson (1983) uses current operating deficit (revenues less than expenditures). Wallace (1981) uses total revenues minus expenditures and Wilson and Howard (1984) use the square root of general fund revenue.

9. All results are robust to alternative measures of Perform (financial performance), the inclusion of long-term debt as a variable, and limiting the sample to observations where the component units' revenues are not less than 1% of general fund revenues.

10. The sample of 60 cities with financially related component units is not the ideal sample for this test. A sample of cities with both financially related and control-related component units would provide stronger results. I use the sample of 60 because I only have 22 cities including both types of component units, and that sample size is too small for statistical evaluation. For the observations with no control-related component units, I am essentially comparing the primary government to the combined financial reporting entity. Because using the sample of 60 biases against finding statistically significant results, I feel comfortable using the conceptually inferior sample of 60.

11. In a similar design, Barth, Cram, and Nelson (2001) use Vuong statistics to compare the components of net income to the aggregate amount.

12. Regression results in the disaggregated equations are relatively sensitive to an outlier in the data. Tables 5 and 6 report results after dropping the largest observation (New York City) from the sample.

13. An alternative formulation of the model uses the combined financial reporting entity accounting measures rather than the primary government in Eq. (4) (see Jennings, 1990 for a discussion of alternative expression of linear transformations). Tests (*F*-statistics) of differences among coefficients lead to comparable conclusions as those reported. However, this alternative formulation is not suitable for follow up testing with the Vuong statistic because the two equations under evaluation would no longer be nonnested.

14. A similar caution is appropriate for my earlier tests (Hypotheses 1 and 2). However, in those cases the results of the Vuong test are corroborated by significant coefficients on accounting variables in the disaggregated model (Eq. (4)).

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THE EFFECT OF GOVERNMENTAL ACCOUNTING STANDARDS BOARD STATEMENT 34 ON MUNICIPAL AUDIT FEES

Arthur Allen and George Sanders

ABSTRACT

We examined the change in audit fees after adoption of GASB 34 for a sample of 350 cities, correcting for audit fee inflation unrelated to GASB 34. We found that the mean (median) fee change for 2002 adopters was 4.9 (2.9) percentage points higher than for non-adopters. The mean (median) fee increase for 2003 adopters, smaller cities, was 11.6% (8.6%) over the non-adoption year fee increase. Overall, we found that the adoption of Statement 34 increased mean (median) fees approximately 9% (5%) for all cities, but that the effect was significantly larger for small cities. Overall, we documented an increase in fees associated with adoption that is both statistically and practically significant.

INTRODUCTION

For fiscal years beginning after June 30, 2001, state and local governments were required to begin implementing Governmental Accounting Standards

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Board (GASB) Statement 34: “Basic Financial Statements – and Management’s Discussion and Analysis for State and Local Governments.” The effective date of GASB 34 was 1 year later for organizations with annual revenues between \$10 million and \$100 million, and 2 years later for organizations with annual revenues less than \$10 million. GASB 34 mandated profound changes to the financial reporting model and required numerous additional disclosures to be made in the financial reports. This additional information is likely to impose costs on issuers. The GASB believes the new financial statements and disclosures will prove useful to decision makers and exceed the costs of implementing the new standard. As noted by Copley et al. (1997), while “there is little reason to expect these reforms to increase citizen use of governmental financial reports” some benefits may be derived indirectly from changes in the behavior of governmental decision makers.

Researchers have looked at the benefits of implementing GASB 34 (e.g., Plummer, Hutchinson, & Patton, 2007), but there is little research examining its costs. Our purpose is to provide initial empirical evidence on one aspect of the cost side of this argument: the additional cost of obtaining an audit. To our knowledge, other than surveys of preparers’ expectations before implementation, no study provides empirical evidence on the costs of GASB 34. Our study, therefore, complements other research which examines the decision usefulness of GASB 34 financial statements (e.g., Plummer et al., 2007).

The GASB seeks information regarding the costs and benefits of new standards. Unless the GASB carefully balances costs and benefits, it may lose broad support. While GASB 34 had many supporters (e.g., Saaco, 2000), it was a controversial pronouncement because many perceived the benefits to be small (e.g., Anthony & Newberry, 2000) and its costs large. These views were particularly prevalent among preparers. The GFOA and other groups are now objecting to the GASBs Service Efforts and Accomplishments agenda. In December 2006, the GFOAs executive board recommended to the Financial Accounting Foundation (FAF) that the GASB be eliminated. More recently, Texas gave its local governments the choice of whether to follow GASB Statement 45 *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions* (Barkin, 2007). These pressures moved the GASB to issue a White Paper (2006) to defend the need for governments to have separate accounting and financial reporting standards.¹

The next section describes the reporting requirements of GASB 34 that are expected to lead to higher costs. The section “Data and Methods” describes the data and empirical methods. The “Results” section presents the results.

The final section provides conclusions and discusses the implications of the chapter.

NEW REPORTING REQUIREMENTS

The GASB Implementation Guide for Statement 34 describes Statement 34 as, “one of the most comprehensive financial reporting standards in the history of standards setting ...” (GASB, 2000, Preface). Additional reporting requirements mandated by GASB 34 include the following:

- A management’s discussion and analysis is required to provide readers with “an objective and easily readable analysis of the government’s financial performance for the year” (GASB, 1999).
- An additional set of financial statements, called government-wide statements, are required that are accrual-based and that consolidate information across funds. These statements focus on economic resources rather than the more limited focus on financial resources used by fund-based financial statements.
- Budgetary schedule are now required as part of the Required Supplemental Information (RSI).²

Infrastructure reporting was one of the most controversial requirements because of its perceived costs. Infrastructure assets must be capitalized, and depreciation is required unless the government elects to use the modified approach.³ The *AICPA (2007) Accounting and Audit Guide: State and Local Governments* (AAG-SLG, Chap. 7, para. 7.58) requires the auditor to examine evidence for the existence or occurrence of capital assets and related accounts, for the completeness of the records for capital assets and accumulated depreciation, for rights and obligations affecting the entity’s capital assets, that capital assets and related accounts are reported at proper amounts, and that they are properly classified, described, and disclosed. Because records for historical costs may be unavailable, GASB 34 allows governments to estimate costs. In that case, Chapter 7, para. 79 of the AAG-SLG requires that auditors consider obtaining evidence concerning the reasons why historical cost could not be determined. Clearly, the scope of the attest function with respect to capital assets has expanded significantly.

The modified approach also requires considerable additional information including a complete inventory of infrastructure, setting required condition levels and regular measurement of these condition levels. If the modified

approach is elected, the AAG-SLG (Chap. 7, para. 60) requires that the auditor obtain evidence that the asset management system and the documentation of the condition of assets comply with applicable GAAP.

Another example of the complications facing auditors is the treatment of interfund activities. In the government-wide financial statements many interfund transactions must be eliminated. The AAG-SLG notes that records may not provide sufficient information to eliminate internal activities and balances. Auditors are advised to consider the materiality of any GAAP departure and consider a scope limitation (Chap. 9, para. 9.27).

A Standard and Poor's survey (Hume, 2000) of preparers estimated that GASB 34 would cost cities \$35,000–500,000 to implement because, it “will require state and local governments to make major changes in their accounting systems.” (Hyman Grossman, Standard and Poor's managing director for public finance, quoted by Hume (2000)). The Government Finance Officers' Association (GFOA) was sufficiently concerned about costs that at one point they recommended members consider the costs and benefits of infrastructure reporting before implementing the infrastructure reporting requirements of the statement (Hume, 1999).

Engstrom and Tidrick (2001) identified ten issues auditors must contend with to audit GASB 34 statements. Del Vecchio, Johnson, and Magner (2007) found that preparers had concerns about the difficulty and cost about several aspects of GASB 34 implementation including the cost of gathering information for capital assets, the procedures for recording transactions for governmental fund and government-wide statements, the development of the MD&A, and the reconciliation between the fund and government-wide financial statements. The preparers in Del Vecchio et al.'s survey had “reservations about whether the benefits to be realized by GASB 34 exceed its implementation costs.”

Since GASB 34 has been implemented, there has been little research addressing whether the concerns of preparers have been realized. Combined with evidence on the decision usefulness of GASB 34 from other studies, our evidence on its additional costs will provide information to the GASB, other policy makers, and their constituents on the relative costs and benefits of this significant, and potentially burdensome governmental accounting standard.

DATA AND METHODS

We collected our data through a survey of cities with populations in excess of 20,000 as of the 2000 census. We received 350 usable responses for the

univariate analysis and 304 usable responses for the multivariate analysis. The responses were tested for differences between late and early responders. No significant differences were found. Differences in the size distributions of the sample and the population are small. The survey was conducted in 2004 and requested audit fees for 2001, 2002, and 2003. We also requested information in 2003 about the current and prior auditor, auditor tenure, disclosure level, and complexity.

We use both univariate and multivariate analyses to examine the increase in audit fees associated with GASB 34 adoption. In the univariate analysis, our two variables of interest are FeeChg03 and FeeChg02. FeeChg03 is equal to audit fees in 2003 divided by audit fees for the same city in 2002. FeeChg02 is equal to audit fees in 2002 divided by audit fees for the same city in 2001. We focus on changes in fees in 2002 and 2003 because 2001 serves as the base year, and because 83% of our sample adopted in 2002 and 2003. Survey respondents were asked to exclude non-audit fees and separate one-time fees associated with GASB 34. Because we wish to ignore purely transitory changes in fees, we exclude these one-time charges from our audit fee measures used in the primary analyses. We then provide a brief analysis of the separately identifiable one-time costs associated with GASB 34 implementation.

We expect that for cities adopting GASB 34 in 2003, FeeChg03 will be higher than their FeeChg02, and conversely, for cities adopting GASB 34 in 2002, we expect FeeChg02 to be higher than their FeeChg03. An additional comparison group consists of cities not adopting GASB 34 during 2002 or 2003. We include cities that changed auditors during 2001–2003, but we perform a sensitivity analysis that excludes these cities; the results are robust to their exclusion.

Our multivariate models include both levels and changes models.

$$\begin{aligned} \text{Ln}(\text{Fee}) = & \alpha + \beta_1 * \text{Ln}(\text{Population}) + \beta_2 * \text{Big 4} + \beta_3 * \text{CAFR} \\ & + \beta_4 * \text{Ln}(\text{Complexity}) \\ & + \beta_5 * (\text{GASB 34}) + \beta_i(\text{State}_i) + \varepsilon \end{aligned} \tag{1}$$

$$\begin{aligned} \Delta \text{Fees} = & \alpha + \beta_1 * \Delta \text{Population} + \beta_2 * \text{Big 4} + \beta_3 * \Delta \text{Auditor} \\ & + \beta_4 * \Delta \text{from Big 4} + \beta_5 * \text{CAFR} + \beta_6 * \text{Complexity} \\ & + \beta_7 * \text{GASB 34 adoption} + \varepsilon \end{aligned} \tag{2}$$

where, Fee is the audit fees, Population is the city population from Bureau of Census (2002) estimates, Big 4 = 1 if Big 4 auditor, CAFR = 1 if the city

prepares a CAFR under GASB guidelines, Complexity equals one plus the number of adjusting journal entries required by the auditor, GASB 34 = 1 if GASB 34 has been adopted by that year, State_{*i*} are a series of indicator variables coded 1 if the city is located in state *i*, ΔPopulation is the current year's population divided by prior year's population, ΔAuditor = 1 if the auditor has changed in the current year, Δfrom Big 4 = 1 if the auditor switched away from a Big 4 auditor in the current year, GASB 34 adoption = 1 if the city adopted GASB 34 in the current year.

Model 1 is run separately for each of the three year's audit fees. For model 2, separate models are run for the 2003/2002 change in fees and the 2002/2001 change in fees. Because we collected data from a single survey, there are limitations to some of the above variables. For the 2001 and 2002 models, CAFR and Complexity are proxied by the 2003 survey responses; we do not measure changes in these variables. Because we requested information about only the most recent auditor change, we assume that cities that switched auditors in 2003 did not switch auditors in 2002. Because only two cities switched to a Big 4 auditor, we do not include an indicator variable for cities switching to a Big 4 auditor.

We expect that the coefficients on the GASB 34 and GASB 34 adoption variables will be positive indicating that GASB 34 adopters pay higher fees and have larger fee increases. Because the levels' models make comparisons between adopters and non-adopters, they do not directly address whether fees *increase* after GASB 34 adoption. However, a significant difference between adopters and non-adopters in a levels' regression is evidence consistent with fee increases due to GASB 34 adoption. The change models provide more direct evidence of fee increases. The advantage of the multivariate analysis is that it explicitly controls for factors known to affect audit fees. The advantage of the univariate analysis is that each city is its own control; the change in fees for each city is compared for the GASB 34 adoption year to the non-GASB 34 adoption year.

RESULTS

Univariate Analysis

Table 1 contains descriptive statistics. Panel A of Table 1 consists of cities that adopted in 1999 (one city), 2000 (one city), and 2001 (19 cities). The samples for Panel B, C, and D consist of cities that adopted GASB 34 in 2002, 2003, and 2004, respectively. We will refer to our two control groups as

Table 1. Audit Fee Levels and Changes Classified by GASB 34 Adoption Year from a Sample of 350 Cities with Populations in Excess of 20,000.

Variables	Mean	Standard Deviation	Minimum	5%	Median	95%	Maximum
<i>Panel A: Cities that adopted GASB 34 1999–2001 (n = 21)</i>							
Population	486,138	1,730,095	22,071	24,227	65,322	711,644	8,008,278
Audit fees 2003	263,568	859,435	17,700	19,251	51,100	354,783	4,000,000
Audit fees 2002	262,659	860,117	17,400	18,600	46,000	384,600	4,000,000
Audit fees 2001	263,342	860,359	16,800	17,100	47,100	390,000	4,000,000
FeeChg03	1.036	0.087	0.889	0.922	1.029	1.186	1.304
FeeChg02	1.028	0.109	0.757	0.894	1.020	1.204	1.296
<i>Panel B: Cities that adopted GASB 34 in 2002 (n = 97)</i>							
Population	145,730	164,873	21,497	24,983	94,530	425,257	1,320,994
Audit fees 2003	99,794	101,134	20,340	25,250	74,800	288,000	792,000
Audit fees 2002	97,092	90,559	16,290	23,850	73,800	275,000	612,470
Audit fees 2001	90,258	89,952	15,000	23,300	66,000	230,000	692,850
FeeChg03	1.035	0.150	0.651	0.869	1.021	1.324	1.814
FeeChg02	1.084	0.126	0.766	0.909	1.050	1.314	1.455
<i>Panel C: Cities that adopted GASB 34 in 2003 (n = 203)</i>							
Population	44,414	20,445	20,543	21,414	39,521	85,202	126,246
Audit fees 2003	46,560	25,559	6,000	16,425	41,000	100,000	139,200
Audit fees 2002	40,558	22,503	6,000	14,040	34,800	85,500	122,450
Audit fees 2001	38,666	20,988	6,000	13,000	34,900	78,976	112,400
FeeChg03	1.167	0.241	0.632	0.921	1.118	1.643	2.750
FeeChg02	1.051	0.116	0.687	0.886	1.032	1.305	1.455
<i>Panel D: Cities that adopted GASB 34 2004 (n = 29)</i>							
Population	32,293	11,755	20,039	20,120	28,338	55,439	60,679
Audit fees 2003	35,156	25,983	14,750	15,000	28,870	65,000	153,389
Audit fees 2002	31,940	18,460	13,125	14,600	26,440	62,000	105,557
Audit fees 2001	29,456	14,642	12,750	14,350	24,175	59,000	72,564
FeeChg03	1.069	0.108	0.842	0.929	1.037	1.217	1.453
FeeChg02	1.075	0.116	0.901	0.943	1.038	1.307	1.454

Notes: All data were collected from a survey of cities with populations in excess of 20,000 citizens. Audit fees exclude non-audit fees and one-time fees such as those associated with GASB 34 adoption. Population is from the 2003 Bureau of Census estimates. FeeChg03 (FeeChg02) is equal to each city's audit fees in 2003 (2002) divided by their Audit Fees in 2002 (2001). For Panel A: Of the 21 cities adopting GASB 34 prior to 2002, 19 cities adopted in 2001, 1 in 2000, and 1 in 1999.

the early and late adopter groups (shown in Panels A and D, respectively). The control groups are not critical to our inferences because in subsequent analyses, we compare audit fee inflation for each city in its GASB 34 adoption year to that same city's inflation in its non-adoption year. However, the control group will indicate whether there are large differences in audit fee inflation in 2003 compared to 2002. Audit Fee Inflation is measured as the audit fees of the current year divided by audit fees in the prior year.

Mean population in the early (late) adopter group is 486,138 (32,293) with median population of 65,322 (28,338). In the early adopter group, mean FeeChg03 and FeeChg02 is 1.036 and 1.029, respectively; median FeeChg03 and FeeChg02 is 1.029 and 1.020. In the late adopter group, mean FeeChg03 and FeeChg02 is 1.069 and 1.075, respectively; median FeeChg03 and FeeChg02 is 1.037 and 1.038. Fees increased more for late adopters, which are much smaller cities. For both early and late adopters, fee increases in 2003 were similar to those in 2002. When the two groups are combined (unreported), mean FeeChg03 and FeeChg02 are both 1.055. We conclude that for cities not implementing GASB 34 in 2002 or 2003, audit fee inflation in 2002 is quite similar to that in 2003.

Panels B and C show the same variables in Panels A and D, but Panels B and C consist of cities that adopted GASB 34 in 2002 and 2003, respectively. Mean and median populations of the 2002 adopters (145,730 and 94,530, respectively) are much larger than the 2003 adopters (44,414 and 39,521, respectively). This was expected because GASB 34 allowed smaller cities to adopt later. For cities adopting GASB 34 in 2002, the mean and median of FeeChg03 was 1.035 and 1.021, respectively, while the mean and median FeeChg02 was 1.084 and 1.050, respectively. Mean audit fee inflation was 4.9 (1.084–1.035) percentage points higher in the adoption year, and this difference is statistically significant (p -value = .032).⁴ Median audit fee inflation was 2.9 (1.050–1.021) percentage points higher during the adoption year than in the non-adoption year, and this was also statistically significant (p -value = .004 with signed-rank test). For the 2002 adoption group, 2002 fee inflation was much higher than the early adoption (8.4% vs. 2.8%), and 2003 fee inflation was about the same (3.5% vs. 3.6%).

For cities adopting GASB 34 in 2003 (Panel C), the mean and median of FeeChg03 was 1.167 and 1.118, respectively, while the mean and median FeeChg02 was 1.051 and 1.032, respectively. Mean audit fee inflation was 11.6 (1.167–1.051) percentage points higher in the adoption year while median audit fee inflation was 8.6 (1.118 – 1.032) percentage points higher during the adoption year than in the non-adoption year. Both of these differences are statistically significant at the .001 level. Audit fee inflation for

the 2003 adoption group in 2002 (5.1%) was about half way between that of the early adoption group (2.8%) and the late adoption group (7.5%). Audit fee inflation for the 2003 adoption group (16.7%) was much higher than both control group's 2003 inflation (3.6% and 6.9%).

Our results suggest that audit fee inflation was much higher during the year GASB 34 was adopted regardless of whether the adoption year was 2002 or 2003. A more direct measure of how much higher is computed as the audit fee inflation in the adoption year minus inflation in the non-adoption year when measured at the city level. This measure (G34INFLATE) allows us to combine all cities that adopted GASB 34 during 2002 or 2003 instead of comparing means across different samples. For our 300 observations which adopted in 2002 or 2003, the mean and median of G34INFLATE is .094 and .055 (not reported), respectively. The mean and median of G34INFLATE is significantly greater than zero (p -value < 0.001). When G34INFLATE is winsorized at 5% and 95%, the mean is reduced to .092.

Our univariate results suggest that GASB 34 increased audit fees by an average of 9%, while the median increase in fees was 5.5%. However, the size of this effect was much larger for cities that adopted GASB 34 in 2003 compared to 2002, with an average (median) increase in fees of 11.6 (8.6) percentage points instead of 4.9 (2.9) percentage points. The most obvious explanation for this result is that GASB 34 had a disproportionate effect on smaller cities. Larger cities may have already been collecting more of the additional information required by GASB 34. Smaller cities may rely more on their auditors to help them finalize changes to their accounting system. Another explanation is that the 2002 adopter group contained smaller cities that voluntarily adopted early. These cities had their systems in place early, and were easy to audit in comparison to those cities that waited until they were required to adopt.

We also examine the likelihood that audit fees will increase more in the GASB 34 adoption year than in the non-adoption year. There are 287 observations in our sample which adopted GASB 34 in 2002 or 2003 and had at least one annual change in audit fees (13 cities had no change in fees). For the 2002 GASB 34 adoption group, 64.8% increased their fees more in 2002 than in 2003. For the 2003 GASB 34 adoption group, 69.4% increased their fees more in 2003 than in 2002.

Respondents were asked to separately report one-time fees associated with GASB 34 implementation, and these fees have been excluded from our main analyses. Most governments (246) reported no one-time fees associated with GASB 34 adoption. Of those cities reporting a one-time fee (104), the mean amount of that fee was \$14,807. As a percentage of

ongoing audit fees, these one-time fees average 10.1% for the 2003 adopters and 3.6% for the 2002 adopters. These results are similar to those of the main analysis. GASB 34 had a disproportionate impact on smaller cities.

Supplemental Univariate Analysis

Our discussion thus far has focused on mean and median of audit fee changes. Of potential concern is the effect that extreme observations may have on our results. To examine the effect of extreme observations on the magnitudes of the mean fee change differences, we winsorized observations at 5% and 95%. As an alternative to winsorizing, we also delete the highest and lowest 5% of the observations. The results of these analyses are shown in Table 2. Table 2 also displays a column for mean FeeChg03 minus mean FeeChg02. For the control groups, shown in Panels A and D, FeeChg03 is not significantly different from FeeChg02, and these tests remain insignificant after winsorizing or deleting extreme observations.

For the 2002 GASB 34 adoption group, the mean of FeeChg02 is .049 greater than the mean of FeeChg03 (as previously discussed). Winsorizing at 5% and 95% increases that difference to .053 while deleting the highest and lowest 5% increases that difference to .057. For the 2002 GASB adoption group, reducing the effect of outliers increases the magnitude of the difference in Audit Fee Inflation during 2002 relative to Fee Inflation in 2003.

For the 2003 GASB 34 adoption group, the mean of FeeChg02 is .116 greater than the mean of FeeChg03 (as previously discussed). Winsorizing at 5% and 95% decreases that difference to .109, while deleting the lowest and highest 5% of the observations decreases that difference to .102. For the 2003 GASB adoption group, reducing the effect of outliers decreases the magnitude of the difference in Audit Fee Inflation during 2002 relative to inflation in 2003 by 0.7–1.4 percentage points.

Multivariate Models

Table 3 provides descriptive statistics for the sample of cities analyzed using multivariate models. The sample size is reduced to 304 observations because of incomplete survey responses to the client complexity and disclosure level questions. The level of audit fees and population are consistent with those described in the previous section. Client complexity is the number of

Table 2. Mean Changes in Audit Fees Classified by GASB 34 Adoption Year from a Sample of 350 Cities with Populations in Excess of 20,000 after Winsorizing and Deleting Extreme Observations.

Variables	Mean FeeChg03	Mean FeeChg02	Mean FeeChg03 – FeeChg02	Unpaired <i>t</i> -Test of Differences	Paired <i>t</i> -Test (<i>p</i> -Value)	Signed-Rank Test (<i>p</i> -Value)
<i>Panel A: Cities that adopted GASB 34 in 1999–2001</i>						
Extremes not adjusted (<i>n</i> = 21)	1.036	1.028	0.008	0.7968	0.7884	0.7381
Winsorize at 5% and 95% (<i>n</i> = 21)	1.033	1.035	−0.002	0.9368	0.9287	
Delete smallest and largest 5% (<i>n</i> = 19)	1.029	1.049	−0.020	0.4083	0.3539	
<i>Panel B: Cities that adopted GASB 34 in 2002</i>						
Extremes not adjusted (<i>n</i> = 97)	1.035	1.084	−0.049	0.0148	0.0318	0.0042
Winsorize at 5% and 95% (<i>n</i> = 97)	1.030	1.083	−0.053	0.0012	0.0039	
Delete smallest and largest 5% (<i>n</i> = 89)	1.024	1.081	−0.057	0.0001	0.0002	
<i>Panel C: Cities that adopted GASB 34 in 2003</i>						
Extremes not adjusted (<i>n</i> = 203)	1.167	1.051	0.116	0.0001	0.0001	0.0001
Winsorize at 5% and 95% (<i>n</i> = 203)	1.159	1.050	0.109	0.0001	0.0001	
Delete smallest and largest 5% (<i>n</i> = 184)	1.146	1.044	0.102	0.0001	0.0001	
<i>Panel D: Cities that adopted GASB 34 in 2004</i>						
Extremes not adjusted (<i>n</i> = 29)	1.069	1.075	−0.006	0.8506	0.8285	0.5045
Winsorize at 5% and 95% (<i>n</i> = 29)	1.064	1.069	−0.005	0.6419	0.8361	
Delete smallest and largest 5% (<i>n</i> = 27)	1.063	1.052	0.011	0.5667	0.5932	

Notes: All data were collected from a survey of cities with populations in excess of 20,000 citizens. Audit fees for each year exclude non-audit fees and one-time fees such as those associated with GASB 34 adoption. FeeChg03 (FeeChg02) is equal to each city's audit fees in 2003 (2002) divided by their audit fees in 2002 (2001). The unpaired *t*-test of differences is a one-sample test of whether the mean of FeeChg03 is different from FeeChg02 (two-tailed test). The paired *t*-test is a one-sample test of whether (FeeChg03 minus FeeChg02) is different from zero (two-tailed test). The signed-rank test is a Wilcoxon test of whether the medians (unreported) of (FeeChg03 minus FeeChg02) is different from zero (two-tailed test). For Panel A: Of the 21 cities, 19 cities adopted in 2001, 1 adopted in 2000, and 1 adopted in 1999.

Table 3. Descriptive Statistics for Audit Fees and Fee Determinants from a Sample of 304 Cities with Populations in Excess of 20,000.

Variable	Mean	Standard Deviation	Minimum	5%	Median	95%	Maximum
<i>Levels variables</i>							
Audit fees – 2003	72,913	234,041	6,700	17,400	45,000	133,350	4,000,000
Audit fees – 2002	68,314	232,911	6,700	16,000	41,699	125,000	4,000,000
Audit fees – 2001	65,390	233,082	6,700	15,700	39,678	117,000	4,000,000
Population – 2003	100,332	466,150	20,039	21,662	45,861	227,920	8,008,278
Complexity	12.161	23.780	0	0	4	49	184
Big 4 auditor – 2003	11.18%	31.16%	0	0	0	1	1
Big 4 auditor – 2002	12.50%	33.13%	0	0	0	1	1
CAFR	90.79%	28.94%	0	0	1	1	1
GASB 34 by 2002	32.57%	46.90%	0	0	0	1	1
GASB 34 by 2003	91.78%	27.50%	0	0	1	1	1
<i>Change variables</i>							
FeeChg03	1.116	0.213	0.632	0.893	1.049	1.462	2.750
FeeChg02	1.062	0.117	0.687	0.894	1.038	1.300	1.455
GASB 34 in 2003	59.21%	49.22%	0	0	1	1	1
GASB 34 in 2002	26.97%	44.45%	0	0	0	1	1
Population change – 2003	1.007	0.017	0.969	0.990	1.003	1.036	1.132
Auditor change – 2003	8.89%	28.49%	0	0	0	1	1
Auditor change – 2002	10.20%	30.31%	0	0	0	1	1
Change from Big 4 – 2003	1.64%	12.74%	0	0	0	0	1
Change from Big 4 – 2002	2.30%	15.02%	0	0	0	0	1

Notes: All data were collected from a survey of cities with populations in excess of 20,000 citizens. Audit fees for each year exclude non-audit fees and one-time fees such as those associated with GASB 34 adoption. Population is from the 2003 Bureau of Census estimates. Complexity is measured as the number of adjusting journal entries required by the auditor. CAFR is coded 1 if the city issues a comprehensive annual financial report in accordance with GASB requirements. GASB 34 by 2002 is coded 1 if the city adopted GASB 34 by the 2002 fiscal year. GASB 34 by 2003 is coded 1 if the city adopted GASB 34 by the 2003 fiscal year. GASB 34 in 2002 is coded 1 if the city adopted GASB 34 in the 2002 fiscal year. GASB 34 in 2003 is coded 1 if the city adopted GASB 34 in the 2003 fiscal year. Population change is the ratio of the 2003 population divided by the 2002 population. Auditor change is coded 1 if the auditor is new in 2003. Change from Big 4 is coded 1 if the new auditor in 2003 was not Big 4 and the previous auditor was Big 4.

adjusting journal entries required by the auditor. Mean (median) complexity is 12.161 (4) with 29% of the cities reporting no required journal entries. More than 91% of our sample prepared a CAFR in 2003. By the year 2002 (2003), 32.57% (91.78%) of the sample had adopted GASB 34.

Because we measure changes over a single year, the change in population and auditors were modest. For brevity, Table 3 omits population in 2001 and 2002 as well as the change in population for 2002. The mean (median) increase in population was 0.7% (0.3%) in 2003. In 2003 (2002), 8.89% (10.20%) of the sample cities changed auditors. In 2001, 45 of the 304 sample cities employed a Big 4 auditor (14.8%). In 2002, seven cities (2.3%) switched away from a Big 4 auditor, but no city switched to a Big 4, leaving 38 cities (12.5%) with a Big 4. In 2003, one city switched to a Big 4 auditor, and five cities (1.64%) switched away from a Big 4, leaving 34 cities (11.18%) with a Big 4 auditor. Because so few cities switched to a Big 4 auditor, we include variables only for cities that switched away from a Big 4 auditor.

Table 4 reports three audit fee models, with a separate model for 2001, 2002, and 2003 audit fees. In each case, log of audit fees is the dependent variable. The independent variables are client size (population), Big 4 auditor, CAFR, Complexity, and a 0:1 variable indicating whether GASB 34 has been adopted by that year. There are also indicator variables for each state. The adjusted R^2 in each model is at least 64.7% which is comparable to prior municipal audit fee models. An examination of model assumptions (e.g., normal error terms) revealed no violations of the assumptions.

The GASB by *year* variables measure whether GASB 34 was adopted during the year examined. The GASB 34 variable is statistically significant only in the year 2001. In other words, cities which had adopted GASB 34 by 2001 paid more audit fees than other cities after controlling for client size, complexity, auditor, and disclosure levels. The GASB 34 variable coefficients for 2002 and 2003 are .065 and .072, respectively. Although economically meaningful (about a 7% increase in fees), these coefficients are not statistically significant. The results from the levels' models regressions provide marginal evidence consistent with the assertion that GASB 34 increases audit fees. A more direct test of this assertion is to examine year-to-year audit fee changes at the time of adoption.

Table 5 reports models of the change in audit fees. The dependent variable in the first model is the ratio of each city's 2002 audit fees divided by its 2001 fees. The dependent variable in the second model is the ratio of each city's 2003 audit fees divided by its 2002 fees. Because GASB 34 is adopted in a single year, each model examines only a single year's change in fees. The independent variables are change in population, Big 4 auditor, auditor

Table 4. Annual Audit Fees Regression Models for Each Year 2001, 2002, and 2003 Using a Sample of 304 Cities with Populations in Excess of 20,000.

Variable	Fees 2003		Fees 2002		Fees 2001	
	Parameter estimate	<i>t</i> -statistic	Parameter estimate	<i>t</i> -statistic	Parameter estimate	<i>t</i> -statistic
Intercept	4.183	15.64**	4.101	12.06**	3.928	12.61**
Ln(population)	0.583	22.29**	0.617	21.23**	0.626	24.53**
Big 4 auditor	0.351	5.39**	0.314	4.84**	0.325	5.04**
CAFR	0.131	1.95*	0.081	1.21	0.050	0.76
Ln(complexity)	0.051	3.42**	0.043	2.84**	0.043	2.88**
GASB 34 by 2003	0.065	0.82				
GASB 34 by 2002			0.072	1.48		
GASB 34 by 2001					0.192	2.40*
Model R^2	0.647		0.665		0.666	

Notes: The dependent variable is the level of audit fees in each year (2001–2003). Ln(population) is the natural log of population in each year (2001–2003). Big 4 auditor is coded 1 if the auditor was one of the largest 4 auditors in that year (2003/2002). Big 4 auditor for the 2001 model is estimated from the auditor in 2002. CAFR is coded 1 if the city issues a comprehensive annual financial report in accordance with GASB requirements. CAFR data in the 2001 and 2002 models are estimated from 2003. GASB 34 in 2001 is coded 1 if the city adopted GASB 34 by the 2001 fiscal year. GASB 34 in 2002 is coded 1 if the city adopted GASB 34 by the 2003 fiscal year. GASB 34 in 2003 is coded 1 if the city adopted GASB 34 by the 2003 fiscal year. State indicator variables were also included in the above models but were omitted for brevity.

** and * statistically significant at the 0.01 and 0.10 levels, respectively (two-tailed *t*-test).

change, change from a Big 4 auditor, CAFR, complexity, and a variable indicating whether GASB 34 was adopted in that year.

In the 2002/2001 fee change model, only the GASB 34 variable is statistically significant ($t = 2.12$, p -value = 0.035). The coefficient of 0.033 implies that fees increased an additional 3.3% for cities adopting GASB 34 in 2002 compared to non-adopters. This estimate is somewhat smaller than the estimate from the univariate analysis (4.9%). The model's adjusted R^2 is very small (.008) and the model is not statistically significant.⁵

The adjusted R^2 is 0.098 in the 2003/2002 fee change model. The coefficient on Big 4 auditor (0.047) indicates higher fee increases, but the statistical significance is marginal ($t = 1.23$, p -value = 0.219). Changing auditors is associated with fee increases ($t = 2.31$, p -value = 0.022), but switching away from a Big 4 auditor did not result in a significant fee decrease. The coefficient on the GASB 34 variable is 0.131 ($t = 5.43$, p -value < 0.001) implying that cities adopting GASB 34 in 2003 experienced an

Table 5. One-year Change in Audit Fee Regression Models for the Time Periods 2003/2002 and 2002/2001 Using a Sample of 304 Cities with Populations in Excess of 20,000.

Variable	Fees 2002/Fees 2001 N = 304		Fees 2003/Fees 2002 N = 304	
	Parameter estimate	t-statistic	Parameter estimate	t-statistic
Intercept	1.032	40.25**	0.699	3.34**
GASB 34 – 2002	0.033	2.12*		
GASB 34 – 2003			0.131	5.43**
Population change	-0.375	-1.13	0.273	1.34
Big 4 auditor	0.011	0.55	0.047	1.23
Auditor change	-0.014	-0.54	0.104	2.31*
Change from Big 4	-0.049	-0.97	-0.072	-0.72
CAFR	0.016	0.65	0.033	0.81
Complexity	0.007	1.37	0.009	1.06
Model adjusted R ²		0.008		0.098

Notes: The dependent variable is one-year change in audit fees. GASB 34 – 2002 is coded 1 if the city adopted GASB 34 in the 2002 fiscal year. GASB 34 – 2003 is coded 1 if the city adopted GASB 34 in the 2003 fiscal year. Population change is the ratio of the current year’s population divided by the prior year’s population minus one. Big 4 auditor is coded 1 if the auditor was one of the largest 4 auditors in that year (2003 or 2002). Auditor change is coded 1 if the auditor is new in 2003. Change from Big 4 is coded 1 if the new auditor in 2003 was not Big 4 and the previous auditor was Big 4.

** and * statistically significant at the 0.01 and 0.05 levels, respectively (two-tailed t-test).

additional 14.0% fee increase compared to other cities. This estimate is somewhat higher than the results from the univariate analysis (11.6%).

CONCLUSIONS AND DIRECTIONS FOR FUTURE RESEARCH

GASBs Statement No. 34 required new sets of financial statements using accrual accounting, an MDA section, new footnote disclosures, and infrastructure reporting. It was a controversial standard because issuers believed that it would impose substantial costs to implement. Although the controversy centered on costs to the issuer, there has been little research to examine the change in the level of these costs. We examine audit fees for a sample of 350 cities during the GASB 34 implementation period. We document a fee increase associated with adoption of GASB Statement 34. While audit fees are

likely a small proportion of total financial reporting costs, the size of the audit fee changes suggests significant changes in overall reporting costs.

We find that the adoption of Statement 34 increased mean (median) fees approximately 9% (5%) for all cities, but that the effect was much larger for cities adopting in 2003. The mean (median) fee change for 2002 adopters was 4.9 (2.9%) percentage points higher than for non-adopters. The mean (median) fee increase for 2003 adopters, smaller cities, was 11.6 (8.6) percentage points over the non-adoption year fee increase. It appears that smaller governments were affected disproportionately. One possible explanation for this is that smaller governments are more reliant on their external auditors for compliance and for developing the needed information.

The GASB provided two provisions to reduce the cost of GASB 34 on smaller governments: smaller governments were given more time to implement, and the smallest group of governments (revenues less than \$10 million) were not required to retroactively report infrastructure assets. Despite these provisions, our results suggest that smaller governments may have been disproportionately affected.

To separate the one-time costs from ongoing increases in audit fees, we asked respondents to exclude one-time implementation costs from other audit fees. However, we examine fees for only a few years surrounding implementation of GASB 34, and therefore, we are unable to rule out the possibility that the incremental costs of GASB 34 that we document are temporary. An interesting direction for future research is to examine audit fees over a longer time period to determine to what extent the incremental costs of GASB 34 are permanent.

NOTES

1. The Financial Accounting Foundation, at a meeting on May 22, 2007, unanimously reaffirmed the GASB as the financial accounting standard setting body for state and local governments ([Financial Accounting Foundation, 2007](#)).

2. The audit scope does not always include the RSI. Even if the engagement is to opine on the financial statements alone, the auditor is required to perform limited procedures according to AU Section 558.07.

3. A *modified* approach that, as an alternative to depreciation, may be used for infrastructure. This approach requires considerable additional information including a complete inventory of infrastructure, setting required condition levels, and regular measurement of these condition levels.

4. Results are similar if audit fees are deflated by population before computing the percentage change in fees.

5. Because client size has been a consistently strong predictor of audit fees in prior research, it is somewhat surprising that the change in client size variable is insignificantly related to change in fees. We believe the explanation is that our analysis examines fee changes over a single year while prior municipal audit fee change studies use longer time periods. Jensen and Payne (2005) compare audit fees across a 6-year period: 1992 and 1998. Sanders, Allen, and Korte (1995) compare audit fees across a 4-year period: 1989–1985. Longer time periods have the advantage of allowing greater variation in the independent variables.

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PUBLICATION RATES OF GOVERNMENTAL AND NONPROFIT MANUSCRIPTS AMONG TWENTY-FIVE LEADING ACADEMIC ACCOUNTING JOURNALS

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ABSTRACT

We examined publication rates of governmental and nonprofit accounting and reporting manuscripts among 25 leading academic accounting journals for the 10-year period ending in 2005. Overall, we found that governmental and nonprofit manuscripts constitute approximately 3% of the publications appearing in the leading journals. However, the frequency of publication varies considerably among these journals.

We also examined the distribution of governmental and nonprofit publications across subject matter. Our analysis confirms that financial accounting topics are the dominant subject matter in academic journals

(both overall and among governmental and nonprofit manuscripts) but that nonprofit taxation and governmental and nonprofit auditing and managerial manuscripts are published. We found no publications of accounting education articles specific to the teaching of governmental or nonprofit accounting or reporting.

We examined the frequency of publication of manuscripts dealing with governmental and nonprofit topics among 25 leading accounting journals. Our purpose is threefold:

1. identify journals most likely to publish in these areas,
2. examine the frequency of publication by topic area among published governmental and nonprofit manuscripts, and
3. identify opportunities and trends within the publication of governmental and nonprofit topics.

Our descriptive analysis has the potential to be useful to a variety of stakeholders. Scholars currently conducting research in this area may readily identify those journals most likely to publish governmental or nonprofit manuscripts. Faculty seeking promotion can compare publication rates with their institution's journal expectations and decide whether to pursue research in governmental or nonprofit topics. Tenure review committees may use the analysis to identify "best in area" publication outlets. Finally, researchers may use our analysis of governmental and nonprofit subject matter to identify research opportunities in undeveloped areas.

We believe our analysis, which examines actual publication rates, complements an earlier study examining perceived publication rates among governmental and nonprofit researchers. [Lowensohn and Samelson \(2006\)](#) surveyed members of specialized interest sections of the American Accounting Association for the purpose of identifying journals perceived by section members to be consistent publishers of high quality research in their area. Among these were members of the Government and Nonprofit (GNP) section. Lowensohn and Samelson reported that members of the GNP section are notably different than most other sections in that fewer than 9% perceived any of the accounting discipline's top tier journals as consistent publishers of their manuscripts. Our analysis provides a means to evaluate the accuracy of these perceptions.

1. METHODOLOGY

1.1. Journal Selection

We use the journal list provided by Glover, Prawitt, and Wood (2006) because it is the most recently published ranking and because the authors found their list to be consistent with four earlier studies of rankings of accounting journals. Glover, Prawitt, and Wood ranked journals based on a survey of American Accounting Association members and rankings used by the *Financial Times* to rate business schools. The journals are presented in four categories: *top 3*, *top 6* (4 through 6), *top 15* (7 through 15), and *top 25* (16 through 25). Journals are presented in alphabetical order within each of the four categories.¹

All of the journals appearing in the Glover, Prawitt, and Wood study are intended primarily for academic audiences. Therefore our findings should not be interpreted as representative of journals in general, especially those directed to practitioners. Nine of the journals specialize in a single subject matter, including two that specialize in issues related to accounting education. Three of the journals are mixed discipline: *Journal of Business Finance and Accounting* and *Review of Quantitative Finance and Accounting* publish the majority of manuscripts in the area of finance, while *National Tax Journal* is commonly listed among the leading economics journals.

Two of the journals listed by Glover, Prawitt, and Wood are also identified in the Lowensohn and Samelson (2006) survey of members of the American Accounting Association's GNP section as consistent outlets for governmental and nonprofit manuscripts. *Journal of Accounting and Public Policy* and *Research in Governmental and Nonprofit Accounting* received the highest ratings among members of the GNP section. Lowensohn and Samelson reported that two other journals were cited by ten or more GNP section respondents: *Journal of Government Financial Management* and *Journal of Public Budgeting, Accounting and Financial Management*. We elected not to include these in our analysis because neither journal appears among published rankings of the top 50 journals. In the case of *Journal of Government Financial Management*, the journal is published by the Association of Government Accountants and is intended primarily for a practitioner audience.

1.2. Manuscript Classification

We examined every volume of the 25 journals published in calendar years 1996–2005 and classified each manuscript. Editors' comments, discussants'

remarks, authors' replies, and similar supplementary items were not classified and do not appear in the tables presented here. Similarly book reviews, dissertation summaries, educational cases, and instructional materials are not included in our analysis.

We followed a two-step process in classifying manuscripts. Initially manuscripts were classified as (1) governmental, (2) nonprofit, or (3) neither governmental nor nonprofit. We encountered relatively few problems classifying manuscripts in this first-stage analysis. The one exception was studies examining accounting and reporting issues by health care organizations. In some cases, the samples included both public and private sector hospitals. Our practice was to classify these as "nonprofit," the more common ownership form.

The second stage involved classifying manuscripts by subject matter within the previous three categories. Subject matter classifications include:

- financial reporting,
- executive compensation,
- auditing,
- taxation,
- systems,
- managerial,
- pedagogical, and
- other.

For example, a study of corporate audit fees would be classified as "neither governmental nor nonprofit" and then subclassified by subject area as "auditing." In contrast, a study of municipal audit fees would be classified as "governmental." No manuscript has more than one classification with the result that the study of municipal audit fees, although dealing with an auditing subject, would not be reported with studies of corporate audit fees within any of our analyses.² The appendix presents examples of subject matter content among manuscripts classified as governmental or nonprofit in the first stage.

It is common that manuscripts deal with subject matter relevant to multiple subject areas. In these cases, we classified the manuscript by what we judged to be the primary research question. For example, studies dealing with the reporting of deferred taxes are classified as "financial reporting" rather than "taxation." We found that the majority of manuscripts published in *Journal of Business Finance and Accounting* and *Review of Quantitative Finance and Accounting* address research questions primarily in finance rather than accounting. Similarly, many of the manuscripts

appearing in *National Tax Journal* analyze economic issues, rather than accounting and reporting. Manuscripts deemed to be primarily finance or economics are classified as “other.”

Studies where the primary purpose was to improve research methods, such as improvement in measurement or statistical analysis, are also classified as “other.” Historical analyses and studies of publication rates, job satisfaction, job performance, or gender and culture are also classified as “other.” These factors account for most of the manuscripts classified in this manner in *Accounting Organizations and Society*, *Behavioral Research in Accounting*, *Journal of Accounting Literature*, *Abacus*, and *Accounting and Business Research*.

2. RESULTS

Table 1 presents publication rates by subject matter among the 25 leading journals identified by Glover et al. (2006). Panel A reports the proportion (%) and panel B reports the overall frequency. More than 30% of the published manuscripts address issues of corporate financial reporting. As expected, proportions are concentrated in a single subject for the specialized journals. The list of 25 journals includes 1 (each) specializing in the area of systems, auditing, managerial, and government/nonprofit. There are three journals concentrating in taxation and two dedicated to accounting education.

Within the United States, total government expenditures exceed 30% of gross domestic product with an additional 5% attributable to nonprofit organizations. Although the public and nonprofit sectors are significant parts of the United States and other western economies, only 3% of published manuscripts address accounting or reporting issues of these sectors. Among the consensus top three academic journals, the proportion of governmental and nonprofit manuscripts is 1.2% for both *Journal of Accounting and Economics* and *The Accounting Review* and 0.6% for *Journal of Accounting Research*. Seven (28%) of the journals published no governmental or nonprofit manuscripts in the 10-year period.

We found that the proportion of governmental and nonprofit manuscripts exceeded 10% in 2 journals: *Journal of Accounting and Public Policy* (17%) and *Research in Governmental and Nonprofit Accounting* (100%). Perhaps surprisingly, *Accounting, Organizations and Society* published more governmental manuscripts (a total of 23) over the 10-year period than any journal other than *Research in Governmental and Nonprofit Accounting*. *Accounting, Organizations and Society* was not identified in the Lowensohn and Samelson (2006) survey as a consistent publisher of governmental manuscripts. Since

Table 1. Publication Rates by Subject Matter among 25 Leading Accounting Journals for the Ten Years Ending 2005.

Journal	Governmental and Nonprofit Manuscripts		All Other Manuscripts							
	Government	Non-profit	Financial reporting	Executive compensation	Auditing	Taxation	Systems	Managerial	Pedagogical	Others
<i>Panel A: Percentage</i>										
<i>Journal of Accounting and Economics (%)</i>	0%	1%	71%	17%	4%	4%	0%	2%	0%	1%
<i>Journal of Accounting Research (%)</i>	1	0	65	7	16	5	0	4	1	1
<i>The Accounting Review (%)</i>	0	1	57	8	21	5	1	5	0	2
<i>Accounting Organizations and Society (%)</i>	7	0	10	13	43	2	1	0	0	23
<i>Contemporary Accounting Research (%)</i>	1	0	42	3	28	7	0	15	0	5
<i>Review of Accounting Studies (%)</i>	0	0	72	2	3	1	0	18	0	5
<i>Accounting Horizons (%)</i>	1	2	54	1	19	2	1	4	1	16
<i>Auditing: A Journal of Practice and Theory (%)</i>	1	1	0	0	97	0	0	0	0	2
<i>Behavioral Research in Accounting (%)</i>	1	1	8	1	30	3	2	13	0	41
<i>Journal of Accounting and Public Policy (%)</i>	12	5	36	1	17	3	5	4	0	16
<i>Journal of Accounting Auditing and Finance (%)</i>	0	2	53	4	17	3	1	2	0	18

<i>Journal of Accounting Literature (%)</i>	0	5	32	0	27	5	0	9	0	23
<i>Journal of Business Finance and Accounting (%)</i>	0	0	24	2	4	2	0	1	0	68
<i>Journal of the American Taxation Association (%)</i>	1	4	1	1	0	87	0	0	4	2
<i>National Tax Journal (%)</i>	1	1	1	0	0	61	0	0	0	37
<i>Abacus (%)</i>	5	0	55	0	9	1	0	5	0	26
<i>Accounting and Business Research (%)</i>	3	1	45	1	15	2	2	10	0	22
<i>Advances in Accounting (%)</i>	0	0	36	2	32	1	1	9	4	15
<i>Advances in Taxation (%)</i>	0	0	0	0	0	90	0	0	2	7
<i>Issues in Accounting Education (%)</i>	0	0	0	0	0	0	0	0	91	9
<i>Journal of Accounting Education (%)</i>	0	0	0	0	0	0	0	0	93	7
<i>Journal of Information Systems (%)</i>	0	0	0	0	0	0	89	0	3	8
<i>Journal of Management Accounting Research (%)</i>	0	3	1	3	0	0	2	81	0	8
<i>Research in Governmental and Nonprofit Accounting (%)</i>	87	13	0	0	0	0	0	0	0	0
<i>Review of Quantitative Finance and Accounting (%)</i>	0	0	19	2	1	0	0	1	0	76
Overall Percentage	2%	1%	31%	3%	15%	11%	2%	5%	6%	23%

Table 1. (Continued)

Journal	Governmental and Nonprofit Manuscripts		All Other Manuscripts							
	Government	Non- profit	Financial reporting	Executive compensation	Auditing	Taxation	Systems	Managerial	Pedagogical	Others
<i>Panel B: Frequency</i>										
<i>Journal of Accounting and Economics</i>	1	2	181	43	10	11	0	5	0	2
<i>Journal of Accounting Research</i>	2	0	219	22	55	18	1	13	2	4
<i>The Accounting Review</i>	0	4	188	27	68	17	3	16	0	7
<i>Accounting Organizations and Society</i>	23	0	34	45	145	6	5	0	1	78
<i>Contemporary Accounting Research</i>	2	0	121	9	81	19	0	44	0	14
<i>Review of Accounting Studies</i>	0	0	133	4	5	2	0	33	0	9
<i>Accounting Horizons</i>	4	5	160	2	57	6	2	11	3	47
<i>Auditing: A Journal of Practice and Theory</i>	1	1	0	0	192	0	0	0	0	3
<i>Behavioral Research in Accounting</i>	1	1	8	1	29	3	2	13	0	40
<i>Journal of Accounting and Public Policy</i>	20	9	62	2	29	5	9	6	0	28
<i>Journal of Accounting Auditing and Finance</i>	0	3	98	8	31	6	2	4	0	34
<i>Journal of Accounting Literature</i>	0	2	14	0	12	2	0	4	0	10

<i>Journal of Business Finance and Accounting</i>	0	0	132	9	20	13	0	5	0	377
<i>Journal of the American Taxation Association</i>	1	5	2	1	0	118	0	0	5	3
<i>National Tax Journal</i>	5	3	3	0	0	280	0	0	0	168
<i>Abacus</i>	8	0	90	0	15	1	0	8	0	43
<i>Accounting and Business Research</i>	6	2	86	2	28	4	3	20	0	42
<i>Advances in Accounting</i>	0	0	36	2	32	1	1	9	4	15
<i>Advances in Taxation</i>	0	0	0	0	0	74	0	0	2	6
<i>Issues in Accounting Education</i>	0	0	0	0	0	0	0	0	127	12
<i>Journal of Accounting Education</i>	0	0	0	0	0	0	0	0	152	11
<i>Journal of Information Systems</i>	0	0	0	0	0	0	93	0	3	8
<i>Journal of Management Accounting Research</i>	0	3	1	3	0	0	2	70	0	7
<i>Research in Governmental and Nonprofit Accounting</i>	35	5	0	0	0	0	0	0	0	0
<i>Review of Quantitative Finance and Accounting</i>	1	0	71	6	5	1	0	3	1	281
Total Count	110	45	1,639	186	814	587	123	264	300	1,249

Accounting, Organizations and Society is consistently ranked among the top six accounting journals, our findings suggest the perception that top journals are not open to governmental manuscripts is not wholly accurate.

Table 2 presents the frequency of governmental and nonprofit manuscripts published in 25 leading journals by subject matter. Manuscripts addressing financial reporting issues constitute the largest proportion (43%), followed by managerial (22%) and auditing (17%). Notable is the absence of any published manuscripts examining educational issues in governmental and nonprofit accounting.³

This analysis is also useful in identifying the contribution of *Accounting, Organizations and Society* in publishing governmental manuscripts. Most of the governmental manuscripts published by the journal are classified as managerial (65%). Although it is difficult to characterize these, most commonly the manuscripts deal with measuring the cost of public services, the effect of privatizing public services, and budgeting.

Our final analysis is presented in Table 3. This table provides separate panels for governmental and nonprofit manuscripts. It also facilitates a comparison of the five-year periods ending in 2000 and 2005. Panel A presents an analysis of governmental manuscripts by subject matter. To be expected, there are no manuscripts in the area of taxation. In most areas, there is little change between the two time periods. The higher number of financial reporting manuscripts in the 1996–2000 period is attributable to a special issue of *Research in Governmental and Nonprofit Accounting* (Vol. 9, 1996) that published 12 manuscripts classified as “financial.” These manuscripts provided descriptive analyses of governmental accounting practices in varying countries.

Panel B provides a similar analysis of nonprofit manuscripts. Comparison between the two time periods reveals an increase in the frequency of nonprofit manuscripts being published. This increase is largely attributable to the increase in the number of manuscripts examining the taxation and tax-reporting requirements of nonprofit entities. The 1996 *Taxpayer Bill of Rights Act* and 1999 IRS rules interpreting the Act’s reporting requirements have almost certainly contributed to this increase by providing greater access to Form 990 data.

3. DISCUSSION

There is a common perception among accounting academics of a bias among leading academic journals against governmental and nonprofit manuscripts. This perception is documented in survey results of American Accounting Association members collected by Lowensohn and Samelson

Table 2. Frequency of Governmental and Nonprofit Manuscripts by Subject Matter among 25 Leading Accounting Journals for the Ten Years Ending 2005.

Journal	Financial Reporting	Executive Compensation	Auditing	Taxation	Systems	Managerial	Pedagogical	Others	Total
<i>Journal of Accounting and Economics</i>	1	1						1	3
<i>Journal of Accounting Research</i>						2			2
<i>The Accounting Review</i>		1		2		1			4
<i>Accounting Organizations and Society</i>	4		3		1	15			23
<i>Contemporary Accounting Research</i>			2						2
<i>Review of Accounting Studies</i>									0
<i>Accounting Horizons</i>	7		2						9
<i>Auditing: A Journal of Practice and Theory</i>			2						2
<i>Behavioral Research in Accounting</i>			1			1			2
<i>Journal of Accounting and Public Policy</i>	15		5		1	5		3	29
<i>Journal of Accounting Auditing and Finance</i>	3								3
<i>Journal of Accounting Literature</i>	2								2
<i>Journal of Business Finance and Accounting</i>									0
<i>Journal of the American Taxation Association</i>				4				2	6
<i>National Tax Journal</i>	3			3				2	8
<i>Abacus</i>	4		1			3			8
<i>Accounting and Business Research</i>	3		3			1		1	8
<i>Advances in Accounting</i>									0
<i>Advances in Taxation</i>									0
<i>Issues in Accounting Education</i>									0
<i>Journal of Accounting Education</i>									0
<i>Journal of Information Systems</i>									0
<i>Journal of Management Accounting Research</i>						3			3
<i>Research in Governmental and Nonprofit Accounting</i>	25		8			3		4	40
<i>Review of Quantitative Finance and Accounting</i>								1	1
Total Count	67	2	27	9	2	34	0	14	155

Table 3. Frequency of Governmental and Nonprofit Manuscripts by Subject Matter among 25 Leading Accounting Journals for the Ten Years Ending 2005.

	Frequency of Manuscripts for the Five Years Ending 2000	Frequency of Manuscripts for the Five Years Ending 2005	Total
<i>Panel A: Governmental</i>			
Financial reporting	32	16	48
Executive compensation	–	–	–
Auditing	13	10	23
Taxation	–	–	–
Systems	1	1	2
Managerial	16	11	27
Pedagogical	–	–	–
Others	5	5	10
Total Count	67	43	110
<i>Panel B: Nonprofit</i>			
Financial reporting	10	9	19
Executive compensation	–	2	2
Auditing	1	3	4
Taxation	1	8	9
Systems	–	–	–
Managerial	4	3	7
Pedagogical	–	–	–
Others	3	1	4
Total Count	19	26	45

(2006). We examined the frequency of governmental and nonprofit manuscripts published in 25 leading academic accounting journals for the 10-year period ending in 2005. Overall our analysis indicates that governmental and nonprofit manuscripts represent 3% of the total published studies appearing in these journals over that period. Seven of the 25 journals published no governmental or nonprofit articles over this 10-year period. Since the Governmental and Nonprofit Interest section membership represents 5.6% of the total membership of the American Accounting Association, our results could be interpreted as supporting this perception of bias.⁴

While our analysis supports perceptions of publication rates in general, actual publication rates differ from perception with regard to one highly ranked journal. Lowensohn and Samelson report that GNP section members perceive none of the discipline's highly ranked journals to be consistent publishers of governmental or nonprofit manuscripts. In contrast,

our analysis finds that *Accounting, Organizations and Society* published more governmental manuscripts (a total of 23) over the 10-year period than any journal other than *Research in Governmental and Nonprofit Accounting*.

Although the information we compiled is not suitable for multivariate analysis, we hope the descriptive analysis appearing in our tables provides benefit to individuals performing or evaluating research in the governmental and nonprofit areas. Although 18 of the 25 journals examined published some governmental and nonprofit manuscripts, only 3 journals published at a rate exceeding 1 manuscript per year. Clearly those journals should be the focus of scholars conducting research in these areas. Untenured faculty at institutions that reward publications in the *top 3* journals (to the exclusion of all others) should view governmental and nonprofit research as perilous. Untenured faculty at institutions with a broader definition of scholarship may use our analysis to build a case to have certain journals classified as “best in area” journals. Finally, we hope that our analysis reveals areas of neglect in the governmental and nonprofit bodies of knowledge that will attract future research.

NOTES

1. The tables presented here display journals in the same order as Glover, Prawitt, and Wood.

2. Totals by subject matter may be obtained by summing the subject matter columns of *Table 1* (Panel B) for manuscripts that are neither governmental nor nonprofit with the subject matter columns of *Table 2* for manuscripts that are governmental or nonprofit.

3. Recall that cases and instructional resources are not included in our analysis.

4. We would like to express our appreciation to Roland LaTulip, AAA *Director of Finance and Administration* for providing membership information.

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**APPENDIX. EXAMPLE SUBJECT MATTER CONTENT
OF MANUSCRIPTS CLASSIFIED AS
GOVERNMENTAL AND NONPROFIT AMONG 25
LEADING ACCOUNTING JOURNALS FOR THE 10
YEARS ENDING 2005**

	Governmental Manuscript Examples	Nonprofit Manuscript Examples
Financial reporting	Municipal bond pricing Comparative analyses by country Determinants of disclosure quality Bond insurance Nonfinancial performance reporting	Donations and measures of financial performance Financial ratios Determinants of disclosure quality
Executive compensation	None noted	Nonprofit manager compensation and measures of financial performance
Auditing	Audit pricing Auditor choice/quality Audit delay Performance auditing	Audit pricing Auditor choice/quality
Taxation	N/A	Unrelated business income tax
Systems	Information security Systems development	None noted
Managerial	Budgeting and cost control Effect of regulatory environment (including privatizing public services) Measuring the cost of public services	Budgeting and cost control Effect of regulatory environment
Pedagogical	None noted	None noted
Other	Historical analyses Pension funding Government savings Methodological improvements	Literature reviews Determinants of service mix

SECTION II
THEORIES OF
NOT-FOR-PROFIT ACCOUNTING:
COMPARISON AND APPLICATION
OF CURRENT AND PROPOSED
REPORTING FRAMEWORKS

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OVERVIEW

The role of not-for-profit entities has been well recognized in modern societies. Yet, the theoretical development of accounting for governmental and not-for-profit entities does not have the depth that is present in theories relevant to for-profit entities. Contributing to this state of affairs is the lack of consensus as to why nongovernmental and not-for-profit organizations exist. We begin by describing the various theories that have been proposed and attempt to develop a framework that takes into account the underlying economic and social foundations unique to this “third sector.” In the United States, two standard setting bodies have jurisdiction over not-for-profit entities. Commercial and not-for-profit entities share a single standard setting body, the Financial Accounting Standards Board (FASB) that recognizes the need for somewhat different concepts and reports for commercial and not-for-profit organizations. Separately, the Governmental Accounting Standards Board (GASB) determines accounting principles and procedures for state and local governmental entities and its prescribed accounting differs from that of the FASB. Finally, two substantially complete alternate frameworks have been proposed in the accounting literature by Robert Anthony and Robert Mautz.

To illustrate these alternative approaches, we compare, analyze, and evaluate the existing and proposed accounting concepts that give rise to differences between commercial, governmental, and not-for-profit accounting practices in a theoretical framework that considers the unique economic and social characteristics of the not-for-profit sector. A set of economic events relevant to a museum is developed and financial statements are prepared in accordance with the various models. Key elements unique to this sector such as contributions, collections, depreciation, and endowments can all be readily illustrated in the context of a museum.

This case study analysis permits an assessment of the different approaches as a step toward determining which standards might best serve the needs of the users of not-for-profit financial statements. The financial statements are

evaluated based on criteria commonly espoused in the literature including decision usefulness, stewardship, and public accountability.

Our discussion is organized as follows:

Chapter 1 – Introduction

Chapter 2 – Theories of Accounting for Nonbusiness Entities

Chapter 3 – The FASB Model with example

Chapter 4 – The GASB Model with example

Chapter 5 – Anthony’s Proposed Accounting Model

Chapter 6 – Mautz’s Proposed Accounting Model

Chapter 7 – Comparison of Financial Statements

Appendix: Transactions underlying the example

CHAPTER 1

INTRODUCTION

Charitable organizations are part of a varied population of entities that operate somewhere between the market and the state. Various described as nonprofit, not-for-profit (NFP), tax-exempt, eleemosynary, or nongovernmental, these organizations play an important role in civil society and constitute a “third sector,” also known as the independent sector, the voluntary sector, philanthropic sector, or the social sector of the economy. More recently the term “civil society organization” (CSO) is used by a growing number of organizations (Glasius, Kaldor, & Anheier, 2005). Despite its size and its important role in democracy, this third or voluntary sector remains the “lost continent” on the social landscape of modern society (Salamon & Anheier, 1999). Likewise, the financial accounting and reporting needs of organizations in this sector have taken a backseat to those of commercial and governmental entities. This monograph draws together the various theories and approaches to NFP accounting and evaluates the relevance of the various frameworks to financial statement users.

Theories and concepts relevant to accounting for governmental and NFP organizations do not have the depth that is present in literature and research regarding commercial or for-profit entities. Sunder (1999, p. 4) observes that research in the NFP sector occupies a mere 1 percent of professors’ time. In the United States, the Financial Accounting Standards Advisory Committee (FASAC) rarely puts NFP accounting issues as priority items that need the attention of the Financial Accounting Standards Board (FASB). On the international scene, there are bodies dedicated to establishing globally accepted standards for commercial accounting, the International Accounting Standards Board (IASB), and for public sector or governmental entities, the International Public Sector Accounting Standards Board (IPSASB). There is, as yet, no international standard setting organization with a focus on the unique needs of charitable organizations and other voluntary associations. We argue NFP organizations are no longer the private sector’s poor cousins since they constitute a significant “industry” group for which there is little coherent accounting theory. Theories regarding the existence

and purpose of a voluntary sector separate and distinct from private commerce and government are set forth to lay a foundation from which the unique characteristics of these entities can be examined.

1.1. GROWTH AND DEVELOPMENT OF THE VOLUNTARY SECTOR

In the United States, NFP organizations are established under the laws of the various states. They exist to provide a public benefit within a private entity that does not operate to earn a profit and which lacks ownership interest that can be redeemed, transferred, or sold. Additionally, a NFP organization is considered to be *tax-exempt* if such status has been applied for and granted by the Internal Revenue Service (IRS). In 2006, there were over 1.9 million nonprofit organizations in the United States (IRS, 2006).¹ These organizations are sometimes referred to as the independent sector to emphasize their unique role in society, distinct from government and business; whereas other types of nonprofit organizations benefit the private, social, or economic interests of their members – 501(c)(3) organizations must benefit the broad public interest. In recognition of this service, Congress and state legislatures provide that contributions made to 501(c)(3) nonprofits are tax-deductible on the donors' personal or corporate tax returns.

Tax-exempt, NFP entities have grown to significant economic power in the United States. From 1987 to 2006, the number of charitable organizations registering with the IRS has grown at double the rate of the business sector (Independent Sector, 2007). When compared to other sectors of the economy, the nonprofit sector accounts for 5.2 percent of gross domestic product (GDP) and 8.3 percent of wages and salaries paid in the United States. In 2006, individuals donated \$295 billion in charitable contributions (twice the amount given in 1996) and 12.9 billion hours of volunteer labor (Wing, Pollak, & Blackwood, 2008). In addition, foundations gave \$36.4 billion and corporations gave \$12.7 billion (approximately 0.08 percent of corporate sales). In 2005, NFPs filing returns reported \$1.6 trillion in revenues and \$3.4 trillion in assets (Wing et al., 2008). The finances of nonprofit organizations also grew at a healthy rate from 1995 to 2005. Although the U.S. GDP increased by 35 percent over this period after adjusting for inflation, revenues and assets of NFPs increased by at least 54 percent with assets showing an increase of approximately 77.1 percent (Wing et al., 2008). The revenues of NFP organizations come from a variety

of sources. For nonprofit institutions serving households (NPISHs), the single most important source of revenue is dues and fees charged for services which accounted for 69.7 percent of total 2006 revenues. The remaining sources include contributions and grants at 25.9 percent and income from assets held at 4.5 percent of total revenues (Wing et al., 2008).

In other countries, NFP organizations are more commonly called *nongovernmental organizations* or NGOs. NGOs are legally constituted nonprofit organizations created to provide services or advocate public policy on a local, national, or international level and have no participation or representation by any government. In their study of 35 countries for which data was available, Salamon and Anheier (1999) found that the nonprofit sector accounted for a cumulative total of 39.5 million full-time workers. Putting these figures into context, they conclude that if the nonprofit sector in these countries was a separate national economy, its expenditures would make it the seventh largest economy in the world. Anheier, Glasius, & Kaldor (2001) places the number of internationally operating NGOs at 40,000. National numbers are even higher. For example, the Russian Duma found that more than 450,000 NGOs operate in Russia and there may be as many as 600,000 other NGOs working in the country without official registration (Flounders, 2006). Since India became independent in 1947, the number of NGOs in India has multiplied with estimates ranging from one to two million NGOs in operation (Sooryamoorthy & Gangrade, 2001). In Kenya alone, some 240 NGOs come into existence every year (NonprofitExpert.com, 2007). The United Nations Development Programme estimates that 250 million people in developing countries around the world are helped in some way by the work of NGOs (Kabir, 2000).

NFP organizations and voluntary action are at least as ancient as markets and states and may predate both (Lohmann, 1992, p. 87). However, the recognition of the existence of a voluntary sector is relatively recent and remains dependent, to some extent, on the legal system of particular countries. In the United States, recognition of nongovernmental entities that serve the public interest developed in the latter part of the 18th century and the early part of the 19th century and coincided with the changing views on religious freedom and the separation of church and state (Neem, 2003). During this early period, most NFP corporations were small and received a substantial portion of their support from a few wealthy donors. The number of private NFP corporations grew gradually during the early 20th century with an estimated 50,000 tax-exempt charitable organizations by 1950. However, the economics were changing as smaller contributions from the

middle class became essential to the survival of many NFP agencies (Figlewicz, Anderson, & Strupeck, 1985). Explosive growth following World War II also led to increasing congressional concern regarding tax policy. At that point in time, little academic research had been done on any aspect of philanthropy.

The establishment of the Commission on Private Philanthropy and Public Needs (known as the Filer Commission) in 1973 was the first step toward a broad recognition of the growing importance and influence of the estimated 700,000 charitable organizations, which existed at that time (Hall, 1995). Research in the area was also enhanced by the formation of the Association of Voluntary Action Scholars at about the same time (Smith, 2003).

1.2. THEORIES OF THE VOLUNTARY SECTOR

The increased interests in private NFP entities during the latter part of the 20th century led to the development of a number of theories to explain why these organizations are created, supported, and survive. The early theories were generally grounded in economics with the idea that NFP entities exist because of market or government failures. Unfortunately, most functional definitions explain what is not included and focus on how NFP entities differ from proprietary or governmental entities rather than positive descriptions of what they are and do. An overview of various theories is presented in the paragraphs that follow.

Weisbrod (1975, 1977) offers the first economic theory by suggesting that NFPs serve as private providers of public goods, as economists define the term.² He argues that government entities provide public goods at the level that satisfies the median voter. The NFP entity steps in to meet the needs of individuals that prefer a different level or mix of public goods. This public goods theory is incomplete since many NFP organizations provide private goods that benefit specific individuals. Examples include many types of health care organizations (hospitals, nursing homes, etc.) as well as educational institutions at all levels from pre-school to private colleges.

Contract failure theory was first discussed by Nelson and Krashinsky (1973) in the context of child care services and more fully developed by Hansmann (1980). Hansmann argues that NFP entities arise in situations where consumers are unable to accurately evaluate the quantity or quality of services provided. Consumers prefer the NFP form since they know that those who control the entity cannot personally benefit from providing low quality services. The lack of owners and the nondistribution constraint

inherent to the NFP form means managers have less incentive to take advantage of their customers than would be the case in proprietary for-profit entities. In essence, contract failure theory identifies the NFP corporation as a response to agency problems and information asymmetries. This theory has merit but fails to explain certain types of mutual NFPs, such as country clubs.

Ben-Ner (1986) argues that most NFP organizations are formed to provide patrons or consumers with direct control over the entity from which they purchase goods or services. This argument is also related to asymmetric information. However, in this case, patron control provides a means of eliminating the problem rather than just relying on the nondistribution constraint to curtail incentives to exploit asymmetries. Te'eni and Young (2003) provide a concise review of how the nature of the goods and services provided are associated with NFP entities and affected by agency problems. Table 1.1 is adapted from their paper.

Economic theories derive from the study of markets and business enterprises conducted for private benefit. Political science derives from the study of government and the provision of public goods. Political theories of the voluntary sector seek to identify the environmental niche in which NFP

Table 1.1. Roles of Not-for-Profit Entities.

Type of Goods	Definition	Role of Not-for-Profit Entities
Private goods	Consumers can be excluded from the use of private goods unless they pay. Example, nursing home	In situations of information asymmetry between consumers and suppliers, the less informed consumers rely on not-for-profit organizations
Public goods	Consumers cannot be excluded from enjoying the benefits of public goods once they are made available. Example, public radio	In situations of heterogeneous preferences and information asymmetry between consumers and government, not-for-profit organizations provide public goods on a voluntary basis
Government-financed services	Nonprofit organizations provide goods financed by the government. Example, social services	In situations of heterogeneous needs and information asymmetry between consumers and government, and between government and private suppliers, government relies on not-for-profit organizations as trustworthy agents to provide locally responsive services or to oversee other suppliers

Source: Adapted from Te'eni & Young (2003).

organizations exist. However, “devising a political analogue to market failure bristles with difficulties” (Douglas, 1987, p. 43) since the environmental niche for government entities is unclear. Public entities must be responsive to values and choices of the majority of citizens without trampling on the rights of minorities. As discussed by Weisbrod (1975, 1977), a combination of public and voluntary private provision of goods and services can accommodate the views and preferences of more (heterogeneous) individuals. Most political theories of the voluntary sector are also concerned with the free-rider problem since only the government, through use of its coercive powers, can avoid the problem. Bozeman (1989) argues that all organizations are “public” to one degree or another. In other words, society authorizes the existence of private property rights and this makes even proprietary for-profit businesses accountable.

Although interesting, both economic and political theories of why NFP entities exist fail to adequately explain why, in some industries, services are concurrently provided by governments, proprietary for-profits, and private NFPs. Health care and education are cases in point. Further, from an international perspective, services provided in the United States by NFP entities are more commonly provided by the governmental entities in many countries.

The difficulties encountered in explaining the existence and role of NFP entities result from the extreme diversity of organizations and missions that comprise the voluntary sector. Tax-exempt status or legal auspices (as a private NFP corporation) may not be sufficient to meaningfully identify voluntary sector entities for purposes of public policy, management practices, or accounting and reporting needs. Several attempts at taxonomy schemes have been published, but it is probably most accurate to consider society as a continuum of organizational forms. Table 1.2 refers to the voluntary sector as “the commons.” Under the theory of the commons

Table 1.2. Comparison of Commons, Markets, and State.

	Commons	Market	State
Participation Purpose	Uncoerced Shared (common goods)	Uncoerced Maximization (private goods)	Coercive Authoritative (public goods)
Resources	Common	Private	Public
Reciprocity	Mutuality	Quid pro quo	Equity
Social relations	Fairness	Caveat emptor	Law

Source: Based on Lohmann (1992).

Table 1.3. A Four-Way Categorization of Not-for-Profit Firms.

		Nature of Organizational Control	
		Mutual (patrons elect directors)	Entrepreneurial (self-perpetuating board)
Source of income	Donative	I. Common Cause, National Audobon Society, and political parties	II. CARE, March of Dimes, and Art Museums
	Commercial	III. American Automobile Association, Consumer Union (publishes <i>Consumer Reports</i>), and Country clubs	IV. National Geographic Society, Educational Testing Service, Hospitals, and Nursing Homes

Source: Adapted from Hansmann (1987).

(Lohmann, 1992), society is composed of four fundamental institutional sectors: households, markets, the state, and the commons. A commons can be thought of as an economic, political, and social space outside the market, households, and state in which associative communities create and reproduce social worlds.

In contrast, Table 1.3 identifies four types of entities in the voluntary sector based on two factors: source of income and nature of control. NFP firms that derive income primarily or exclusively from the sale of goods and services are called *commercial NFPs*, and those that derive a substantial portion of revenues from donations are called *donative NFPs*. Control of the organization by its patrons (customers in a commercial NFP) is referred to as mutual control, whereas control of the organization by a self-perpetuating board of directors is referred to as entrepreneurial control. Thus, there are four categories of NFPs: commercial mutual, donative mutual, commercial entrepreneurial, and donative entrepreneurial. Of course, the boundaries are blurred since many NFP entities are highly dependent on both commercial activities and donations.

Anthony, in his research study for the FASB, uses a similar classification of entities based on revenue sources (see Table 1.4). He used Type A and Type B rather than business and nonbusiness to avoid the potential implication that one type of NFP was superior (more efficient) to the other. Falk provides another classification scheme intended as a basis for the development of accounting theory that is more strongly rooted in the theories of the voluntary sector. Table 1.5 illustrates Falk's (1992) taxonomy that takes into account both the nature of goods and services provided and

Table 1.4. Continuum of Nonprofit Entities Based on Source of Financial Resources.

Business-type Activities	← ————— →	Nonbusiness Activities
Profit-oriented	Type A nonprofit	Type B nonprofit
For-profit organizations obtain financial resources from the sale of goods and services with the intention of generating profits for distribution to owners	Nonprofit organizations that obtain financial resources primarily from the sale of goods and services but are constrained by law from distributing any profits	Nonprofit organizations that obtain significant portion of financial resources from sources other than the sale of goods and services

Source: Derived from Anthony (1978).

Table 1.5. A Continuum of Not-for-Profit Organizations.

		Utilities of patrons and beneficiaries	
		Interdependent (clubs)	Not interdependent (nonclubs)
Nature of goods and services	Producers of collective goods or services	(a) Community park restricted to neighborhood residents	(b) Environmental society
	Producers of private goods or services	(c) Employee union-owned cafeteria restricted to union members	(d) Soup kitchen

Source: Derived from Falk (1992).

the utilities of the entity’s patrons and beneficiaries. Each dimension is actually a continuum. An example of an organization that is “an interior point on both continuums is an art gallery with open-ended membership that charges an entrance fee for nonmembers” (Falk, 1992, p. 490).

1.3. NOT-FOR-PROFIT ACCOUNTING AND ACCOUNTABILITY

NFP entities received little attention from the accounting profession until the latter part of the 20th century. Hackett, writing in 1933, blamed the lack

of development of governmental and institutional accounting on inadequate education. He pointed to the American Institute of Certified Public Accountants (AICPA) predecessor's (American Institute of Accountants) lack of interest as demonstrated by the rarity of coverage of governmental and nonprofit accounting questions on the professional examinations. By 1948, Morey was able to report that the majority of recent exams had included at least one question on governmental accounting so that "no candidate for the CPA certificate can safely undertake to sit at one of these examinations without a reasonable understanding of this subject" (Morey, 1948, p. 233).

Historically, the accounting profession allowed nonprofit and governmental organizations to develop accounting practices which it would then review and endorse. Henke (1972) offers two reasons for this approach. First, he contends that limited amount of resources had been committed to NFP enterprises, which purportedly caused accountants to give much less attention to their accounting practices vis-à-vis profit-oriented enterprises. Second, the profession "has not really faced up to the problem of trying to convey to constituent groups of these organizations the data which would disclose the operational stewardship of the management of these entities" (Henke, 1972, p. 52).

Gross (1977) suggests that the accounting profession's continued apathy was due to (1) the low profile of nonbusiness organizations, (2) the belief by outsiders that the organizations were performing fairly well, (3) the minimal legal risks for nonbusiness audits, and (4) low audit fees charged because the audits were considered a community service. A decade later, Fetterman (1988, p. 24) was "struck by the fact that NFP organizations do not have a low profile; they have no profile" in the proposed auditing standards issued by the AICPA in 1987.

In the 1960s, there were several attempts in self-regulation that led to industry accounting manuals. *Standards of Accounting and Financial Reporting for Voluntary Health and Welfare Organizations* (the "black book") published by the National Health Council and the National Social Welfare Assembly in 1964 was one of the first. Other associations developed guidelines for hospitals, museums, and colleges and universities.³ The AICPA published a related audit guide, *Audits of Voluntary Health and Welfare Organizations*, in 1967, followed by similar audit guides for hospitals in 1972 and colleges and universities in 1973 (AICPA, 1972, 1973). The various rules embodied in the industry manuals and audit guides were not standardized for private NFPs until 1993 when the FASB issued statements 116 and 117 (FASB, 1993a, 1993b) and for public sector NFPs when the GASB issued statements 34 and 35 (GASB, 1999a, 1999b).

1.4. ORGANIZATION OF THIS MONOGRAPH

The voluntary sector has unique accountability requirements because the entities are not governed by the market forces of supply and demand that discipline proprietary for-profit firms nor the political power of voters who discipline and restrain the actions of governments. Thus, accountability is a particularly sensitive issue for charitable organizations. The brief discussion of voluntary sector theories in this chapter provides the foundation on which we explore whether unique characteristics of these NFP entities require special accounting and reporting standards.

Certainly, there are special sets of transactions that do not apply to commercial enterprises: nonreciprocal contributions and permanently restricted endowments. In addition, resource providers often place restrictions on funds to be used by governments and private NFP entities and this raises issues regarding the timing of revenue recognition and whether restricted funds must be accounted for and disclosed separately. Governments were often criticized for presenting detailed information for categories of assets and liabilities subject to different restrictions or laws and for their failure to aggregate financial information sufficiently to provide the reader with a clear overall picture. Lengthy disclosures of various funds and restrictions become too confusing to be useful. These and other special industry characteristics may or may not justify the creation of separate definitions, concepts, and reports for NFP entities.

Comparing the financial statements of nonbusiness organizations is made more difficult when there are differences in accounting standards between public and private NFP entities. Flexibility to tell one's story may be a cherished right in some jurisdictions, but the available accounting choices that organizations have under even a single set of standards can lead to comparability problems for financial statement users. However, imposing a model useful in one sector to organizations with inherently different characteristics and needs may create unnecessary costs and fail to provide information useful for managers, donors, taxpayers, and other stakeholders. Chapter 2 in Section II explores these and other theoretical issues in more depth.

Chapters 4 through 6 in Section II examine alternative frameworks. In each chapter, financial statements based on the same set of economic transactions and events are prepared in accordance with the alternative approaches. Chapters 3 and 4 in Section II describe the development of accounting standards in the United States for private NFP entities and public governmental entities, respectively. The FASB's model, based on its

conceptual framework, constitutes currently acceptable practice for non-governmental NFP organizations in the United States. It focuses on decision usefulness and emphasizes the measurement of assets and liabilities rather than current operations. The GASB's model, which constitutes currently acceptable practice for U.S. state and local governments, requires presentation of financial information from both a short-term funding perspective and a long-term entity-wide perspective.

Chapters 5 and 6 in Section II present the conceptual frameworks (theories) developed by Robert Anthony and Robert Mautz. Anthony's conceptual framework focuses on the activity statement and the measurement of operating performance. The primary difference between Anthony's proposal and FASB's conceptual frameworks is that Anthony discusses that there should be few differences between business and nonbusiness accounting and believes that the focus and emphasis of such reporting should be on the operating (or income) statement rather than the balance sheet.

In contrast, the model proposed by Mautz not only abandons the business model for all value-transferring and cost-sharing activities conducted by governmental and NFP entities, but also adds two new elements to the dialogue: "service facilities" and "commitments." His financial statements include prospective information not envisioned in any of the other theories because Mautz believes that users of NFP financial statements need this information to answer key questions about an entity.

Chapter 7 in Section II analyzes the existing and proposed theories for NFP accounting and evaluates them based on criteria including stewardship, decision usefulness, and public accountability and presents our conclusions. The transition to the use of international financial reporting standards by publicly traded companies may impact not only the existing NFP accounting standards but also lead to new standard setting bodies and processes. Our hope is that this comparison of alternative reporting models for NFP organizations and the delineation of relevant concepts can facilitate the discussions that will arise.

NOTES

1. The Internal Revenue Code defines over 27 categories of organizations exempt from federal income taxes, including private country clubs, labor unions, business associations, fraternal organizations, and many others (IRS, 2006). The majority of these organizations – approximately 1.5 million of them – make up the independent

sector, of which 1.4 million are 501(c)(3)s (public charities, private foundations, and religious congregations) and 501(c)(4)s (social welfare/advocacy organizations).

2. A public good has two characteristics. First, it costs no more to provide it for many people than it costs to provide it to a single person because one person's enjoyment does not preclude enjoyment by others. Second, there is no easy way to prevent others from enjoying the good once it has been provided to one person or group. Examples include national defense, public television, and water pollution controls.

3. For example, the National Association of College and University Business Officers (NACUBO) added a section to their manual that dealt with accounting and reporting issues in 1974.

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CHAPTER 2

THEORIES OF ACCOUNTING FOR NONBUSINESS ENTITIES

Systematic record keeping is one of several institutions necessary to sustain large group coordination. In fact, the road to modern civilizations was in part built on improvements in and additions to institutions like recordkeeping (Basu & Waymire, 2006). However, accounting theories or frameworks are a fairly recent phenomenon. Even the algebraic relationship among accounts was not explicitly discussed until the 19th century (Peragallo, 1938; Brown & Johnston, 1963). During the last half of the 1800s, the equality of accounts provided a foundation for a “science of accounts” (McMillan, 1988) mindset and gave rise to many theoretical debates such as the proprietary versus entity views toward accounting (Littleton, 1933). The desire for a theory of accounting eventually led to the 1973 initiation of a conceptual framework project by the newly formed FASB (Storey & Storey, 1998). However, there were a number of earlier attempts (Previts, 1984) that provide insights to help understand both where we have been and where we might be heading. Clearly the topic of “accounting theory” is relevant in the first decade of the 21st century as FASB and the IASB attempt to reach consensus on a conceptual framework.

This chapter presents selected theoretical concepts that interact to determine various avenues that have been taken or proposed for government and NFP accounting and reporting issues. We briefly introduce the origins of key concepts that serve as the foundation for the various proposals. Consistent with terminology in FASB’s Concept Statement No. 4 (1980), we use the term “nonbusiness” to encompass both NFP and governmental entities.

2.1. OBJECTIVES OF REPORTING: STEWARDSHIP AND DECISION USEFULNESS

Chapter 1 in Section II discusses a number of theories intended to explain the existence of NFP entities and how they differ from business or

government. The public goods theory addresses the rise of nonprofit organizations in response to governmental undersupply of public and quasi-public goods. In contrast, the trust-related theories are based on information problems inherent in the goods or services provided and the trust dilemmas associated with them. The advantage that nonprofit organizations have over for-profit firms is the signal of trustworthiness that arises from the nondistribution constraint. In contrast to theories that emphasize aspects of demand for services, entrepreneurship theories explain the existence of nonprofit organizations from a supply-side perspective.

Choosing appropriate accounting and reporting objectives depends on the primary audience for the information. It also depends on whether one believes that for-profit business entities are fundamentally different from governments and/or charitable NFP entities providing public goods. In the United States, the pattern has generally been away from a narrowly focused stewardship objective toward a notion of decision usefulness. This section discusses the associations among the concepts shown in Fig. 2.1 beginning with the nature of goods and services.

2.1.1. The Nature of Goods and Services

NFP and governmental entities provide a wide range of goods and services. Some are clearly public goods like defense, whereas others benefit both individuals and society at large such as education. The nature of the goods and services provided as well as the reciprocal or nonreciprocal nature of transactions suggests potential differences in accounting and reporting between governmental and NFP entities and their for-profit counterparts. The GASB argues that government accounting is and should be different (GASB, 2006). Anthony (1989) argues that government and NFP entities do not need conceptual frameworks different from one appropriate for for-profit entities, although taxes and donations warrant additional consideration. In other words, government and NFP entities would be treated like a specialized industry with modifications to general standards only when warranted by specific circumstances. This is also the perspective of FASB as it deals with standard setting for NFPs. As discussed in Chapter 6 in Section II, Mautz (1989) would apply a different conceptual approach based on the nature of activities: commercial activities should be treated the same regardless of the form of the entity. Accordingly, his position on the question appears to be generally consistent with that of GASB.

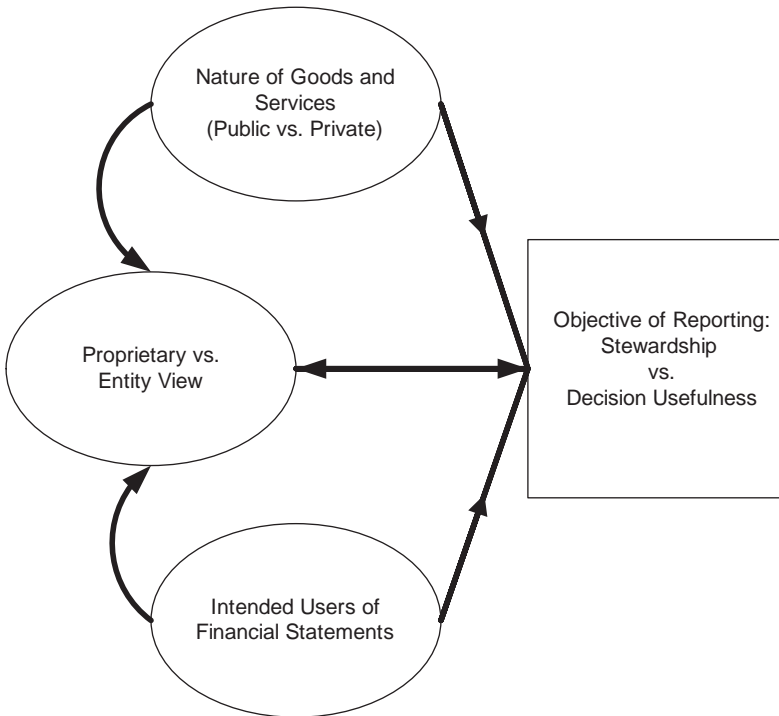


Fig. 2.1. Development of Theories on the Objectives of Financial Reporting.

2.1.2. Proprietary Theory and Intended Users

The notion of capital evolved during the 16th–18th centuries as commerce shifted from finite ventures toward continuous business enterprises which needed long-term financing (Salvary, 1979). With the concept of capital and growing understanding of the algebraic relationships among accounts, the 19th century brought about the idea that accounting should be undertaken from the point of view of the proprietor. Proprietary theory served as an integrating framework that included a measurement focus on changes in the owners' wealth. By the early years of the 20th century, the entity view became viable as an alternate framework but remnants of both persisted through out the 1900s with respect to theories of consolidation. Previts (1984, pp. 9–10) argues that the entity versus proprietary issue is

irreconcilable and that valuation issues cannot be determined until the orientation to reporting is selected.

Since governments and NFP entities do not have owners per se, including this concept in Fig. 2.1, may seem irrelevant. However, the proprietary focus is closely associated with the idea that accounting is about management's stewardship of the owners' assets. For governments and NFPs, the idea of stewardship may be even older, dating back to moral or religion-based obligations. The lack of owners also leads to the question of intended users of accounts and reports. The decision usefulness objective is clearly aligned with an outsider's view of the entity because we need to know something about the identity of decision makers and what inputs are needed for their decision models.

A proprietary orientation focuses on owners or investors. In its Concepts Statement No. 1, the FASB argues that the primary user groups for for-profit businesses are resource providers including both investors and creditors. This position is consistent with an entity perspective (FASB, 1978). For nonbusiness entities, FASB considers a broader range of potential users but maintains the focus on resource providers (FASB, 1980, Concepts Statement No. 4). However, standard setters acknowledge that resource providers to for-profit business entities expect a monetary return, whereas donors and taxpayers are significantly different because they do not necessarily expect economic benefits (donors) or they do not anticipate benefits proportionate to the resources provided (taxpayers). The Governmental Accounting Standards Board (GASB) identifies three primary user groups: the citizenry, legislative, and oversight bodies, and investors and creditors (GASB, 1987, Concepts Statement No. 1, Paragraph 30). The "citizenry" is broader than just resource providers (taxpayers) and includes the media, advocate groups, and public finance researchers (GASB, 1987, Paragraph 31). In other words, GASB is open to a broader notion of stewardship than FASB and considers public accountability essential.

Anthony (1983, p. 43) concludes that there is no reason to identify classes of users because the differences do not lead to different conceptual frameworks. Instead, he posits that the focus should be on external users who must rely on the information provided to them by management – whether or not they are current or potential resource providers. Mautz (1994, p. 13) suggests that nonbusiness financial reporting should emphasize the needs of donors and taxpayers as the primary users. All four models agree that management itself cannot and should not be the focus of financial reporting.

2.1.3. Moving Toward Public Accountability

Clearly, the objective of financial reporting may differ depending on whether one believes that government or NFP organizations are sufficiently different from for-profit business enterprises. Traditionally, financial reporting was focused on information needed to establish that management had acted properly. The original responsibilities of a steward included moral obligations and went beyond mere economic obligations (Jeavons, 1994). It is perhaps intriguing, then, that accounting theory no longer includes fairness, justice, and truth as objectives of financial reporting, unlike Dr. Scott, an early proponent of the deductive approach to the development of accounting theory (Lawrence & Stewart, 1993). Scott (1941, p. 342) argued that “because of the relationships with which it deals, accounting is most directly concerned with the principle of justice.” More recently, Chen (1975) and Ijiri (1983) both echo the need for an accountability framework to guide financial reporting, and their recommendations are not intended just for public sector entities.

At the beginning of the 21st century, the stewardship focus has largely been replaced by the decision usefulness paradigm. In its original conceptual framework, FASB argues that stewardship is part of decision usefulness but no objectives for financial reporting are explicitly derived from concepts of truth, justice, or fairness. These concepts may be implied in the conceptual framework but clearly the focus is not on stewardship responsibility toward society as a whole. In the United States, the GASB and the Federal Accounting Standards Advisory Board (FASAB) are the standard setting bodies that specify the need for public accountability. Based on the conceptual work of Anthony (1978) and the empirical work of Jones, Scott, Kimbro, and Ingram (1985), the GASB (1987, p. 13) identified four uses of municipal financial statements. They are: (a) comparing actual financial results with the budget, (b) assessing financial condition and the results of operations, (c) determining compliance with finance-related laws, rules, and regulations, and (d) evaluating both efficiency and effectiveness. Table 2.1 is reproduced from Coy, Fischer, and Gordon (2001, Fig. 2.2) and summarizes the impact of choosing between accountability and decision usefulness as the foundation for a conceptual framework.

It is logical to anticipate that nonbusiness organizations, due to their role and mission in society, should be held accountable for their actions. This accountability to the public is a central focus for governmental entities and is, to some extent, reinforced by voters and other citizens who may call the government into account for various actions. For membership

Table 2.1. Stewardship versus Decision Usefulness Frameworks.

	Accountability or Stewardship-Based Conceptual Framework	Decision Usefulness Conceptual Framework
User versus supplier	Focus is on the relationship between the supplier of accounting information and the user of accounting information (accountor/accountee)	Focus is strictly on the user of accounting information
Fundamental objective of accounting system	Fairness The qualitative characteristics are technical constraints which the system must satisfy	Usefulness The qualitative characteristics are desirable traits which require trade-offs
Key qualitative characteristics	Objectivity, verifiability, and stability	Relevance and reliability
Stability	Stability of the accounting system goes beyond consistency and comparability. It means that even if the accounting system is changed, an explicit means of reconciliation from one system to the next is maintained. Otherwise, the interests of one party can be damaged for the benefit of the other	Consistency and comparability imply a level of stability but there is no implication that a means of reconciling old and new accounting standards be maintained
Fairness	In this context, fairness is judged in relation to agreement. Without the agreed on metric, fairness cannot be determined	Not explicitly considered. Some mild echoes of fairness in the concept of neutrality or freedom from bias
Information	More information is not necessarily better. For example, subjective information may be useful to the accountee but damaging to the accountor	More information is always preferred to less as long as it is cost effective
Records or reports	Focus on both the reports and the records upon which the reports are based	Focus on the reports
Motivation of accountant	Takes into explicit consideration the accountant's desire to present information in the best possible light	The role of accountors is largely ignored

Source: Coy et al. (2001).

organizations like cooperatives or homeowners associations (“clubs” in Falk’s, 1992 terminology), the accountability requirements are similar to those of a business enterprise. Specifically, the members can ascertain the quality and quantity of services provided and have some degree of control over the entities to which they belong. However, charitable organizations like animal welfare or soup kitchens do not have owners, members, or voters. Particularly donors may have little influence over the entity when their support comes largely from numerous small gifts. The “consumers” of the services also have little direct influence over the organization. Accordingly, the need for reporting that is grounded in stewardship and public accountability takes on increased importance.

2.2. MEASUREMENT FOCUS

In this section, we discuss the concepts shown in Fig. 2.2 to explain how for-profit accounting concepts influence nonbusiness accounting. These concepts are not unrelated to those of Fig. 2.1. For example, varying opinions on the question of whether nonbusiness accounting should be a variation of commercial accounting (Section 2.1.2) would, obviously, influence opinions about the importance of income determination and capital maintenance. We very briefly explore the history of accounting to provide a foundation for the discussion.

The earliest known accounting predates the invention of writing and was primarily related to inventory records to keep track of tribute and donations to governments and temples (Carmona & Ezzamel, 2007). Agrarian societies had natural cycles related to seasons and annual floods that might have functioned as a primitive concept of periodicity: comparing inventory levels to the prior year might have provided a benchmark for declaring the crop good or bad. The focus on assets and claims on assets assumed greater importance in the Renaissance period. Capital was raised to finance trading ventures that might last several years. When a ship returned, the cargo and ship were sold, sailors were paid, and the net cash distributed. Accordingly, early double-entry accounting focused on the balance sheet, which early textbooks referred to as the goal of accounting or the most useful statement (Brown, 1975). The Industrial Revolution and ongoing continuing enterprises like factories and railroads led to the need to know whether the entity was operating successfully and producing an adequate return for investors. By 1936, the income statement was considered at least as important as the balance sheet (Brown, 1975). The focus had shifted toward

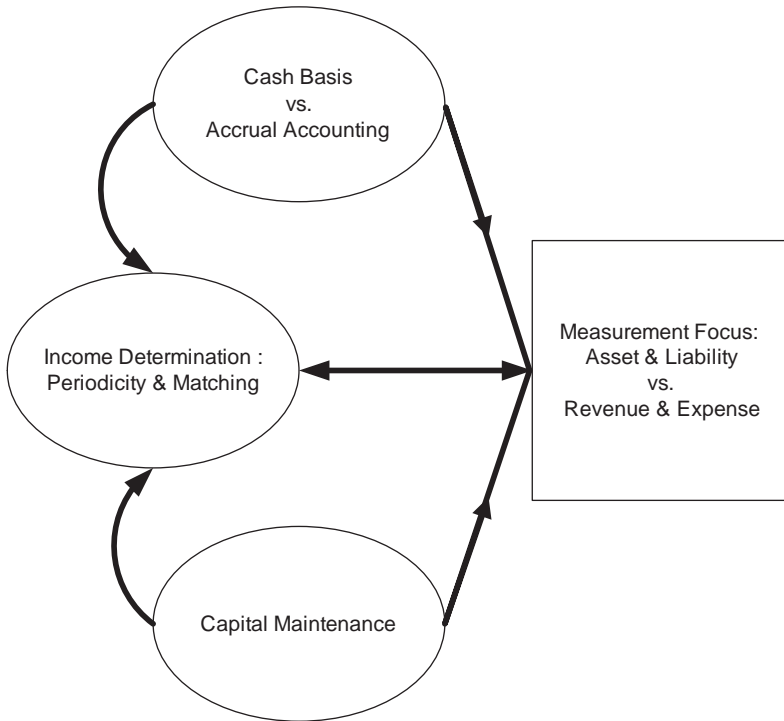


Fig. 2.2. Development of Theories on Measurement Focus: Balance Sheet vs. Income Statement.

the concept of matching revenues and expenses and the determination of periodic net income (as embodied in [Paton & Littleton, 1940](#)). At least partially driven by income tax laws, periodic reporting for for-profit entities became associated with matching of revenues and costs, including recognition of depreciation and amortization of other deferred costs ([Brown, 1975, p. 75](#)).

Historical cost was the traditional basis for double-entry accounting. Implicit in financial statements under historic cost is a supporting record of past transactions ([Ijiri, 1975, p. 86](#)). [Brown \(1975\)](#) points out that, prior to the 1930s, companies felt free to write plant assets up and down because the balance sheet was considered a statement of values. However, historical cost accounting is also closely associated with the matching concept: the balance sheet increasingly became a repository of costs and other debits and credits

that had not yet appeared on the profit and loss statement. Thus the balance sheet became less useful as attention shifted to measuring revenues and expenses. The underlying reason is the inherent articulation of the financial statements produced under double-entry bookkeeping. Currently the focus of reporting has been shifting back toward direct measurement of assets and liabilities under FASB's conceptual framework.

2.2.1. Income Determination and Accrual Accounting

Nonbusiness entities, like commercial businesses, have continuity of existence that makes periodic reporting necessary. For colleges and universities, [Bruegman and Brighton \(1963, p. 769\)](#) argue that the academic year provides a natural time span that serves to match revenues and costs without any real need for accruals. A similar assertion might be made for entities that make annual assessments of taxes. However, even if true in certain circumstances, the choice of an "accounting period" is probably as arbitrary for most nonbusiness entities as it would be for a for-profit corporation. Theoretically, information about what has transpired each year is desirable for stewardship, public accountability, or decision usefulness objectives. All models examined in Chapters 3 through 6 in Section II provide some type of statement that resembles a traditional profit and loss report. The purpose is not to show a profit or surplus per se, but to provide financial statement readers information useful in determining whether there had been erosion in capital or net assets.

[Pye \(1957, p. 618\)](#) argues that one of the differences between business and nonbusiness entities is the "inverted aspects of the purpose of costs and revenue." In commercial accounting, a cost outlay generally precedes the realization of revenue. In nonbusiness accounting, costs are typically incurred to provide services but there can be no outlay unless revenue has been secured ([Herbert, 1948](#)). This "inversion" is related to the traditional emphasis on cash or a modified cash basis for nonbusiness accounting. Since nonbusiness goods and services cannot be provided unless resources are available, balance sheets emphasized liquidity by segregating current unrestricted funds from less liquid endowment or plant funds. The use of fund accounting is a matter of stewardship over sets of assets that are restricted or unavailable for immediate use. Reporting on a fund basis, however, led to lengthy and (often) confusing financial statements. None of the models presented in Chapters 3 through 6 in Section II use fund

reporting although Anthony's model (Chapter 5) has remnants (i.e., there are separate operating statements and contributed capital statements).

The debate over the fundamental elements that should be measured is discussed in [Storey and Storey \(1998\)](#). It is closely related to historic debates on whether income statements should be all-inclusive (clean surplus) or focus on current operating performance with some changes in assets or liabilities reported only on the balance sheet (dirty surplus) ([Kiger & Williams, 1977](#)).¹ Under the influential Paton and Littleton monograph (1940), the focus was on measurement of revenues and expenses to determine net income. FASB's conceptual framework project made assets and liabilities the controlling definitions ([FASB, 1985](#), Concepts Statement No. 6) and defined comprehensive income (the all-inclusive approach to income statements). This was a fundamental change from the earlier emphasis on accounting as a process of measuring and matching revenues and expenses. Under the asset-liability approach, revenues and expenses are indirectly measured as changes in assets and liabilities. Of the models explored in later chapters, only Anthony argues that the controlling definitions are revenues and costs: revenues and expenses should be directly measured.

For nonbusiness entities, [Pye \(1957\)](#) argues that matching revenues and expenses provides no indication of achievement. Although measurement of earnings is not the goal of nonbusiness accounting, users desire information on performance during a period. FASB Statement 117 permits intermediate subtotals on the statement of activities but has not defined the meaning of operating versus nonoperating revenues and expenses. The lack of a meaningful operating measure is one of the ongoing criticisms of the FASB model: There is no way to answer the question, "Do operating revenues cover operating expenses?" ([Herzlinger, 1996](#), p. 103). This key question could, arguably, be answered if statements were prepared under the Anthony or Mautz models. Unlike FASB, the GASB does provide an operating measure in its examples of college and university financial statements ([GASB, 1999b](#), Statement No. 35) but it is almost always negative by definition since appropriations and gifts are considered nonoperating.

2.2.2. Capital Maintenance

The determination of periodic income cannot be isolated from capital maintenance. The concept of capital maintenance originated in the early 19th century ([Salvary, 1979](#), pp. 366–369) as partnerships gave way to joint-stock companies. Disclosure of a balance sheet on a periodic basis

was a monitoring system made explicit in the British Joint Stock Companies Act of 1844. In response to the need to measure income, the early 20th century brought debates on whether capital maintenance should be based on monetary amounts or preservation of productive capacity (Lee, 1983). The debate is still relevant today as we move ever further from historical costs toward notions of “fair value” accounting that embody concepts of current cost and replacement costs.

In its original conceptual framework, FASB specifically endorsed maintenance of financial capital rather than physical capital (FASB, 1984, Concepts Statement No. 5, Paragraph 45). Anthony also endorses maintenance of financial equity for both business and nonbusiness entities and considers the process equivalent to what GASB refers to as interperiod equity (Anthony 1989, pp. 45–46). Anthony argues that FASB’s “changes in net assets” for not-for-profit entities is not an equivalent concept because it mixes income from operations with changes in contributed capital (permanently restricted net assets). GASB (2007) is still developing its conceptual framework, but its definition of assets in Concepts Statement No. 4 hints that maintenance of service capacity might be a future direction relevant to intergenerational equity. In contrast, Mautz (1994) makes a distinction between assets and service facilities. Only the former is measured and could enter into the concept for “maintenance of net assets.” Although Mautz’s Statement of Commitments could be used to project expenditures needed to maintain service capacity, his Statement of Net Assets could only be used as an indication of the maintenance of financial or operating equity.

2.2.3. Depreciation and Heritage Assets

The Industrial Revolution led to major investments in plant and equipment, which in turn led to recognition that such assets require maintenance and eventual replacement. However, the concept of recognizing a provision for depreciation did not arise until the middle of the 19th century and it was originally related to valuation. Early authorities argued that no depreciation in value would occur if assets were properly maintained and replaced. However, recognition of depreciation expense became increasingly important as part of income determination. Courts in both the United States and the United Kingdom decided that depreciation expense or maintenance expenses, but not both, were permissible (Woodward, 1956). To a large extent, our current ideas for recognizing periodic depreciation expense are the result of income tax laws.

Nonbusiness entities may also have substantial investments in property and equipment (termed “capital assets” by governments). Since income measurement is not necessarily the focus of nonbusiness accounting, recognition of depreciation (and even the related assets) was not considered particularly relevant for many years. In addition, assets like parks and bridges are unlikely to be sold and therefore have no realistic market value. Municipal accounting began to diverge from commercial accounting in the early part of the 20th century because it would be difficult to tax citizens enough to cover both debt retirement and depreciation on the same capital assets (Potts, 1982). By the 1940s, it had become common practice to keep track of capital assets in a separate “account group.” Early NFP accounting practices also tended to keep land, buildings, and equipment at original historical cost in a separate fund. Exceptions were made for income-producing assets like dormitories that were depreciated (e.g., Morey, 1932, p. 57; Frisbee, 1930, p. 220). In general, it was felt that including the value of plant assets among liquid assets would be misleading rather than beneficial. However, systematic allocation of long-lived assets had reached most NFP organizations by the 1970s. The American Institute of Certified Public Accountant’s (AICPA) audit guides for hospitals (1972), and voluntary health and welfare organizations (AICPA, 1967) both required organizations to record depreciation on long-lived tangible assets. The college and university audit guide (AICPA, 1973) permitted but did not require depreciation on institutional assets. The AICPA (1978), Statement of Position 78-10, which covered all other not-for-profit organizations, required depreciation on long-lived assets other than landmarks, monuments, cathedrals, historical treasures, etc. Except for enterprise funds, governmental units were not required to recognize depreciation expense until GASB Statement No. 34 (GASB, 1999a) was phased in over the first few years of the 21st century.

For nonbusiness accounting, heritage assets are particularly troublesome. These are assets with historical, artistic, scientific, or environmental qualities that are held and maintained because of their contribution to knowledge and culture. Examples include national parks, archeological sites, and museum collections of art or artifacts. Valuation is difficult because many of these artifacts are unique. The Rosetta Stone that led to the decipherment of Egyptian hieroglyphs is an extreme example discussed in the International Public Sector Accounting Standards Board’s (2006) consultation paper on heritage assets. The historical cost of this priceless artifact some two centuries after its 1801 acquisition by the British Museum would have little relevance. In many cases, the cost to estimate current value of collections

would probably be prohibitive: the Rosetta Stone is just one of over 100,000 objects in the museum’s Egyptian collections.

As discussed in Chapter 3 in Section II, the FASB permits NFP entities to capitalize or expense the acquisition of these heritage assets. If capitalized, no depreciation expense is recorded. GASB makes a similar provision for state and local governments (GASB Statement No. 34, Paragraphs 27–29). Neither Anthony (Chapter 5 in Section II) nor Mautz (Chapter 6 in Section II) would include heritage assets on any statement of status equivalent to a balance sheet. Other capital assets related to operating non-business entities are capitalized and depreciated under FASB, GASB, and Anthony (Chapters 3 to 5 in Section II) but Mautz (Chapter 6) would use this approach only for business-type activities. Purchased service facilities would appear only on a separate statement that is not articulated with the other financial statements.

2.3. SUMMARY

Fig. 2.3 combines the first two diagrams together illustrating certain additional links already discussed. There are a number of other concepts

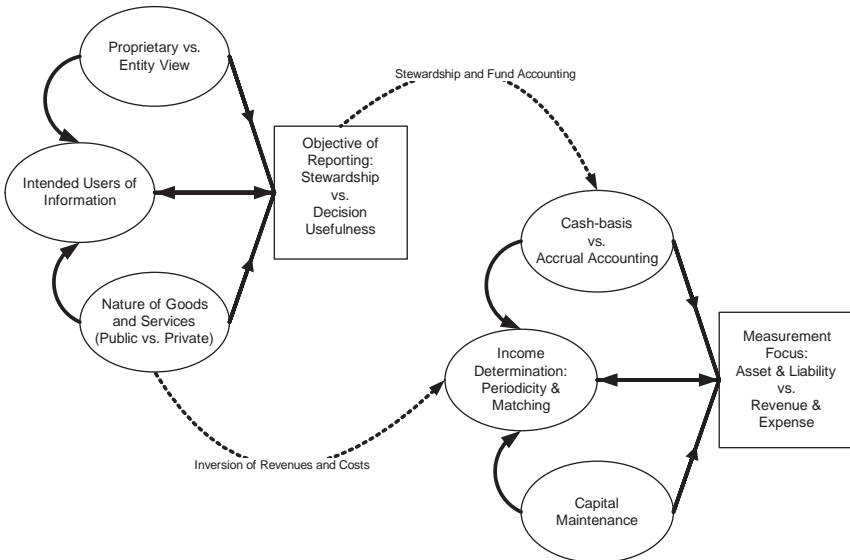


Fig. 2.3. Summary of Concepts Discussed.

that could be discussed including uniformity, conservatism, and materiality. However, the concepts illustrated in Fig. 2.3 are ones that help us discuss the similarities and differences between existing and proposed alternative frameworks for NFP accounting. The FASB model is based on a decision usefulness framework with a focus on direct measurement of assets and liabilities that produces an all-inclusive statement of activities. The GASB model is based on a public accountability framework that retains elements of both accrual and cash-basis procedures. The Anthony model focuses on matching and measurement of revenues and expenses with a careful distinction between operating performance and changes in contributed capital. The target audience for statements prepared under the Mautz model is taxpayers and donors. The focus is on current operating performance with forecasts of future costs. As we compare the example statements in each chapter, we refer back to some of the underlying concepts that led to the differences.

NOTE

1. For-profit accounting eventually developed a dual presentation that is intended to provide both through the addition of a statement of comprehensive income (SFAS No. 130, FASB 1997).

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CHAPTER 3

THE FASB MODEL

In the United States, private not-for-profit (NFP) accounting standards are currently established by the Financial Accounting Standards Board (FASB) while the accounting standards for NFP entities owned or controlled by state and local governments are established by the Governmental Accounting Standards Board (GASB). This chapter briefly describes the historical developments that produced the current private NFP standards and highlights key aspects of the standards including issues of particular relevance to museums. The chapter ends with an illustrative example of the financial statements for a museum.

3.1. DEVELOPMENT OF NFP ACCOUNTING IN THE UNITED STATES

The 1970s ushered in an era characterized by the “public right to know.” The Commission on Private Philanthropy and Public Needs (formed in 1973, it is often referred to as the Filer Commission) was the first step toward a broad recognition of the growing importance and influence of this sector. The major recommendation with respect to accounting was that a single set of uniform principles be developed for all nonbusiness organizations. With many voices demanding change, the accounting profession and the American Institute of Certified Public Accountants (AICPA) established a committee to develop accounting guidance for NFP organizations not covered by the three existing audit guides. As a result of their work, the American Institute of Certified Public Accountants (AICPA) Statement of Position (SOP) 78–10 was issued in 1978.

In the same year, the FASB accepted responsibility for nonbusiness accounting in addition to its responsibility for business accounting. Its first official action was the issuance of Statement of Financial Accounting Standards (SFAS) No. 32 in September 1979. This stopgap standard made the existing audit guides and the AICPA SOP documents related to NFP

organizations “preferable accounting practices” pending the release of final FASB standards on NFP accounting.

FASB’s formidable task was to reduce the wide range of practices already in use. The four accounting guides differed from each other in 35 major ways (Anthony, 1989). FASB’s first step was Statement of Financial Accounting Concepts (SFAC) No. 4 on the objectives of financial reporting by nonbusiness organizations issued in 1980. However, governments objected to being under FASB’s jurisdiction and this ultimately led to the creation of the GASB in 1984 to address the special concerns of state and local governmental entities. FASB retained jurisdiction over the accounting standards for private NFP organizations. This controversial split in responsibility meant that certain industry groups such as health care and higher education might end up with different rules to follow depending on whether they were for-profit, governmental, or NFP organizations.

In 1985, FASB incorporated NFP organizations into the “elements” portion of its conceptual framework (SFAC No. 6). However, the concept statements do not establish accounting principles, which organizations must follow. They are intended to help FASB resolve accounting issues. With the completion of the conceptual framework, FASB was ready to add NFP organizations to its agenda. In March 1986, five areas of inconsistent practice were identified: (1) recognition of depreciation, (2) accounting for contributions, (3) matters of financial statement display, (4) accounting for investments, and (5) consolidation issues for NFP organizations.

The initial topic to be resolved was depreciation. In August 1987, FASB issued its first standard that changed existing practices for NFP organizations. SFAS No. 93 required NFP organizations to record depreciation expense on most capital assets and was controversial enough that SFAS No. 99 (issued September 1988) delayed its implementation date for a year and a half (to fiscal years beginning in 1990).

Nearly six years passed before other NFP standards were finalized. FASB’s major effort in establishing NFP accounting standards are embodied in Statements No. 116 and 117 (issued June 1993), which cover recognition of contributions and financial statement format, respectively (FASB, 1993a). The fourth agenda item to be resolved was accounting for investments held by NFP organizations. SFAS No. 124 (issued November, 1995) prescribes fair value accounting for investments in marketable equity securities and all debt securities. In June 1999, the Board resolved another revenue recognition issue with the issuance of SFAS No. 136 – *Transfers of assets to a not-for-profit organization or charitable trust that raises or holds contributions for others*.

The final agenda item on consolidation policies and procedures was part of a proposed standard that would cover both for-profit and NFP entities. However in November 1999, the Board decided to undertake a project on combinations of NFP organizations separate from its business combination project. In October 2006, the FASB issued two exposure drafts intended to improve the accounting and disclosures for mergers and acquisitions (M&A) by NFP organizations. The proposals reflect the Board's commitment to meet the reporting needs of the NFP community and to ensure that financial statement users have access to decision-useful information.

3.2. KEY ASPECTS OF THE FASB MODEL

FASB's position appears to be that NFP accounting should differ from for-profit accounting only when justified by specific transactions or situations that warrant special consideration. Most standards are applicable to both for-profit and NFP entities including accounting for contingencies, leases, pensions, and other postretirement benefits.

So far, FASB has addressed three measurement issues unique to NFP entities. SFAS No. 116 provides guidance for accounting and reporting for contributions. A key phrase used in this statement is "unconditional promise to give." In general, contributions (both pledged and those actually received) are to be recorded as revenues by the recipient in the period promised. Contributions are classified as unrestricted unless the donor specifies otherwise. Two types of restrictions are defined. Permanent restrictions such as endowment fund contributions do not expire. Temporary restrictions are satisfied by the passage of time or by actions of the organization, such as providing a program in accordance with the donor's wishes. When the support and revenues accounts are closed at the end of the period, the balance sheet accounts for unrestricted, temporarily restricted, or permanently restricted net assets are increased. After SFAS No. 116 was implemented, an issue arose as to whether organizations that raise money on behalf of another entity should be able to recognize the donations as revenue. In SFAS No. 136, the FASB decided that when an organization accepts contributions from a donor and agrees to transfer the assets to, or use them on behalf of, a specific beneficiary, then it should not recognize the donation as revenue or the subsequent distribution as an expense.

Regarding expense measurement, FASB decided that certain long-lived assets of cultural and historic interest do not need to be depreciated (SFAS No. 93). These are the same assets for which NFPs have a recognition choice under SFAS No. 116. Such assets may be capitalized or expensed.

The presentation of financial statements is governed by SFAS No. 117, which describes reporting formats, but does not state how the elements on the statements should be valued. The main focus of the statements prepared under this standard is the institution as a whole. Although considerable flexibility is permitted, the standard is intended to increase uniformity and comparability. Under SFAS No. 117, reporting by fund type is not required. For most NFP organizations, there are three required statements: statement of financial position, statement of activities, and statement of cash flow. NFPs classified as voluntary health and welfare organizations are also required to report a statement of functional expense that details the types of expenses (salaries, postage, etc.) included in the functional categories for programs, fundraising, and management and general.

The statement of financial position reports the NFP entity's assets and liabilities. The difference between the assets and liabilities is classified as unrestricted, temporarily restricted, and permanently restricted net assets. Assets and liabilities are classified as current and noncurrent or displayed in order of nearness to conversion to cash (for assets) or nearness of maturity and use of cash (for liabilities). Long-lived assets are generally reported as net of accumulated depreciation, although certain types of assets that do not depreciate over time would be reported at historical cost (or estimated value at date of donation).¹

The statement of activities reports the change in net assets during the period. In this statement, separate columns or sections are used to display the changes by the three net asset classes. Revenues are presented by categories such as contributions, government grants, and program service fees in the appropriate column while expenses are reported only in the unrestricted column or section. Generally, expenses are categorized as programs, fundraising, and management and general instead of "natural" categories like salaries and rent. The immediate recognition of contributions plus a requirement that expenses reduce unrestricted net assets makes it necessary to recognize a reclassification of net assets when timing or program restrictions are satisfied. This "net assets released from restrictions" item appears in the revenue section as a positive number in the unrestricted column and a negative number in the temporarily restricted column. Instead of a statement of activities, the equivalent information may also be provided in a two-statement format that presents unrestricted

revenues and expenses in the first and other changes in each category of net assets in a second statement.

The required statement of cash flows is almost identical to the statement of cash flows prepared by business entities. The direct method is encouraged but not required, and a schedule reconciling cash provided by operations to the change in net assets must be included when the direct method is used. Permanently restricted contributions and contributions restricted for long-term purposes are included under “financing activities.” Noncash contributions of long-lived assets or securities would be disclosed along with any other noncash financing and investing activities.

3.3. THE FASB MODEL IN PRACTICE

Critics of the FASB model are largely concerned with the consequences of the current rules for temporarily restricted contributions. Anthony suggests that it would be less confusing to defer recognition of temporarily restricted contributions until the period when the restrictions have been satisfied (Anthony, 1989, 1995). This would better match revenues and expenses to provide an indicator of how well the NFP has been managed financially. For example, capital gifts can disguise operating losses because the revenues are recognized but there is no corresponding expense when the equipment or facilities are acquired. Noncash in-kind contributions can lead to similar issues. An increase in inventory as the result of a donation, for example, might cause a food bank to show a surplus (increase in net assets) that undermines its ability to raise the cash needed to pay salaries.²

FASB standards permit flexibility in display. For example, Fischer, Gordon, Greenlee, and Keating (2004) report that NFP colleges and universities often report a portion of investment income in a nonoperating section. Some of the institutions reported unrestricted contributions in both operating and nonoperating sections of the statement of activities. The various presentations make comparability between organizations challenging since the footnotes may not clearly describe the criteria used. FASB’s deliberate decision to not specify “what goes where” when an intermediate measure is reported was reaffirmed when it issued SFAS No. 158 on accounting for pensions and other postretirement benefits (FASB, 2006). However, Health Care Organizations must report the other comprehensive income items outside the operating measure specified by the AICPA Audit and Accounting Guide, *Health Care Organizations*. All other NFPs may put

the amounts where they please as long as they are on a separate line and not commingled with expenses. Thus, a “gap” in uniformity for NFP accounting and reporting is beginning to appear, reminiscent of the situation before 1993 when generally accepted accounting principles (GAAP) differed depending on which AICPA audit guide was being used.

The required reporting of expenses by function (FASB, 1993b, Paragraph 26) is a significant issue for both users and preparers of NFP financial statements. FASB provides very limited guidance on cost accounting issues of any type. However, good cost accounting is essential for the accurate classification and reporting of expenses among program, fundraising and administrative activities. Numerous studies based on Internal Revenue Service (IRS) Form 990 data suggest that misreporting of expenses is wide spread (e.g., Wing, Gordon, Hager, Pollak, & Rooney, 2006 and Krishnan, Yetman, & Yetman, 2006).

3.4. EXAMPLE FINANCIAL STATEMENTS

Many NFP organizations (churches, universities, etc.) own and maintain historic buildings and other artifacts of cultural and aesthetic value. Museums provide a unique opportunity to study some important issues relevant to nonbusiness organizations, namely, the capitalization and depreciation of certain types of assets. The capital assets of a museum are different in three ways from the capital assets typically held by business and other nonbusiness organizations (Peacock & Godfrey, 1976). First, the stock of artifacts is generally large in comparison to annual additions. Second, a large portion of the artifacts is donated rather than purchased, and finally, many of the donated items are subject to implicit or explicit contractual restrictions, which limit the ability of the institution to change the composition of its collection of artifacts. These artifacts, which are artistic, scientific, cultural, or historic in value are maintained for the benefit of present and future generations, regardless of any particular “market value” that could be assigned to the artifacts. Furthermore, the value of these collections is not “consumed” as visitors enjoy the exhibits.

To illustrate the FASB accounting standards for NFPs, we first obtained the financial statements of a major art museum. By analysis of the financial statements, we re-created the underlying transactions with some simplifications (e.g., to shorten the list of endowments). The results are representative of the original figures, although we disguised the museum’s identity by renaming programs and endowments. A complete description of all

Exhibit 3.1.
Financial Statements under the FASB Model.

**The Museum of Fine Arts
Statement of Financial Position
as of June 30, Year 2 and Year 1**

	June 30, Year 2	June 30, Year 1
Assets		
Cash and Cash Equivalents	\$ 360,000	\$ 658,000
Contributions receivable (Note 1)	7,081,000	8,900,000
Other receivables	1,078,000	1,000,000
Gift shop inventory	3,350,000	3,500,000
Investments, at market	319,612,000	286,083,000
Land, buildings and equipment, net of accumulated depreciation	37,277,000	37,226,000
Collections of art	997,271,000	987,450,000
Total Assets	\$ 1,366,029,000	\$ 1,324,817,000
Liabilities and Net Assets		
Accounts payable	\$ 1,194,000	\$ 1,100,000
Accrued interest payable	149,000	154,000
Other accrued liabilities	429,000	353,000
Deferred grant revenue	—	—
Annuities payable	2,800,000	3,000,000
Mortgages payable	4,477,000	4,623,000
Total Liabilities	9,049,000	9,230,000
Net Assets:		
Unrestricted	366,604,000	348,753,000
Temporarily Restricted (Note 2)	16,021,000	16,334,000
Permanently Restricted (Note 3)	974,355,000	950,500,000
Total Net Assets	1,356,980,000	1,315,587,000
Total Liabilities and Net Assets	\$ 1,366,029,000	\$ 1,324,817,000

Exhibit 3.1. (Continued)

Selected information from notes to the financial statements

	June 30, Year 2	June 30, Year 1
1. Unconditional promises to give		
Due within 1 year	\$ 2,480,000	\$ 2,399,000
Due within 2 to 5 years	6,115,000	8,500,000
Total	8,595,000	10,899,000
Present value discount at 6%	(654,000)	(909,000)
Allowance for uncollectible pledges	(860,000)	(1,090,000)
	\$ 7,081,000	\$ 8,900,000
2. Temporarily restricted net assets:		
Artist in residence	\$ 306,000	\$ 306,000
Scholarships	105,000	55,000
Accessions	10,193,000	11,680,000
Special exhibitions	2,093,000	1,691,000
Annuities	2,917,000	2,200,000
Future operations	407,000	402,000
	\$ 16,021,000	\$ 16,334,000
3. Permanently restricted net assets:		
Endowments for operations	\$ 42,699,000	\$ 37,900,000
Endowments for accessions	131,475,000	117,300,000
Term endowment	540,000	–
Restricted collection items and other permanently restricted net assets	799,641,000	795,300,000
	\$ 974,355,000	\$ 950,500,000

transactions is included in the appendix. The same set of transactions is used to illustrate each model examined.

The statement of financial position presented in [Exhibit 3.1](#), reports the museum's assets and liabilities. Our example includes its collection of art at historical cost or fair value at date of donation. These items are not depreciated (in accordance with SFAS No. 93). Details on the net asset balances are provided in the notes rather than on the face of the statement.

The statement of activities, [Exhibit 3.2](#), reports the change in net assets during the period. We have selected the FASB's multicolumn format because it appears to be most popular. In practice, NFPs often report the

Exhibit 3.2.
Financial Statements under the FASB Model.

**The Museum of Fine Arts
Statement of Activities
For the Year Ended June 30, Year 2**

	Unrestricted	Temporarily restricted	Permanently restricted	Total
Public Support and Revenues:				
Public Support:				
Contributions (including noncash gifts of art and services)	\$ 12,290,000	\$ 1,429,000	\$ 7,317,000	\$ 21,036,000
Government grants	–	923,000	–	923,000
Museum Gala Ball, net of cost	1,700,000	–	–	1,700,000
Total Public Support	13,990,000	2,352,000	7,317,000	23,659,000
Revenues:				
Gift shop sales	5,100,000	–	–	5,100,000
Less cost of sales	(2,040,000)	–	–	(2,040,000)
Gross profit on sales	3,060,000	–	–	3,060,000
Art school tuition	750,000	–	–	750,000
Admissions, tours and lectures	485,000	–	–	485,000
Investment Income	8,429,000	2,564,000	3,478,000	14,471,000
Net realized and unrealized gains on long-term investments	10,246,000	1,332,000	13,006,000	24,584,000
Realized gain/(loss) on sale of equipment	(6,000)	–	–	(6,000)
Realized gain on deaccessions	–	–	54,000	54,000
Total Revenues	22,964,000	3,896,000	16,538,000	43,398,000
Net assets released from restrictions when				
Time restrictions were met	610,000	(610,000)	–	–
Program restrictions were met	5,951,000	(5,951,000)	–	–
Total public support, revenues, and net assets released from restriction	43,515,000	(313,000)	23,855,000	67,057,000
Expenses:				
Program Services:				
Preservation	6,846,000	–	–	6,846,000
Exhibitions	14,208,000	–	–	14,208,000
Art School	1,960,000	–	–	1,960,000
Total Program Services	23,014,000	–	–	23,014,000
Supporting services:				
Management and general	1,893,000	–	–	1,893,000
Fund raising and development	757,000	–	–	757,000
Total Supporting Services	2,650,000	–	–	2,650,000
Total Expenses	25,664,000	–	–	25,664,000
Change in Net Assets	17,851,000	(313,000)	23,855,000	41,393,000
Net assets at beginning of year	348,753,000	16,334,000	950,500,000	1,315,587,000
Net assets at end of year	\$ 366,604,000	\$ 16,021,000	\$ 974,355,000	\$ 1,356,980,000

Exhibit 3.3.
Financial Statements under the FASB Model.

**The Museum of Fine Arts
Statement of Cash Flows
For the year ended June 30, Year 2**

Cash Flows from operating activities:	
Cash received from contributors	\$ 12,215,000
Grants received	845,000
Net receipts from Gala Ball	1,700,000
Gift shop receipts	5,100,000
Other operating revenues	1,235,000
Interest and dividends received	8,429,000
Purchase of gift shop merchandise	(1,796,000)
Cash paid to employees	(11,000,000)
Cash paid to other suppliers	(11,671,000)
Grants and scholarships paid	(520,000)
Interest expense paid	(462,000)
Net cash provided by operating activities	\$ 4,075,000
Cash flows used by investing activities:	
Purchase of equipment	(1,861,000)
Purchase of investments	(58,824,000)
Purchase of artwork for collections	(8,128,000)
Proceeds from deaccessions	361,000
Proceeds from the sale of investments	49,879,000
Proceeds from the sale of property	4,000
Net cash used by investing activities	\$ (18,569,000)
Cash flows from financing activities:	
Proceeds from contributions restricted for	
Investment in endowment-accessions	2,000,000
Investment in endowment-operations	6,000,000
Investment in term endowment	500,000
Other financing activities:	
Investment income restricted for perm additions to collections	5,746,000
Interest and dividends restricted for reinvestment	296,000
Payments of annuity obligations	(200,000)
Payments on notes payable	(146,000)
Net cash provided by financing activities	\$ 14,196,000
Net increase in cash and cash equivalents	(298,000)
Cash and cash equivalents, beginning of year	658,000
Cash and cash equivalents, end of year	\$ 360,000

Exhibit 3.3. (Continued)

Supplementary disclosures:	
Other financing and investing activities:	
Contributions of artwork for collection, at estimated fair value	\$ 2,000,000
Contributed services recognized	90,000
Contributed supplies used	50,000
Reconciliation of change in net assets to cash used by operating activities:	
Change in net assets	\$ 41,393,000
Adjustments:	
Depreciation	1,800,000
Loss on sale of equipment	6,000
Gain on deaccessions	(54,000)
Contributions restricted for long-term investment	(8,500,000)
Noncash contributions of art	(2,000,000)
Net realized and unrealized gains on long-term investments	(24,584,000)
Interest and dividends restricted for long-term investment	(296,000)
Interest and dividends restricted for future accessions	(5,746,000)
Change in asset and liability accounts:	
Pledges receivable	1,819,000
Other receivables	(78,000)
Inventory	150,000
Accounts payable	94,000
Accrued operating expenses	76,000
Accrued interest expense	\$ (5,000)
Cash provided by operations	\$ 4,075,000

prior year totals in an additional column or the prior year's statement on a separate page for comparison purposes. There is no intermediate operating measure and the statements are for years before the effective date of SFAS No. 158.

The required statement of cash flows, [Exhibit 3.3](#), is similar to cash flow statements prepared by business entities. The direct method is encouraged but not required, and a schedule reconciling cash provided by operations to the change in net assets must be included when the direct method is used. Permanently restricted contributions and contributions restricted for long-term purposes are included under "financing activities." Noncash contributions of long-lived assets or securities would be disclosed along with any other noncash financing and investing activities. These disclosures are among the supplementary disclosures related to [Exhibit 3.3](#).

The statement of functional expenses presented in [Exhibit 3.4](#) shows expenses by both functions and natural categories. Although, this statement is optional for museums, NFPs with tax-exempt status must provide

Exhibit 3.4.
Financial Statements under the FASB Model.

**The Museum of Fine Arts
Statement of Functional Expenses
For the year ended June 30, Year 2**

	Preservation	Exhibitions	Art School	Management & General	Fund raising and development	Total
Salaries & benefits	\$ 3,901,000	\$ 5,015,000	\$ 1,115,000	\$ 892,000	\$ 222,000	\$ 11,145,000
Grants and scholarships	–	156,000	364,000	–	–	520,000
Supplies	499,000	471,000	57,000	157,000	180,000	1,364,000
Transport. of art and travel	64,000	728,000	18,000	27,000	73,000	910,000
Services and profess. fees	1,263,000	379,000	33,000	134,000	135,000	1,944,000
Occupancy	903,000	6,019,000	301,000	181,000	120,000	7,524,000
Depreciation	216,000	1,440,000	72,000	45,000	27,000	1,800,000
Interest	–	–	–	457,000	–	457,000
	<u>\$ 6,846,000</u>	<u>\$ 14,208,000</u>	<u>\$ 1,960,000</u>	<u>\$ 1,893,000</u>	<u>\$ 757,000</u>	<u>\$ 25,664,000</u>

equivalent information in their IRS Form 990. The IRS recognizes that the statement is useful in evaluating the reasonableness of cost allocations.

NOTES

1. See SFAS No. 93, Paragraph 6. Museums can choose to capitalize or not capitalize their collections and this choice would apply to both donated and purchased items (see SFAS No. 116, Paragraphs 11, 26 and 27).

2. These are two examples from a major study of NFP costs conducted by the Urban Institute and Indiana University (see <http://nccsdataweb.urban.org/FAQ/index.php?category=40>). Among the papers available on the web site is *Special Issues in Nonprofit Financial Reporting: A Guide for Financial Professionals (2004)*, which offers suggestions on ways the identified issues might be ameliorated through choices in existing GAAP. Showing an intermediate “operating” subtotal on the statement of activities is among the possibilities suggested.

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CHAPTER 4

THE GASB MODEL

In the United States, accounting standards are established by three independent standards-setting bodies with defined lines of authority: the Federal Accounting Standards Advisory Board (FASAB), the Financial Accounting Standards Board (FASB), and the Governmental Accounting Standards Board (GASB). This arrangement recognizes the environmental differences for each category of entities under the standards setters' jurisdiction. The development of accounting standards for private not-for-profit entities by the FASB was discussed in Chapter 3 of Section II. The development of accounting standards for state and local governmental entities is discussed in this chapter.¹

4.1. DEVELOPMENT OF GOVERNMENTAL ACCOUNTING IN THE UNITED STATES

In the late 19th century, local government accounting in the United States was in a chaotic state with little uniformity. Auditing of records and accrual accounting were both rare. Even budgeting was infrequently performed (Fleischman & Marquette, 1987, pp. 83–84). The period between 1890 and 1920 saw a number of major reforms in the structure and conduct of city government with concurrent improvements in accounting systems. By 1908, the use of budgetary accounts in municipal accounting was fairly widespread and continued to evolve through the efforts of individuals including Frederick Cleveland and Lloyd Morey (Potts, 1977). In the early years of the 20th century, a special committee of the National Municipal League began to propound accounting standards for municipal accounting that were followed by a growing number of cities. In 1913, the influential *Handbook of Municipal Accounting* was published by the New York Bureau of Municipal Research (Morey, 1948, p. 227). The first textbook on municipal accounting was published the following year (Eggleston, 1914). By 1924, about 15 percent of surveyed universities had specialized courses on governmental accounting (Hackett, 1933).

The 1930s brought substantial increases in government expenditures due to social programs intended to offset the effects of the Great Depression, including unemployment compensation and projects funded by the Works Progress Administration and the Public Works Administration (Chatters, 1939). Several studies of cities had shown defects in accounting systems, including the lack of balance sheets by fund (Hackett, 1933). In cooperation with various national associations of public accountants and public finance officials, the Municipal Finance Officers Association (MFOA)² created the National Committee on Municipal Accounting (NCMA) in 1934. In 1936, the Committee issued NCMA Bulletin No. 6 Municipal Accounting Statements. This document became the prototype for the widely used “Blue Book.” Since 1968, the Blue Book is officially titled *Governmental Accounting, Auditing, and Financial Reporting* (GAAFR). Although municipal accounting for cities with more than 10,000 residents continued to improve, improvements at the state government level were spotty and county governments fell even further behind (Chatters, 1939). In time, the widespread recognition and acceptance of municipal accounting principles led to improvements in state government accounting in the 1940s. Small towns, school districts, and counties continued to be deficient (Morey, 1948).

Following World War II, the National Committee on Governmental Accounting replaced the NCMA and published the 1951 version of the Blue Book (Gauthier, 2001). The various reforms in governmental accounting tended to bring practices into closer alignment with those used by business entities. In fact, Hylton (1957, p. 52) argued that the failure to use accrual accounting for fixed assets was the only major barrier to doing away with the need for separate accounting principles for governmental entities.

The National Committee on Governmental Accounting was replaced by the National Council on Governmental Accounting (NCGA) in 1974. As with its predecessors, the NCGA was sponsored by the MFOA but, rather than revise the Blue Book, it chose to issue its own authoritative guidance through statements and interpretations. The Blue Book became an “unofficial” guide for implementation of the authoritative standards of the NCGA and later the GASB (Gauthier, 2001).

Under the NCGA and its predecessors, governmental entities used fund accounting to segregate restricted resources, and thus the financial statements were prepared with a stewardship focus that required multiple funds to assure proper control over government resources. Depreciation was not recognized in *government fund* types and neither fixed assets nor long-term liabilities were reported on the balance sheets. *Proprietary fund* types (enterprise and internal service) used accrual accounting including depreciation

expense. The reporting tended to be voluminous and there were many differences between governmental and for-profit accounting standards.

By 1980, the FASB had concluded that a single integrated conceptual framework for financial accounting and reporting would adequately serve both business and nonbusiness organizations. However, governmental organizations preferred a dedicated standard setting process and a separate standard-setting body for governmental entities was already in the discussion stage at the Financial Accounting Foundation (FAF). Accordingly, FASB deferred its decision on whether Concepts Statement No.4, "Objectives of Financial Reporting by Nonbusiness Organizations" (FASB, 1980) would apply to local governments. In 1984, the GASB became a reality, operating under the FAF in a manner parallel to the FASB.

The original division of responsibilities made GASB's statements "most authoritative" for state and local government entities. However, if GASB had no statement on a particular topic, state and local government entities were directed to follow FASB standards, as the "next most authoritative" source. During the period 1984–1991, this jurisdictional split caused difficulties. Whenever FASB issued a new pronouncement (even if FASB had not considered the governmental environment nor intended the rules to apply to governmental entities), GASB was forced to consider the need to issue a "negative" standard instructing state and local governments to not follow the new FASB rules. For example, when FASB issued SFAS No. 93 "Recognition of Depreciation by Not-for-Profit Organizations" in August, 1987, GASB acted promptly to exempt government-controlled institutions (GASB Statement No. 8, January 1988).

By 1989 (the time of its mandated five-year review), GASB had completed two codifications, ten statements, and one concepts statement in addition to numerous research reports, discussion memorandums, and exposure drafts. As a result of the review, the FAF clarified the jurisdictional lines between its two standard-setting bodies. GASB and FASB were to have primary authority and responsibility for the organizations within their respective jurisdictions. Accordingly, state and local governments had to follow GASB rules but would not have to follow new FASB pronouncements (issued after November 1989) unless instructed to do so by GASB.

This new arrangement clarified the situation for auditors and others but the divided jurisdiction for standard setting has the potential to be a continuing problem for certain industries. Preparers and users of financial statements of colleges and universities, hospitals, museums, and social service organizations must be aware of the differences in the standards for governmental and private institutions. FASB's standards on not-for-profit accounting apply to

private colleges, museums, and so forth, while comparable governmental institutions follow GASB's standards. Likewise, FASB's standards on for-profit accounting apply to many for-profit health care organizations, while private not-for-profit hospitals follow not-for-profit standards and governmental health care entities follow GASB's standards. All these different standards complicate comparisons among similar organizations. If FASB and GASB standards had turned out to be similar or if the two boards had coordinated their efforts, the comparability problem would have been less problematic. Since differences exist and appear to be expanding, users may be confused. Before the jurisdictional split, most decision makers who used college and university financial statements expressed a strong preference for having one set of accounting standards that would apply to both private and public institutions of higher education (Engstrom, 1988).

4.2. KEY ASPECTS OF THE GASB MODEL

Since its inception in 1984, the GASB worked to create a new financial reporting model for state and local government entities. The long awaited model for government accounting is largely embodied in GASB Statement No. 34, published in 1999.

GASB (1999a), Statement No. 34 is not based on a comprehensive conceptual framework. However, the GASB continues to work on its framework and added Concepts Statement No. 4 in 2007. *Elements of Financial Statements* defines the basic elements of state and local government financial statements. The definitions of assets and liabilities are different than those described by FASB. For example, the GASB definition of assets is based on service capacity rather than economic resources and some of the GASB elements are unique.³ As with the FASB conceptual framework, the GASB's concepts statements provide a foundation to guide the Board's future development of accounting and financial reporting standards. Over time, newly formulated concepts may lead to additional changes in the governmental reporting model.

4.2.1. Presentation of Financial Information – The Dual Perspective

Owing to political pressures that always accompany due process standard setting efforts, the road to the new reporting model was lengthy and the outcome not uniformly welcomed. The GASB determined that the traditional focus on stewardship was still appropriate and necessary.

Therefore, the familiar fund-based statements (with some modifications) are still prepared and reported. However, a new accrual-basis entity-wide set of financial statements was added. The combination of these two sets of distinctly different financial statements is referred to as a “dual perspective.”

The first perspective comprises the traditional fund statements to provide a detailed presentation of the financial position of the funds using a modified-accrual basis and current financial resources measurement focus. The funds perspective includes two financial statements: the balance sheet and the statement of revenues, expenditures, and changes in fund balances. These statements focus on currently spendable resources, claims requiring currently spendable resources, and changes in the currently spendable resources.

The second perspective, referred to as the government-wide financial statements, provides a condensed consolidated view. This set of statements is prepared on the accrual basis of accounting (similar to commercial accounting principles) and includes both long-term assets and liabilities. There are two required government-wide financial statements: the statement of net assets and the statement of activities. Together, they present information about the reporting government as a whole, distinguishing between the total primary government and its discreetly presented component units as well as between the primary government’s governmental activities and business-type activities. These aggregated financial statements focus on total (economic) resources and the change in total resources rather than the traditional focus on currently spendable (financial) resources.

A reconciliation is required to explain the differences between the statement of revenues, expenditures, and changes in fund balance and the statement of activities. A second reconciliation is provided to explain the differences between the balance sheet and the statement of net assets. Consequently, the two perspectives are considered to be one set of basic financial statements under GASB Statement No. 34.

4.2.2. Revenue Recognition and Net Asset Classes

GASB issued Statement No. 33 on revenue recognition for nonexchange transactions (including contributions) in 1998.⁴ Although there is no one-to-one mapping of terms between the FASB (1993a), Statement No. 116 and GASB (1998), Statement No. 33, Gordon, Khumawala, and Parsons (2002) clarify the differences in terminology. Table 4.1 compares FASB’s terms to the equivalent GASB terms and Table 4.2 compares the revenue recognition criteria (tables are derived from Gordon et al., 2002).

Table 4.1. FASB Terminology with GASB Equivalent.

FASB Terminology	FASB Definition	GASB Equivalent
Donor-imposed conditions	The donor specifies a future and uncertain event that is necessary in order for the recipient organization to receive the contribution (or eliminate the possibility that the contribution must be returned to the donor).	Similar to certain eligibility requirements, particularly contingencies. Eligibility requirements are conditions established by the grantor that are required to be met before a transaction can occur.
Donor-imposed restrictions	The donor stipulates that a contributed asset may be used only for a specific purpose or must be maintained indefinitely. Implied time restriction: The donor makes an unconditional promise to give an asset to the recipient organization in future periods. These pledges are considered temporarily restricted unless it is clear that the gift is intended to support activities of the current period.	Equivalent to purpose restrictions. Similar to time requirements, but this eligibility requirement under the GASB also includes provider stipulations that the resources be maintained intact as in the case of endowments and term endowments (the FASB's permanent restriction).
Temporary restriction	A donor-imposed restriction that permits the recipient organization to use up or expend the donated assets as specified. A restriction is satisfied by either the passage of time (time restrictions) or by actions of the organization (purpose restrictions).	May be either a purpose restriction or a time requirement. However, time requirements under GASB also include permanent restrictions on the use of assets received.
Permanent restriction	A donor-imposed restriction that stipulates that resources are to be maintained permanently but permits the recipient organization to use up or expend part or all of the income or other economic benefits derived from the donated assets.	This terminology is not used explicitly but the concept is handled as a combination of time requirement (the assets can never be spent or used up) plus a purpose restriction that the resources must be invested, placed on permanent display, etc.

From Gordon et al. (2002).

Table 4.2. A Comparison of FASB and GASB Criteria for Recognition of Contributions.

	SFAS No. 116	GASB Statement No. 33
Asset recognition	Assets (including unconditional promises to give in future years) are recognized immediately at fair value (i.e., discounted with allowance account to provide for uncollectibility if necessary). For conditional promises to give, the asset is recognized when the conditions are met or when the resources are received, whichever is first.	Assets are recognized in the period in which all eligibility requirements are satisfied or when resources are received, whichever is first.
Unrestricted gifts	Gifts and unconditional promises to give (during the current year) that have no donor-imposed restrictions are recognized immediately as revenue (net of estimated uncollectible amounts). Unrestricted net assets are increased.	Voluntary nonexchange transactions (including gifts) are recognized as revenue (net of estimated uncollectible amounts) when all eligibility requirements are met. Unrestricted net assets are increased.
Gifts with purpose restrictions	Gifts and unconditional promises to give are recognized immediately at fair value as increases in temporarily restricted net assets. Revenue may appear to be double counted if related expenses are delayed beyond the year of recognition. Since all expenses must be reported as decreases in unrestricted net assets, unrestricted revenues are increased by means of a transfer on the operating statement when the purpose restriction is satisfied. There is an offsetting decrease in temporarily restricted revenues.	Voluntary nonexchange transactions including promises to give are recognized as revenue when received, provided that all eligibility requirements are met. Restricted net assets are increased when the gift is recognized. When restrictions are met, restricted net assets are reduced and unrestricted net assets are increased but the transfers are not displayed as revenues because of the GASB Statement No. 34 required format for the operating statement.

Table 4.2. (Continued)

	SFAS No. 116	GASB Statement No. 33
Gifts with time restrictions	Gifts and unconditional promises to give that have explicit or implicit time restrictions are recognized immediately at discounted fair value as increases in temporarily restricted net assets. Since all expenses must be reported as decreases in unrestricted net assets, unrestricted revenues are increased by means of a transfer on the operating statement when the time restriction is satisfied. There is an offsetting decrease in the temporarily restricted revenues.	Time requirements associated with a gift prevent recognition upon receipt. Revenue is only recognized when all eligibility requirements are met. If assets are received before eligibility requirements are met, deferred revenue is recorded. Otherwise, no asset and no revenue or deferred revenue is recognized.
Gifts with permanent restrictions	Gifts and unconditional promises to give with permanent restrictions are recognized immediately as revenue. Permanently restricted net assets are increased. There is generally no double counting problem as amounts are never transferred to unrestricted net assets.	Revenue is recognized when the resources are received, provided that all eligibility requirements have been met and nonexpendable restricted net assets are increased. Until an endowment pledge is received, the assets cannot be invested in perpetuity which means eligibility requirements have not been met.

Adapted from Gordon et al. (2002).

In addition to the differences in terminology, the two boards categorize net assets somewhat differently. The FASB uses three categories: unrestricted, temporarily restricted, and permanently restricted net assets (SFAS No. 117, 1993b). Under GASB Statement No. 34, governmental funds retained their traditional equity classifications as reserved fund balance and unreserved fund balance. For entity-wide financial statements, the GASB has three categories (restricted, invested in capital assets net of related debt, and unrestricted). Restricted net assets are commonly displayed as expendable and nonexpendable with the latter referring to net assets that must be maintained in perpetuity (GASB 34, Paragraph 35). *Net assets*

invested in capital assets net of related debt are comprised of capital assets (including restricted capital assets), reduced by the balance of borrowings attributable to the acquisition of capital assets.

4.3. EXAMPLE FINANCIAL STATEMENTS

The illustrative financial statements are prepared using the set of transactions that we developed in Chapter 3 of Section II for a not-for-profit museum but under the assumption that the museum is public and does its accounting in accordance with GASB standards. Special-purpose governments that operate and budget multiple programs are required to present separate financial statements under GASB Statement No. 34. The required set of statements differs depending on whether the special-purpose government has several government-type activities or has both business- and government-type activities (Paragraphs 135–137). If a special-purpose government has only business-type activities, it reports following enterprise fund practices (Paragraph 138). We illustrate both approaches in the next sections since, in practice, we have observed museums reporting as special-purpose entities engaged in governmental activities as well as special-purpose entities engaged in business activities.⁵

4.3.1. General-Purpose Government Reporting

If the museum were engaged in governmental activities it would report the same statements required of a general-purpose government like a city or county. Under this model, there are two statements prepared from an entity-wide perspective plus two statements prepared from a funds perspective. GASB Statement No. 34 shows a variety of possible formats for both the entity-wide and funds-based statements.

The two statements prepared with the entity-wide perspective are presented in Exhibits 4.1 and 4.2. The *statement of net assets* is essentially a balance sheet prepared on the accrual basis. Exhibit 4.1 follows a format similar to illustration A-3 in GASB Statement No. 34. The *statement of activities* consolidates the activities of the various fund types but follows the accrual basis instead of the modified accrual basis of accounting. The format shown is similar to illustration B-3 in GASB Statement No. 34. We selected this example because it provides information similar to that found in a combination of a FASB statement of activities and a statement of functional expenses. This makes the accounting differences between our illustrations of

Exhibit 4.1.

Financial Statements under the GASB Model
(Government-wide) Statement of Net Assets.

The Museum of Fine Arts
Statement of Net Assets
As of June 30, Year 2 and Year 1

	June 30, Year 2	June 30, Year 1
Assets		
Cash and Cash Equivalents	\$ 360,000	\$ 658,000
Contributions and grants receivable	465,000	386,000
Gift shop inventory	3,350,000	3,500,000
Investments	275,794,000	250,036,000
Land, buildings and equipment, net of accumulated depreciation	37,277,000	37,226,000
Collections of art	997,271,000	987,450,000
Total Assets	1,314,517,000	1,279,256,000
Liabilities:		
Accounts payable	1,194,000	1,100,000
Accrued interest payable	149,000	154,000
Other accrued liabilities	429,000	353,000
Deferred grant revenue	301,000	100,000
Annuities payable (split-interest agreements)	2,800,000	3,000,000
Mortgages payable		
Due within one year	210,000	200,000
Due after one year	4,267,000	4,423,000
Total Liabilities	9,350,000	9,330,000
Net Assets:		
Invested in capital assets, net of related debt	1,030,281,000	1,020,253,000
Restricted for:		
Nonexpendable:		
Endowment to support operations	35,882,000	31,691,000
Endowment for acquisition of art	109,525,000	96,835,000
Term endowment	529,000	-
Expendable:		
Artist in residence program	299,000	293,000
Art school scholarships	103,000	51,000
Accessions - unrestricted	8,441,000	10,226,000
Special exhibitions	615,000	534,000
Annuities	2,122,000	1,545,000
Future operations	-	-
Accessions - permanent collections	2,434,000	1,136,000
Unreserved:		
Designated for future construction	13,802,000	12,236,000
Unreserved, Undesignated	101,134,000	95,126,000
Total Net Assets	\$ 1,305,167,000	\$ 1,269,926,000

Exhibit 4.2.
Financial Statements under the GASB Model
(Government-wide) Statement of Activities.

The Museum of Fine Arts
Statement of Activities
For Year Ended June 30, Year 2

	Total Governmental Activities	Preservation	Exhibitions	Art School	General Administration	Fund Raising and Development	Gift Shop
Expenses:							
Salaries & benefits	\$ 11,145,000	\$ 3,901,000	\$ 4,513,000	\$ 1,115,000	\$ 892,000	\$ 222,000	\$ 502,000
Grants and scholarships	520,000	–	156,000	364,000	–	–	–
Supplies	1,314,000	499,000	462,000	7,000	157,000	180,000	9,000
Transportation of art and travel	910,000	64,000	728,000	18,000	27,000	73,000	–
Services and professional fees	1,854,000	1,263,000	379,000	33,000	44,000	135,000	–
Occupancy	7,524,000	903,000	5,537,000	301,000	181,000	120,000	482,000
Depreciation	1,800,000	216,000	1,270,000	72,000	45,000	27,000	170,000
Cost of sales	2,040,000	–	–	–	–	–	2,040,000
Interest	457,000	–	–	–	457,000	–	–
Total expenses	27,564,000	6,846,000	13,045,000	1,910,000	1,803,000	757,000	3,203,000
Program revenues:							
Charges for services	6,335,000	–	485,000	750,000	–	–	5,100,000
Operating grants and contributions	1,988,000	932,000	593,000	433,000	30,000	–	–
Restricted investment earnings	5,761,000	5,761,000	–	–	–	–	–
Gain/(loss) on restricted investments	633,000	587,000	38,000	8,000	–	–	–
Realized gain on deaccessions	54,000	54,000	–	–	–	–	–
Net program expense	12,793,000	(488,000)	11,929,000	719,000	1,773,000	757,000	(1,897,000)

Exhibit 4.2. (Continued)

	Total Governmental Activities	Preservation	Exhibitions	Art School	General Administration	Fund Raising and Development	Gift Shop
General revenues:							
Grants and contributions not restricted to specific programs	10,950,000						
Contributions to endowment	8,500,000						
Fair value of donated artwork	2,000,000						
Investment earnings (unrestricted)	8,429,000						
Investment income restricted to annuities and term endowments	281,000						
Gain/(loss) on investments not restricted to specific programs	6,974,000						
Gain/(loss) on endowment investments and annuities	9,206,000						
Gain/(loss) on disposal of equipment	(6,000)						
Museum Gala Ball, net of costs	1,700,000						
Total general revenues	48,034,000						
Transfers							
Change in net assets	35,241,000						
Net assets - beginning	1,269,926,000						
Net assets - ending	\$ 1,305,167,000						

the FASB and GASB models more transparent. The GASB's *statement of activities* is considerably different in format to the FASB statement with the same title. Note in particular that expenses are reported before revenues with program-related revenues subtracted.

The statements prepared on the funds perspective are presented in Exhibits 4.3 and 4.4. The format of the *balance sheet* (Exhibit 4.3) is similar to illustration C-1 in GASB Statement No. 34. The format of the *statement of revenues, expenditures, and changes in fund balances* (Exhibit 4.4) is similar to GASB's illustration C-2. Note that fund balances do not equal the net assets shown in Exhibit 4.1. A reconciliation of the amounts is a required feature of GASB Statement No. 34 and is presented in Exhibit 4.5. FASB's permanently restricted net assets are roughly equivalent to the GASB's nonexpendable restricted net assets. Likewise, the FASB's temporarily restricted net assets are roughly equivalent to GASB's expendable restricted net assets. However, the same facts do not result in identical amounts due to differences in the way the FASB and GASB treat time restrictions (refer to Tables 4.1 and 4.2). Under GASB Statement No. 34, a distinction is made between operating and general revenues (Paragraph 47). Permanently restricted gifts are considered general revenue and are reported at the bottom of the statement of activities, along with unrestricted gifts and most investment income (GASB 34, Paragraph 53). Gifts with purpose restrictions are reported as operating revenues associated with related program expenses.

4.3.2. Enterprise Fund Reporting for Special-Purpose Government

A government-owned museum might be considered a special-purpose government with only business-type activities, a common practice for colleges and universities (see GASB Statement No. 35, 1999b). In this case, it would be accounted for like an enterprise fund. A special-purpose government with only business-type activities uses accrual accounting and presents no funds-based statements. The three required financial statements are a statement of net assets, a statement of revenues, expenses, and changes in net assets, and a statement of cash flows (GASB 34, Paragraph 138).

The statement of net assets would be the same as presented in Exhibit 4.1. Instead of the statement of activities illustrated in Exhibit 4.2, the museum would report a much simpler single-column presentation. The *statement of revenues, expenses, and changes in net assets* in Exhibit 4.6 contains the same information as Exhibit 4.2 but follows the format of the statement of revenues, expenses, and changes in net assets used by proprietary funds.

Exhibit 4.3.
Financial Statements under the GASB Model
Balance Sheet (Fund basis).

The Museum of Fine Arts
Balance Sheet
As of June 30, Year 2 and Year 1

	General and Special Purpose Expendable Funds	Non Expendable Funds	June 30, Year 2 Total	June 30, Year 1 Total
Assets				
Cash and cash equivalents	\$ 360,000	\$ –	\$ 720,000	\$ 658,000
Other receivables (grants)	158,000		316,000	200,000
Due from other funds	–		–	–
Gift shop inventory	3,350,000		6,700,000	3,500,000
Investments, at market	127,424,000	148,370,000	403,218,000	250,036,000
Total Assets	131,292,000	148,370,000	410,954,000	254,394,000
Liabilities:				
Accounts payable	1,194,000	–	2,388,000	1,100,000
Other accrued liabilities	429,000		858,000	353,000
Deferred grant revenue	301,000		602,000	100,000
Total Liabilities	1,924,000	–	3,848,000	1,553,000
Fund balances:				
Restricted for:				
Nonexpendable:				
Endowment to support operations		35,882,000	35,882,000	31,691,000
Endowment for acquisition of art		109,525,000	109,525,000	96,835,000
Term endowment		529,000	529,000	–
Expendable:				
Artist in residence program	299,000		598,000	293,000
Art school scholarships	76,000		152,000	24,000
Accessions – general	8,269,000		16,538,000	10,136,000
Special exhibitions	507,000		1,014,000	465,000
Annuities	4,922,000		9,844,000	4,545,000
Future operations	–		–	–
Accessions – permanent	–	2,434,000	2,434,000	1,136,000
Reserved for inventories	3,350,000		6,700,000	3,500,000
Reserved for future construction	13,802,000		27,604,000	12,236,000
Unrestricted	98,143,000		196,286,000	91,980,000
Total Fund Balances	129,368,000	148,370,000	407,106,000	252,841,000
Total Liabilities and Fund Balances	\$ 131,292,000	\$ 148,370,000	\$ 410,954,000	\$ 254,394,000

Exhibit 4.4.

Financial Statements under the GASB Model
Statement of Revenues, Expenditures and Changes in Fund Balances
(Fund basis).

The Museum of Fine Arts
Statement of Revenues, Expenditures, and Changes in Fund Balances
For the Year Ended June 30, Year 2

	General Fund and Special Purpose Expendable Funds	Nonexpendable Funds	Total Governmental Funds
Revenues			
Contributions	\$ 12,207,000	\$ 8,500,000	\$ 20,707,000
Donated objects of art	1,200,000	800,000	2,000,000
Government grants	610,000		610,000
Museum Gala Ball, net of cost	1,700,000		1,700,000
Gross profit on sales (gift shop)	3,060,000		3,060,000
Art school tuition	750,000		750,000
Admissions, tours and lectures	485,000		485,000
Interest and dividends	10,993,000	3,478,000	14,471,000
Gain/(loss) on investments	7,914,000	8,899,000	16,813,000
Proceeds from sale of equipment	4,000		4,000
Proceeds from deaccessions		361,000	361,000
Total Revenues	38,923,000	22,038,000	60,961,000
Expenditures			
Current:			
Preservation	6,630,000		6,630,000
Exhibitions	11,775,000		11,775,000
Art School	1,838,000		1,838,000
General Administration	1,301,000		1,301,000
Fund raising and development	730,000		730,000
Gift Shop	993,000		993,000
Debt service:			
Principal	146,000		146,000
Interest and other charges	462,000		462,000
Payments on gift annuities	200,000		200,000
Capital outlays:			
Accessions of art for collections	6,798,000	3,330,000	10,128,000
Other plant, property & equipment	1,861,000		1,861,000
Total Expenditures	32,734,000	3,330,000	36,064,000
Change in Fund Balance	6,189,000	18,708,000	24,897,000
Fund balance at beginning of year	123,179,000	129,662,000	252,841,000
Fund balance at end of year	\$ 129,368,000	\$ 148,370,000	\$ 277,738,000

Exhibit 4.5.

Financial Statements under the GASB Model Reconciliation Schedules.

**The Museum of Fine Arts
Reconciliation of the Statement of Revenues, Expenditures, and Changes in
Fund Balances of Government Funds to the Statement of Activities
Year ended June 30, Year 2**

	General Fund and Special Purpose Expendable Funds	Nonexpendable Funds	Total Governmental Funds
Change in fund balance for year (from Statement of Revenues, Expenditures and Changes in Fund Balances)	\$ 6,189,000	\$ 18,708,000	\$ 24,897,000
Amounts reported in the statement of activities are different from amounts reported in the statement of revenues, expenditures and changes in fund balance are different because:			
Government funds report capital outlays as expenditures. However, in the statement of activities, the cost of those assets is allocated over their estimated useful lives as depreciation expense. This is the amount by which capital outlays exceed depreciation in the current period.	6,859,000	3,330,000	10,189,000
In the statement of activities, only the gain or loss on the sale of plant, property, equipment and collections is reported. In government funds, the proceeds of the sale increase financial resources, thus the change in net assets differs from the change in fund balance by the cost of the assets sold.	(10,000)	(307,000)	(317,000)
Repayment of bond principal and other long-term debt is an expenditure of the government funds, but the repayment reduces long-term liabilities in the statement of net assets. This is the reduction of principal during the year.	146,000	-	146,000

Exhibit 4.5. (Continued)

	General Fund and Special Purpose Expendable Funds	Nonexpendable Funds	Total Governmental Funds
Interest expense is accrued in the statement of net assets but reduces financial resources in the government funds only when paid.	5,000	–	5,000
Pledges for gifts to be received in future periods recognized as revenue in statement of activities but are not reported in government funds because the resources are not available for use.	121,000	–	121,000
Payment on split interest agreements (annuities).	200,000		200,000
Change in net assets for year (from statement of activities)	\$ 13,510,000	\$ 21,731,000	\$ 35,241,000
Reconciliation of the Balance Sheet to the Statement of Net Assets			
	June 30, Year 2		June 30, Year 1
Total fund balance of governmental funds from balance sheet	\$ 277,738,000		\$ 252,841,000
Amounts reported for governmental activities in the statement of net assets are different because:			
Capital assets used in governmental activities are not financial resources and therefore are not reported in the funds (collections and plant, property & equipment).	1,034,548,000		1,024,676,000
Long-term liabilities including related accrued interest payable are not due and payable in the current period and therefore are not reported in the funds.	(7,426,000)		(7,777,000)
Promises to give (pledges) are not currently available for use and therefore are not reported in the funds.	307,000		186,000
	\$ 1,305,167,000		\$ 1,269,926,000

Exhibit 4.6.
Financial Statements under the GASB Model
Statement of Revenues, Expenses and Changes in Net Assets
(Enterprise Fund).

The Museum of Fine Arts
Statement of Revenues Expenses and Changes in Net Assets
For Year ended June 30, Year 2

REVENUES	
Operating revenues:	
Charges for services	\$ 6,335,000
Operating grants and contributions	1,988,000
Restricted investment earnings	5,761,000
Gain/(loss) on restricted investments	633,000
Realized gain on deaccessions	54,000
Total operating revenues	14,771,000
EXPENSES	
Salaries & benefits	11,145,000
Grants and scholarships	520,000
Supplies	1,314,000
Transportation of art and travel	910,000
Services and professional fees	1,854,000
Occupancy	7,524,000
Depreciation	1,800,000
Cost of sales	2,040,000
Interest	457,000
Total expenses	27,564,000
Operating income (loss)	(12,793,000)
NONOPERATING REVENUES (EXPENSES)	
Grants and contributions not restricted to specific programs	10,950,000
Investment earnings (unrestricted)	8,429,000
Gain/(loss) on investments not restricted to specific Programs	6,974,000
Gain/(loss) on endowment investments and annuities	9,206,000
Gain/(loss) on disposal of equipment	(6,000)
Museum Gala Ball, net of costs	1,700,000
Net nonoperating revenues	37,253,000
Income before other revenues, expenses, gains, or losses	24,460,000
Contributions to endowment	8,500,000
Fair value of donated artwork	2,000,000
Investment income restricted to annuities and term endowments	281,000
Change in net assets	35,241,000
Net assets – beginning	1,269,926,000
Net assets – ending	\$ 1,305,167,000

Note: This statement is Exhibit 4.2 restated in the format used by a special-purpose government with only business-type activities (i.e., enterprise fund accounting). A statement of net assets would also be presented and would be essentially the same as Exhibit 4.1. The third required statement for an enterprise fund is a statement of cash flows (see Exhibit 4.7).

Exhibit 4.7.
Financial Statements under the GASB Model
Statement of Cash Flows (Enterprise Fund).

The Museum of Fine Arts
Statement of Cash Flows
For the year ended June 30, Year 2

Cash Flows from operating activities:	
Cash received as contributions and grants	\$ 13,060,000
Net receipts from Gala Ball	1,700,000
Cash from sales, admissions, and other program fees	6,335,000
Purchase of gift shop merchandise	(1,796,000)
Cash paid to employees	(11,000,000)
Cash paid to other suppliers	(11,671,000)
Grants and scholarships paid	(520,000)
	(3,892,000)
Net cash provided by operating activities	
Cash flows from capital and related financing activities:	
Proceeds from contributions restricted for	
Investment in endowment - accessions	2,000,000
Investment in endowment - operations	6,000,000
Investment in term endowment	500,000
Investment income restricted for permanent additions to collections	5,746,000
Interest and dividends restricted for reinvestment	296,000
Proceeds from deaccessions	361,000
Proceeds from the sale of property	4,000
Payments of annuity obligations	(200,000)
Principal paid on capital debt	(146,000)
Interest paid on capital debt	(462,000)
Purchase of equipment	(1,861,000)
Purchase of artwork for collections	(8,128,000)
	4,110,000
Net cash provided by capital and related financing activities	
Cash flows from investing activities:	
Purchase of investments	(58,824,000)
Proceeds from the sale of investments	49,879,000
Interest and dividends received	8,429,000
	(516,000)
Net cash used by investing activities	
Net increase in cash and cash equivalents	(298,000)
Cash and cash equivalents, beginning of year	658,000
	\$ 360,000
Cash and cash equivalents, end of year	

Note that this format results in the loss of information regarding functional activities (i.e., preservation, exhibitions, and art school) although supplemental information could be supplied in the notes or the management discussion and analysis section. If the museum is deemed a special-purpose government with only business-type activities, it would also present a *statement of cash flows* (Exhibit 4.7). There are several differences in the cash flow statements of FASB and GASB. First, GASB requires a direct method presentation, which is only recommended by FASB. Second, GASB has four sections instead of the three used by FASB: operating activities, noncapital financing activities, capital and related financing activities, and investing activities.⁶ Third, certain items are classified differently. Finally, under FASB's rules, interest paid and interest and dividends received are classified as cash flows from operating activities but GASB classifies investment income received as an investing activity and interest payments as a capital and related financing activity. GASB also requires an "indirect method" reconciliation to present the differences between operating income and cash provided by operating activities similar to the schedule required by FASB (see Exhibit 3.3 in the Chapter 3 of Section II).

NOTES

1. The third standard-setting body, the FASAB, is the newest and was established in 1990 based on a memorandum of understanding between the Comptroller General of the United States (GAO), the Secretary of the U.S. Treasury (Treasury), and the Director of the Office of Management and Budget (OMB) who previously shared the responsibility for establishing financial reporting standards for the federal government.

2. The MFOA was the predecessor of today's Government Finance Officers Association (GFOA).

3. Two elements, deferred inflows of resources and deferred outflows of resources, have no parallel in the FASB's elements. The first refers to the acquisition of resources applicable to a future reporting period while the latter refers to the consumption of net assets applicable to a future reporting period.

4. Since FASB's standards on contributions in its Statement No. 116 were published after the 1989 jurisdictional arrangement took effect, it never applied to governmental entities.

5. GASB is more prescriptive than FASB with respect to the style and content of certain notes as well as the content of the unaudited management's discussion and analysis (MD&A) section. Although we have not included this content in our examples, the Appendix (Table A5) illustrates a note consistent with the required GASB format for disclosing changes in long-lived assets (land, buildings, and equipment).

6. For our set of facts, there were no noncapital financing activities. This section would be used by a special-purpose government with both business-type and government-type activities to report transfers to or from the two types of funds.

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CHAPTER 5

ANTHONY'S PROPOSED ACCOUNTING MODEL

The late Professor Robert N. Anthony, was a leading critic of the FASB's model for NFP accounting. He was "an impenitent believer in the primacy of the income statement and the matching approach to income" (Solomons, 1995, p. 43). Anthony's (1995) commentary on the "nonprofit accounting mess" in which he delineates his philosophical differences with FASB is best understood in light of his own conceptual framework for accounting, the 1983 book entitled, *Tell It Like It Was*. In *Should Business and Nonbusiness Accounting Be Different?* he makes his position on nonbusiness accounting more explicit (Anthony, 1989).¹ Anthony's framework encompasses both profit-oriented and NFP entities.²

5.1. KEY ASPECTS OF THE MODEL

Anthony's premises (1983, Premises 8A, 8B, 15, and 16) make clear his strong preference for directly measuring income rather than directly measuring assets and liabilities. In explaining his preference, Anthony (1983, pp. 70–71) provides the analogy of an oil well. The direct measurement approach would be able to measure exactly the amount of oil and gas removed from the well during a period even though the amount underground at the beginning and end of the period can only be estimated. The asset/liability approach would calculate income by measuring the difference in the amount of oil in the ground at the end of the period as compared to the beginning of the period.

Additionally, Anthony is a strong proponent of the entity approach (Assets = Equities) rather than the proprietary approach (Assets-Liabilities = Owners' Equity). This is consistent with his rationale for the major change he proposes for commercial accounting practices: the recognition of interest expense on contributed shareholder capital (Concept 4.02). The

balance sheet amount for shareholders' equity would be the sum of the funds originally contributed plus accrued interest (Concept 4.01). Anthony would not, however, accrue interest on "entity equity" (retained earnings) and this is a major source of equity on the balance sheet of NFP organizations.

The relevance of Anthony's emphasis on the primacy of the income statement may not be immediately apparent in the context of NFP organizations. In Anthony's view the measurement of revenues and expenses is just as important for nonbusinesses as for business entities, although the interpretation differs. The performance of a business can be ascertained by the extent to which revenues exceed expenses by a satisfactory margin compared to the resources invested. According to Anthony, the primary economic goal of a nonbusiness organization is "to provide a satisfactory amount of services with available resources or to provide a specified amount of services with reasonably few resources" (Premise 5). For NFP organizations, revenues in excess of expenses may mean that more services could have been provided. However, even if revenues exactly equal expenses in a NFP organization, financial accounting information alone is unable to show whether the economic goal has been achieved. Nevertheless, revenues equal to or slightly greater than expenses are necessary for the maintenance of nonprofit entity equity which is essential to long-term survival and avoidance of bankruptcy. Using Anthony's concepts (including interest on shareholders' equity), both business and nonbusiness organizations have maintained their equity if revenues equal expenses.

According to Anthony, the only significant difference between business and nonbusiness organizations that should be recognized is the fact that nonbusiness organizations receive "capital from contributors rather than from equity investors" (1989, p. 1). Anthony discusses the "alleged differences" between business and nonbusiness organizations and concludes that there is no need for a different set of principles. Accordingly, it is not surprising that Anthony's framework would require nonbusiness organizations to use accrual accounting rather than expenditures or disbursements. His framework would also require that depreciation expense be recorded. Anthony explicitly rejects the argument that cash-based reports are more reliable than reports that attempt to measure income. However, he advocates the limited use of fund accounting. Anthony claims the use of two funds, operating and nonoperating, is appropriate for all accounting entities. These funds separate information about the status and flow of contributed capital from information regarding operating results. Other funds could be used for internal control purposes, but would not necessarily be reported in financial statements.

Exhibit 5.1.
Financial Statements under the Anthony Model.

**The Museum of Fine Arts
Operating Balance Sheet
as of June 30, Year 2 and Year 1**

	June 30, Year 2	June 30, Year 1
Assets		
Cash and Cash Equivalents	\$ 360,000	\$ 658,000
Pledges for current year operations (net of allowance)	119,000	80,000
Grants receivables	158,000	200,000
Inventory	3,350,000	3,500,000
Investments	105,859,000	97,948,000
Land, buildings & equipment (net)	6,497,000	5,095,000
Total	\$ 116,343,000	\$ 107,481,000
Liabilities and Equities		
Accounts payable	1,194,000	1,100,000
Accrued interest payable	149,000	154,000
Other accrued operating expenses	429,000	353,000
Deferred revenue*	1,152,000	897,000
Mortgage note payable	4,477,000	4,623,000
Total liabilities	7,401,000	7,127,000
Net Operating Equity	108,942,000	100,354,000
Total	\$ 116,343,000	\$ 107,481,000
<i>Notes:</i>		
*Deferred revenue:		
Artist in residence	\$ 284,000	\$ 284,000
Scholarships	83,000	33,000
Special Exhibition-private gifts	484,000	480,000
Special Exhibition-government grants	293,000	100,000
Operations	8,000	-
	1,152,000	897,000
On contributed capital balance sheet:		
Plant (accessions)	6,721,000	9,171,000
Total deferred revenues	\$ 7,873,000	\$ 10,068,000

Exhibit 5.2.
Financial Statements under the Anthony Model.

**The Museum of Fine Arts
Contributed Capital Balance Sheet
as of June 30, Year 2 and Year 1**

	June 30, Year 2 Plant	June 30, Year 1 Plant	June 30, Year 2 Endowment	June 30, Year 1 Endowment
Assets				
Land	\$ 10,685,000	\$ 10,685,000	\$ -	\$ -
Buildings and capital improvements	29,369,000	29,369,000		
Equipment, furniture and fixtures	4,210,000	4,210,000		
Gross book value	44,264,000	44,264,000		
Less accumulated depreciation	(13,484,000)	(12,133,000)		
Net land, buildings and equipment	30,780,000	32,131,000		
Pledges receivable	18,000	9,000		
Investments	11,350,000	11,814,000	173,168,000	152,289,000
Total assets	\$ 42,148,000	\$ 43,954,000	\$ 173,168,000	\$ 152,289,000
Liabilities and Equities				
Deferred revenues	6,721,000	9,171,000		
Annuities payable			2,800,000	3,000,000
Total Liabilities	6,721,000	9,171,000	2,800,000	3,000,000
Invested in plant	30,780,000	32,131,000		
Unexpended capital restricted for accessions	4,647,000	2,652,000		
Endowment for acquisition of art			115,196,000	101,488,000
Endowment to support operations			37,736,000	33,214,000
Term endowment			533,000	-
Designated by board as a term endowment to support renovation of facilities			14,517,000	12,824,000
Life-income and other annuity trusts			2,386,000	1,763,000
Total Contributed Capital	35,427,000	34,783,000	170,368,000	149,289,000
Total liabilities and equities	\$ 42,148,000	\$ 43,954,000	\$ 173,168,000	\$ 152,289,000

Notes to financial statements

Donated and purchased collection items are not included above.

At any one time, approximately 20% of collection items are on public display.

5.2. EXAMPLE FINANCIAL STATEMENTS

Anthony's proposed accounting model is applied to the set of transactions used to illustrate the FASB approach (Chapter 3 in Section II) and the GASB approach (Chapter 4 in Section II). The financial statements presented in Exhibits 5.1 through 5.5 were reviewed by Professor Anthony to make sure that we correctly interpreted and applied the principles of his approach.

Exhibit 5.3.

Financial Statements under the Anthony Model.

**The Museum of Fine Arts
Operating Statement
for the year ended June 30, Year 2**

Revenues	
Contributions in support of operations	\$ 11,342,000
Government grants	610,000
Capital contributions recognized	1,351,000
Contributed services and supplies	440,000
Museum Gala Ball (net of costs)	1,700,000
Endowment earnings restricted for operations	1,881,000
Other investment earnings	5,825,000
Art school tuition	750,000
Admissions, tours and lectures	485,000
Gross profit on gift shop sales	3,060,000
Realized and unrealized gains/losses on investments	7,115,000
Realized loss on disposition of equipment	(6,000)
Total revenues	34,553,000
Expenses	
Preservation of collections	6,846,000
Exhibitions	14,508,000
Art school	1,960,000
Management and general	1,893,000
Fund raising and development	757,000
Total expenses	25,964,000
Net income from operations	\$ 8,589,000

Exhibit 5.4.
Financial Statements under the Anthony Model.

The Museum of Fine Arts
Statement of Changes in Contributed Capital
for the year ended June 30, Year 2

	Plant	Endowment
Increases in Contributed Capital		
Contributions recognized	\$ 3,309,000	\$ 8,500,000
Contributions in the form of long-lived plant assets	2,000,000	
Cash received from deaccessions	361,000	
Realized and unrealized gains on investments	692,000	11,575,000
Endowment earnings restricted for accessions	5,761,000	
Interest and dividends restricted for re-investment		1,004,000
	12,123,000	21,079,000
Decreases in Contributed Capital		
Depreciation expense – contributed plant assets	1,351,000	
Acquisitions of art (not capitalized)	10,128,000	
	644,000	21,079,000
Net increase		
Beginning balance – contributed capital	34,783,000	149,289,000
Ending balance – contributed capital	\$ 35,427,000	\$ 170,368,000

Under the Anthony model, there are two statements of financial position referred to as the Operating Balance Sheet ([Exhibit 5.1](#)) and the Contributed Capital Balance Sheet ([Exhibit 5.2](#)). These represent the two funds he felt were essential for all types of entities to capture operating and nonoperating status and transactions. Similar to the balance sheet, there are two separate “change statements” referred to as Operating Statement ([Exhibit 5.3](#)) and the Statement of Changes in Contributed Capital ([Exhibit 5.4](#)). This dual presentation is somewhat similar to GASB, which presents the general fund separately from nonexpendable funds in at least the funds-based statements. The Statement of Operating Cash Flows ([Exhibit 5.5](#)) does not include certain investing and financing activities that are shown, instead, on the Statement of Changes in Contributed Capital ([Exhibit 5.4](#)). However, the computation and presentation of cash provided by operations is identical to

Exhibit 5.5.
Financial Statements under the Anthony Model.

**The Museum of Fine Arts
Statement of Operating Cash Flows
for the year ended June 30, Year 2**

Cash provided by operations	\$ 4,075,000
Cash flows used by investing activities:	
Purchase of equipment	(1,861,000)
Proceeds from the sale of property	4,000
Purchase of investments	(50,243,000)
Proceeds from the sale of investments	47,873,000
Net cash used by investing activities	(4,227,000)
Cash flows from financing activities:	
Payments on notes payable	(146,000)
Proceeds from borrowing	-
Net cash provided by financing activities	(146,000)
Net increase in cash and cash equivalents	(298,000)
Cash and cash equivalents, beginning of year	658,000
Cash and cash equivalents, end of year	\$ 360,000

Details of cash provided by operations and the reconciliation schedule are omitted because they are the same as under the FASB model. However, it is possible that Anthony, like GASB, would classify interest paid out as a financing activity.

that of FASB. Accordingly, we have omitted the detailed display of the direct and indirect computations.

NOTES

1. In the 1989 book, Anthony is able to challenge the FASB approach quite specifically (particularly SFAC No. 4 (FASB, 1980) and SFAC No. 6 (FASB, 1985)). He was less critical of the GASB possibly due to the fact that this Board had not yet issued many objectionable (to Anthony) standards.

2. Although Anthony (1983, pp. 5–6) felt that concepts for financial reporting of the federal government would be similar in most respects to those of other entities,

Anthony's framework specifically excludes the federal government because it can print money to avoid going bankrupt.

REFERENCES

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CHAPTER 6

MAUTZ'S PROPOSED ACCOUNTING MODEL

The late Professor Robert K. Mautz, was another leading critic of current accounting standards for NFP and public sector entities. To Anthony's (1989) question, "Should business and nonbusiness accounting be different?" Mautz would reply with a resounding *yes!* Unlike Anthony, however, Mautz did not appear to have any particular problems with the way FASB established concepts and standards for financial reporting for business organizations. He was, however, critical of FASB's efforts to establish nonprofit accounting concepts, and his writings present a model that is different from FASB and GASB. He argues that contributions and taxes are similar. In addition, Mautz proposed that the elements of financial statements described in FASB's Concepts Statement No. 3 were insufficient for nonbusiness accounting. He proposed two new elements that he called *service facilities* and *commitments*.

6.1. KEY ASPECTS OF THE MODEL

In *Financial Reporting for Nonprofit Organizations: A Fresh Look*, Mautz (1994) frames his discussion as though a group of consultants has been hired by a large country that is changing from a planned economy to an open-market economy. The team's assignment is to recommend appropriate accounting for nonbusiness organizations. As part of the work by this hypothetical group, team members examine the financial statements of the State of Utah, the American Accounting Association, and the American Association of Retired Persons. Although none of these entities are among traditional charities (i.e., social services), they do represent the wide-range of nonbusiness entities.

Mautz's position on some aspects of nonprofit accounting is not entirely clear. None of the three examples provided in the 1994 book include fixed

assets in the “statement of net assets,” although the principles call for using business accounting rules to report on wealth-increasing activities which two of the example entities clearly have. Thus the examples appear to be a report of “current funds” only. The operating statements (three different titles are used) appear to be prepared on a cash basis, reporting receipts, and expenditures (although the terms “cost” and “expense” are also used). However, there are receivables and payables on the statement of net assets so some accruals would be made. Mautz does not make an issue about different types of donor restrictions and does not specifically discuss endowments, although earnings on investments are shown under profit-directed activities on the operating statement.

The details of financial reporting under the Mautz model for NFP entities are left deliberately general. The recommendations are “principles to be observed rather than rules to be followed” (Mautz, 1994, p. 104). Particular formats are not described because of the tremendous variety of organizations covered by the principles. Accordingly, organizations would have flexibility of manner and style and accountants would use professional judgment to decide if statements put forth by NFP organizations meet the spirit and intent of the principles.

6.1.1. Business and Nonbusiness Organizations are Different

Mautz is particularly adamant about the differences between business and governmental entities (Mautz, 1981) and thus foreshadows the white paper issued by GASB in 2006 on the same topic.¹ Mautz argues that the traditional accounting model ($\text{assets} = \text{liabilities} + \text{equity}$) represents a closed system. Resources are solicited from lenders and owners and used to acquire assets to be used productively in the business’s operations and to purchase goods and services that will be transformed into revenue-generating products and services. The acquisition of assets generates positive cash flows that permit repayment of liabilities and compensate investors.

In contrast, a governmental entity’s balance sheet is an open system in which “fund balance” has no clear meaning and represents only an attempt to “preserve the sanctity of the double-entry system” (Mautz, 1981, p. 55). The government’s power to tax citizens does not appear on the balance sheet, but regularly causes new infusions of assets to appear on the left-hand side of the equation with no real impact on the right-hand side. Mautz points out similar differences with operating statements. In business organizations, net income represents success and there is normally a causal

relationship between expenses and revenues. “Matching revenues and expenses reflects the market’s reaction to a business. Matching taxes and other revenues with operating costs for a government represents no such market test” (p. 56). Instead, elections are the way taxpayers express whether they think the services provided are worth the price.

6.1.2. Unique Sources of Revenue

Mautz argues that contributions and tax receipts are fundamentally similar. Both provide resources to be used for an organization’s purposes, both can be subject to restrictions, both are nonreciprocal transfers, and both require solicitation efforts. A government must convince citizens to accept new or increased taxes; charities must convince donors to continue or increase their contributions. In both cases, resource providers must be convinced “that the resources are needed for worthy purposes and will not be wasted” (Mautz, 1994, p. 12). In addition, the arguments made for the differences between business and governmental balance sheets and operating statements would apply almost as well to charitable organizations. Fund balance (or net asset position in FASB’s terminology²) is difficult to interpret directly and assets appear on the left-hand side of the balance sheet equation via contributions without any real impact on the right-hand side. Matching of revenues and expenses is nebulous when compared to profit-oriented activities. “Fund-raising permits services, it doesn’t cause the services. Providing services expends the funds, it doesn’t bring them in” (Mautz, 1994, p. 51). On Mautz’s operating statement (see Exhibit 6.2), wealth-increasing activities would be clearly segregated from the value-transferring and cost-sharing activities of the NFP entity. Expenditures for fundraising would be netted against the contributions received rather than commingled with the expenditures related to providing the value-transferring and cost-sharing programs.

Financial reporting for predominantly cost-sharing or value-transferring entities should “emphasize the needs and interests of contributors and taxpayers as the primary users of such reports” (Mautz, 1994, p. 13). The omission of “creditors” (included in both FASB and GASB conceptual frameworks as primary users) is deliberate. A banker, for example, would not spend “much time comparing the balance sheet of a business corporation with the balance sheet of a NFP entity. His real interest in the NFP entity would be its flow of receipts,” (Mautz, 1994, p.49). The future success of the organization and its viability as a going concern cannot be evaluated without

some attempt to compare commitments and obligations to the entity's record in obtaining resources from contributors and others.

6.1.3. New Elements-Service Facilities and Commitments

Mautz was one of the first to consider the theoretical implication of what is now often referred to as heritage assets. His *service facilities* resemble assets but also have characteristics of liabilities. These "service facilities are useful, desirable, and often costly properties that, when used in a nonprofit entity's activities, are cash-consuming rather than cash-generating," (Mautz, 1994, p. 109).³ The acquisition of a service facility commits the NFP organization to maintaining and staffing the facility over a long period of time. Mautz suggested that service facilities be reported separately on a stewardship basis and not be included in assets on the "statement of net assets" (the term he used instead of balance sheet or statement of financial position). Service facilities could be reported at historical cost, approximate current values, or at depreciated cost. Depreciation disclosures "probably have little usefulness to anyone" (Mautz, 1994, p. 57) and would be replaced with a general description of the extent, condition and plans for the properties.

The second new conceptual element proposed by Mautz is *commitment*.⁴ Commitments may or may not meet the definition of a liability but represent obligations of the entity. For example, when an organization starts a new program, there is often an implied commitment to continue to offer the program indefinitely into the future. "Good management of a not-for-profit consists of making the right commitments and in keeping commitments and contributions in reasonable balance" (Mautz, 1990, p. 94). Planned maintenance, replacement, and so forth, would be included in a statement of commitments. This statement would cover the next five years or so and would serve the same purpose that accrual accounting serves in business reporting. His recommendations seem revolutionary to many accountants because they call for reporting long-range budgets to present the commitments that management has made to maintain facilities, operate programs, and so forth.

6.2. EXAMPLE FINANCIAL STATEMENTS

The Mautz approach to nonprofit accounting is applied to the set of transactions developed for the museum and used to illustrate the FASB,

GASB, and Anthony models in the previous chapters. The financial statements presented in Exhibits 6.1 through 6.4 were reviewed by Professor Mautz to make sure that we correctly interpreted and appropriately applied the principles of his model.

The Statement of Net Assets (essentially a balance sheet for financial assets and liabilities) is presented in Exhibit 6.1. The Statement of Support and Expenditures (Exhibit 6.2) is quite different from FASB's Statement of Activities (Exhibit 3.2 in Chapter 3 of Section II) and Anthony's Operating Statement (Exhibit 5.3 in Chapter 5 of Section II). Note that NFP activities are presented at the top of the statement and for-profit activities are in a separate section at the bottom. Like the GASB format for the Statement of Activities (Exhibit 4.2 in Chapter 4 of Section II), costs are reported before revenues.

The Statement of Commitments (Exhibit 6.3) is unique among the four models. This is a future-oriented statement that forecasts the costs of

Exhibit 6.1.
Financial Statements under the Mautz Model.

**The Museum of Fine Arts
Statement of Net Assets
As of June 30, Year 2 and Year 1**

Assets	June 30, Year 2	June 30, Year 1
Cash & Cash Equivalents	\$ 360,000	\$ 658,000
Investments, at cost (fair value \$319,612,000)	246,559,000	226,005,000
Pledges for current year operations (net of allowance)	137,000	89,000
Grants receivables	158,000	200,000
Gift shop inventory	3,350,000	3,500,000
Total Assets	250,564,000	230,452,000
Liabilities		
Accounts payable	1,194,000	1,100,000
Accrued interest payable	149,000	154,000
Other accrued liabilities	429,000	353,000
Deferred revenue	7,873,000	10,068,000
Annuities payable	2,800,000	3,000,000
Mortgages payable	4,477,000	4,623,000
Total Liabilities	16,922,000	19,298,000
Net assets	\$ 233,642,000	\$ 211,154,000

Exhibit 6.1. (Continued)**Notes to the financial statements**

Net assets restricted by donors:	June 30, Year 2	June 30, Year 1
Endowment to support operations	\$ 32,161,000	\$ 28,645,000
Endowment for accessions of art	98,159,000	87,528,000
Term endowment, restricted by donor for long-term investment until principal reaches \$1,000,000 at which time it will become an endowment to support programs at the art school	522,000	-
Acquisition of art	2,324,000	1,027,000
Restricted under life-annuity arrangements with donors	1,589,000	1,108,000
Unrestricted net assets:		
Designated by board as a term endowment to support renovation of facilities	12,367,000	11,060,000
Unrestricted net assets	86,520,000	81,786,000
Total	\$ 233,642,000	\$ 211,154,000

Deferred revenues are related to the following purposes and will be recognized when the donors' restrictions have been satisfied.

	June 30, Year 2	June 30, Year 1
Accessions of art	\$ 6,721,000	\$ 9,171,000
Artist in residence program	284,000	284,000
Scholarships	83,000	33,000
Special exhibitions (private donations)	484,000	480,000
Special exhibitions (government grants)	293,000	100,000
Other operating activities	8,000	-
Total	\$ 7,873,000	\$ 10,068,000

accessions and programs (commitments) and details anticipated sources of revenues. In essence, it is a budget that covers the next five years.

The final statement is the Statement of Purchased Service Facilities (Exhibit 6.4). Here is where the reader would find information on the service facilities (heritage and infrastructure assets). The disclosures also provide details about insurance coverage, deferred maintenance and the like. Mautz does not mention any requirement for a statement of cash flows for NFP activities.

Exhibit 6.2.
Financial Statements under the Mautz Model.

**The Museum of Fine Arts
Statement of Support & Expenditures
For the Year Ended June 30, Year 2**

NOT-FOR-PROFIT ACTIVITIES**Operating costs for museum:**

Preservation of collections	\$	6,630,000	
Exhibitions		11,775,000	
Art School		1,838,000	
Management & General		1,301,000	\$ 21,544,000

Less contributions and support and operating income:

Contributions in support of operations		14,651,000	
Government grants		610,000	
Gala Ball (net of direct costs)		1,500,000	

		16,761,000	
Less fundraising and development		530,000	16,231,000
Art school tuition		750,000	
Admissions, tours and lectures		485,000	1,235,000
Total operating income and support			17,466,000

Net expenditures for operations 4,078,000

Other increases in net assets:

Gifts intended for long-term investment (endowments)			8,500,000
Proceeds from deaccessions			361,000
Proceeds from sale of equipment			4,000

Other reductions of net assets:

Accessions		8,128,000	
Other capital outlays for equipment and fixtures		1,861,000	
Interest expense-mortgage		457,000	(10,446,000)

Other increases/(decreases) in net assets (1,581,000)**Net cost of not-for-profit activities** 5,659,000**FOR-PROFIT ACTIVITIES****Net income from profit-oriented activities:**

Gift Shop:

Sales		5,100,000	
Less cost of goods sold		(2,040,000)	
Less operating expenses		(993,000)	2,067,000

Interest and dividends on investments 14,471,000Realized gains on sale of investments 11,609,000Total receipts from profit-oriented activities 28,147,000**Increase (Decrease) in Net Assets** \$ 22,488,000

Exhibit 6.3.
Financial Statements under the Mautz Model.

	Year 3	Year 4	Year 5	Year 6	Year 7
The Museum of Fine Arts Statement of Commitments As of June 30 Year 2					
Accessions:					
Planned acquisitions of art	\$ 10,000,000	\$ 10,300,000	\$ 10,609,000	\$ 10,927,000	\$ 11,255,000
Less anticipated earnings of endowment (1)	(6,328,000)	(6,403,000)	(6,403,000)	(6,515,000)	(6,628,000)
Less utilization of deferred revenue	(1,809,000)	(1,809,000)	(1,809,000)	(1,809,000)	(1,809,000)
Shortfall in accessions program	1,863,000	2,088,000	2,397,000	2,603,000	2,818,000
Continuing programs:					
Preservation (2)	6,829,000	7,034,000	7,245,000	7,462,000	7,686,000
Exhibitions	12,128,000	12,492,000	12,867,000	13,253,000	13,651,000
Art School	1,893,000	1,950,000	2,009,000	2,069,000	2,131,000
Management and general	1,340,000	1,380,000	1,421,000	1,464,000	1,508,000
Fund raising and development	752,000	775,000	798,000	822,000	847,000
	22,942,000	23,631,000	24,340,000	25,070,000	25,823,000
Less anticipated earnings of endowment (1)	(2,073,000)	(2,123,000)	(2,123,000)	(2,123,000)	(2,148,000)
Operating shortfall	20,869,000	21,508,000	22,217,000	22,947,000	23,675,000
Other commitments:					
Planned special exhibitions	1,000,000	1,500,000	1,000,000		
Debt service including interest	608,000	608,000	608,000	608,000	608,000
Renovation of modern art museum building				15,000,000	15,000,000
Less board designated term endowment				(7,158,000)	(7,516,000)
Additional resources needed to meet commitments	24,340,000	25,704,000	26,222,000	34,000,000	34,585,000
Anticipated sources of support:					
Known grants and pledges of support for					
future operations	799,000	459,000	170,000	170,000	170,000
Other operating contributions (3)	14,481,000	14,481,000	14,481,000	14,481,000	14,481,000
Government Grants	(20,000)	320,000	610,000	610,000	610,000
Museum Gala Ball	1,751,000	1,804,000	1,858,000	1,914,000	1,971,000
Other investment income	7,049,000	7,260,000	7,478,000	7,702,000	7,933,000
Gross profit-gift shop	2,129,000	2,193,000	2,259,000	2,327,000	2,397,000
School Tuition	773,000	796,000	820,000	845,000	870,000
Admissions, Tours & Lectures	500,000	515,000	530,000	546,000	562,000
Total Anticipated Support	26,663,000	27,369,000	28,036,000	28,425,000	28,824,000
Anticipated excess/(shortage) of support and revenue over commitments (4)	\$ 2,323,000	\$ 1,665,000	\$ 1,814,000	\$ (5,575,000)	\$ (5,761,000)

Exhibit 6.3. (Continued)*Notes:*

(1) Investment earnings are estimated based on the assumption that existing pledges of \$1,500,000 for the operating endowment and \$6,000,000 for the accessions endowment will be received as scheduled over the next 5 years.

(2) Estimated future operating expenses are based on current levels increased annually by 3%.

(3) Admission to the museum is free for individuals with a suggested contribution of \$5. Fees are charged for tours and special lectures. Estimated future contributions and grants are based on current levels with no allowance for inflation. Other revenues are increased 3% per year.

(4) Shortfalls in the past have led to postponement of accessions and major renovation projects.

Exhibit 6.4.**Financial Statements under the Mautz Model.**

**The Museum of Fine Arts
Statement of Purchased Service Facilities
June 30, Year 2**

Land	\$	10,685,000
Buildings and capital improvements		34,544,000
Equipment, furniture and fixtures		8,828,000
		54,057,000
Gross book value		54,057,000
Less: Accumulated Depreciation		(16,780,000)
		37,277,000
Net land, buildings and equipment		37,277,000
Collections		628,281,000
		665,558,000
Purchased service facilities, net of accumulated depreciation	\$	665,558,000

Notes:

Purchased collection items are expensed when acquired.

Donated collection items are not included above. They constitute approximately 40% of artwork in collections.

At any one time, approximately 20% of collection items are on public display. Collections are insured for \$900 million.

Land, building and equipment includes donated real estate at estimated fair value at date of gift.

Buildings are insured for \$90 million estimated replacement cost.

Depreciation expense is not included on the Statement of Support and Expenditures and is reported here for information purposes only.

Except for minor replacements, service facilities appear adequate to meet the Museum's needs for the next three years. In Year 6, a 2-year major renovation of the modern art building is planned.

NOTES

1. Mautz (1994, p. 41) provides a table that lays out the differences between business and nonbusiness organizations.

2. On this point, Mautz is in agreement with FASB. Fund balance is not a meaningful term and should be replaced by “net assets.” He and FASB also agree that fund accounting is fine for control purposes but only serves to confuse readers when allowed to dominate the basic financial statements. His version of an operating statement would, like FASB’s statement of activities, report the “change in net assets.” However, the figures would not be the same because “service facilities” are not considered assets in Mautz’s model.

3. The logic of Mautz’s position is presented most clearly in his 1989 article in *the Journal of Accountancy* where he provides a point-by-point analysis of FASB’s definitions of assets and liabilities to show that “service facilities” have only two of the three essential characteristics of an asset and also have two of the three essential characteristics of a liability.

4. Mautz’s most thorough discussion of the importance of reporting commitments is found in his 1990 article in *Journal of Accountancy*. He argues for disclosure of commitments but accounting only for completed transactions. The rationale for the difference appears to be the higher level of uncertainty involved in measuring commitments.

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CHAPTER 7

COMPARISON OF FINANCIAL STATEMENTS

The examples in Chapters 4 through 6 of Section II are based on a uniform set of transactions but produced financial statements that “look different” and may therefore impact the decisions made by those using the reports. Although these transactions represent a small subset of possible transactions, it is evident that these different accounting models applied to a given set of transactions will produce materially different results from one another. This chapter compares the resulting numbers that would be reported under the four alternate approaches to nonbusiness accounting.

The major differences between the models can be attributed to (1) different criteria for recognizing assets or liabilities and (2) differences in revenue and expense recognition. Of lesser importance, though visually significant, are differences in presentation within the statements. In each section, we briefly explain why particular amounts are different and discuss the strengths and weaknesses of each model.

7.1. ASSETS AND LIABILITIES

As shown in [Table 7.1](#), the total assets and total net assets amounts are largest under the FASB and GASB models, primarily due to capitalization of collections, whereas the amounts are smallest under the Mautz and Anthony models. That said, total liabilities are larger under the Mautz and Anthony models primarily due to the differences in timing of the recognition of donor-restricted gifts. In addition, net assets are labeled differently under each model. Although the display of net assets is not material in and of itself, the differences in measurement between the methodologies cause the amounts reported to appear quite different and may have a fundamental impact on user analyses.

Table 7.1. Comparison of Balance Sheet Totals.

	FASB		GASB (entity-wide)	
	Year 2	Year 1	Year 2	Year 1
Total assets	\$1,366,029,000	\$1,324,817,000	\$1,314,517,000	\$1,279,256,000
Total liabilities	9,049,000	9,230,000	9,350,000	9,330,000
Total net assets	\$1,356,980,000	\$1,315,587,000	\$1,305,167,000	\$1,269,926,000
	Anthony ^a		Mautz	
	Year 2	Year 1	Year 2	Year 1
Total assets	\$331,109,000	\$303,196,000	\$250,564,000	\$230,452,000
Total liabilities	14,883,000	17,232,000	16,922,000	19,298,000
Total net assets	\$316,226,000	\$285,964,000	\$233,642,000	\$211,154,000

^aCombined amounts reported in Exhibits 5.1 and 5.2 in Chapter 5 of Section II.

7.1.1. Heritage Assets

The primary cause for the differing amounts in total assets is due to the capitalization of museum collections as permitted under the FASB and GASB standards. The FASB and GASB guidelines on artifacts of scientific, historical, or cultural value (heritage assets) are essentially identical. Both the GASB and FASB examples reflect the capitalization of collections and, for example purposes, we have presented both unrestricted and permanently restricted (nonexpendable) net assets associated with collections in the balance sheets shown in Exhibits 3.1 and 4.1 in Chapters 3 and 4 of Section II. Table 7.2 shows in detail the acquisitions and dispositions (referred to as “accessions and deaccessions” in the museum industry) during the year.

In contrast to FASB and GASB standards, Mautz’s proposal does not capitalize heritage assets. To Mautz, heritage assets are a prime example of the “service facilities” element missing from the FASB conceptual framework for nonbusiness entities. In Exhibit 6.2 in Chapter 6 of Section II, under the Mautz model, the purchased accessions of \$8,128,000 are accounted for as expenditures in the NFP activities section of the Statement of Support and Expenditures. It is also important to note that the total accessions and deaccessions reported by Mautz in Exhibit 6.4 in Chapter 6 of Section II, Statement of Purchased Service Facilities, is less than the totals presented in the FASB/GASB statements due to the difference in donated collection items received through year 2.

Table 7.2. Capitalization of Art Collection (FASB and GASB).

	Beginning Balance	Accessions	Deaccessions	Ending Balance
Unrestricted collection items	\$193,450,000	\$6,789,000		\$200,248,000
Permanently restricted (FASB) or nonexpendable (GASB) collection items	794,000,000	3,330,000	(307,000)	797,023,000
Total collection items	\$987,450,000	\$10,128,000	(\$307,000)	\$997,271,000
Accessions	Donated	Purchased		
Unrestricted collection items	\$1,200,000	\$5,598,000		
Permanently restricted or nonexpendable collection items	800,000	2,530,000		
	\$2,000,000	\$8,128,000		

Anthony appears indifferent between capitalization and expensing of heritage assets. Accordingly, we chose to expense rather than capitalize the collection items in the Anthony example.¹ Thus, the Statement of Changes in Contributed Capital (Exhibit 5.5 in Chapter 5 of Section II) shows both donated and purchased accessions as a \$10,128,000 decrease in contributed capital.

7.1.2. Other Plant Assets

Under the Anthony and FASB models, depreciation expense was \$1,800,000 and allocated among the functional areas, whereas under the GASB model, the same \$1,800,000 of depreciation was allocated among functional expenses on the entity-wide Statement of Activities (Exhibit 4.2 in Chapter 4 of Section II), but no depreciation is recognized on the funds-based Statement of Revenues, Expenditures, and Changes in Fund Balances (Exhibit 4.4 in Chapter 4 of Section II). Mautz would not recognize depreciation expense related to assets used for NFP activities although the Statement of Purchased Service Facilities (Exhibit 6.4 in Chapter 6 of Section II) reduces plant assets by an amount for accumulated depreciation. Furthermore, the net amount for plant assets is the same under the FASB, GASB, and Mautz models.

The most notable difference in accounting for property, plant, and equipment is in the Anthony model. This difference is mainly a matter of display since plant assets are divided between the Operating Balance Sheet

(Exhibit 5.1 in Chapter 5 of Section II) and the Contributed Capital Balance Sheet (Exhibit 5.2 in Chapter 5 of Section II), and is the result of Anthony distinguishing between assets acquired with contributed (donated) resources and those acquired with operating resources (retained earnings). Thus, under the Anthony model, only depreciation related to purchased plant assets impacts the “bottom line” on the operating statement (Exhibit 5.3 in Chapter 5 of Section II) because \$1,351,000 in “capital contributions” are recognized in revenue to offset a large portion of the \$1,800,000 in depreciation expense allocated among the functional expense categories. The \$1,351,000 in capital contributions also appears as a decrease in contributed capital in the plant column of the Statement of Changes in Contributed Capital (Exhibit 5.4 in Chapter 5 of Section II). Note that this gradual recognition of gifts of buildings and equipment is also permitted under the FASB standards (see SFAS No. 116, Paragraph 16, *FASB*, 1993a).

7.1.3. Investments

Valuation of investments is another key area causing differences in total assets reported among the four models (see *Table 7.3*). FASB requires that investments be reported at market value on the Statement of Financial Position (balance sheet) with changes in fair value recognized in the Statement of Activities as they occur (SFAS No. 124 – *FASB*, 1995). These gains and losses are then reported as increases or decreases in unrestricted net assets unless their use is explicitly restricted by the donor. Conversely, *Anthony* (1983) proposes reporting equity investments at cost (book value) and debt investments at fair market value (see Concept 7.09 in *Tell it Like it Was*).

Table 7.3. Comparison of Investments.

	FASB		GASB	
	Year 2	Year 1	Year 2	Year 1
Investments	\$319,612,000	\$286,083,000	\$275,794,000	\$250,036,000
	Anthony ^a		Mautz	
	Year 2	Year 1	Year 2	Year 1
Investments	290,377,000	262,051,000	246,559,000	226,005,000

^aAnthony reports \$105,850,000 in Year 2 investments and \$97,948,000 in Year 1 investments on the Operating Balance Sheet (Exhibit 5.1 in Chapter 5 of Section II) and the remainder on the Contributed Capital Balance Sheet (Exhibit 5.2 in Chapter 5 of Section II).

Anthony's unique approach is the opposite of the usual GASB reporting. Governments report equity investments at fair value but generally take advantage of the option to report debt securities with maturity terms of one year or less at amortized cost (GASB Statement No. 31, *GASB, 1997*). That said, Mautz uses cost to measure all investments since unrealized gains are not financial resources immediately available. While market values are disclosed, Mautz only uses fair value reporting (commercial accounting rules) for investments related to business-type activities (this is not illustrated because the example transactions do not have any investments associated with the museum's gift shop).

In our example, the museum uses a pooled investment fund to manage endowments and other resources. Valuation of the investments varies depending on the accounting model used. From a practical perspective, there may be some differences in managing a pooled investment. Under GASB, changes in the fair value of investments are recognized as revenue for both governmental fund statements and government-wide statements, even though funds are not available to meet current period expenditures unless the investments are sold. This is a notable departure from the traditional accounting for governmental funds, which focuses on currently available financial resources.

Under FASB, investments of temporarily restricted net assets create unrestricted (or temporarily restricted) investment income (interest and dividends and gain or loss). However, Anthony includes some investment income in the Statement of Changes in Contributed Capital (Exhibit 5.4 in Chapter 5 of Section II) rather than reporting it as operating revenue. In the Mautz example, earnings on investments and realized gains are shown under profit-directed activities on the Statement of Support & Expenditures (Exhibit 6.2 in Chapter 6 of Section II).

7.1.4. Current Assets and Liabilities

The differences in the total liabilities among the four models result primarily from variations in recognition criteria for donor-restricted gifts and grants. The FASB and GASB totals for assets and liabilities are fairly similar (Table 7.1). The slight difference is related to the treatment of revenues with time restrictions. FASB immediately recognizes gifts and grants with time restrictions but GASB defers revenue recognition until time restrictions (a type of eligibility requirement) are met (refer to Table 4.2 in Chapter 4 of Section II). If cash has been received, a liability is recognized.

Table 7.4. Differences in Current Assets and Liabilities.

	Deferred Revenues (Beginning)	Deferred Revenues (Ending)	Contributions and Grants Receivable (Beginning)	Contributions and Grants Receivable (Ending)
Panel A				
FASB	None	None	\$9,900,000	\$8,159,000
GASB	\$100,000	\$301,000	386,000	465,000
Anthony ^a	10,068,000	7,873,000	289,000	295,000
Mautz	10,068,000	7,873,000	289,000	295,000
	FASB	GASB (Statement of Net Assets)	Anthony (Operating Balance Sheet)	Mautz
Panel B				
Current assets (excluding investments and noncurrent pledges receivable)	\$5,128,000	\$4,108,000	\$3,987,000	\$4,005,000
Current liabilities (Includes long-term debt due within one year and excludes deferred revenues that will not be recognized within a year)	2,142,000	2,443,000	1,312,560	333,000
Working capital	\$2,986,000	\$1,665,000	\$2,674,440	\$3,672,000

^aCombines figures from Exhibits 5.1 and 5.2 in Chapter 5 of Section II.

In our example, the difference in total liabilities at the end of Year 2 is \$301,000 related to grants intended to support operations in the following year (see Table 7.4). The difference in total assets is much larger, principally due to the valuation of investments as we discussed earlier. However, there is also a \$7,694,000 difference associated with contributions and grants receivable. Much of this difference is related to endowment pledges which are recognized by FASB but not GASB. GASB recognizes endowment gifts as revenue when cash or other assets are received but not earlier because a pledge provides no tangible resources that could be invested in perpetuity in accordance with donor stipulations.

The substantially larger amounts for deferred revenues reported as current liabilities under the Anthony and Mautz models occur because they both believe that gifts with donor-imposed restrictions on use should

be deferred until the organization has performed as promised. Obviously, these differences also affect grants receivables and contributions receivable (Table 7.4) and will be discussed later under the comparison of revenue recognition criteria. In our example, some of the pledges are related to exhibitions in future years. FASB recognizes these pledges as grants receivable whereas GASB does not. GASB does not require multiyear pledges to be discounted to present values, further exacerbating these discrepancies. The Anthony and Mautz views on revenue recognition are very similar. Neither records pledges related to programs to be delivered in future years. The amounts presented as deferred revenue in the Anthony and Mautz examples are \$7,873,000 more than FASB and \$7,572,000 more than GASB (Table 7.4, Panel A). Although some of the differences are offsetting, each alternative model leads to considerably different amounts of reported working capital, as shown in Table 7.4, Panel B.

7.2. REVENUES AND EXPENSES

The differences in measurement for gifts and grants lead to the most significant differences in reported revenues and expenses for the four models. The primary sources of the discrepancies are noncash contributions and depreciation in reported expenses. Ostensibly, these differences also impact the bottom-line change in net assets. In addition, choices on how to display revenues and expenses make the income statement equivalents appear different, even when revenues and expenses are measured in the same way. The following sections describe and explain the effect of the differences in the examples.

7.2.1. Contributions and Grants

The most complex set of differences between the models is the dissimilar revenue recognition criteria used for contributions and grants. FASB is the most aggressive in recognizing promises to give and records unconditional pledges as revenue even when the promises relate to gifts not due for several years. To avoid recognizing contributions as unrestricted revenue before they are available for expenditure, NFP entities that follow FASB standards record pledges subject to time restrictions as temporarily restricted. When the cash is received and available for expenditure, the resources are transferred from the temporarily restricted to the unrestricted category.

Table 7.5. Comparative Reporting of Contributions and Grants.

	FASB	GASB	Anthony	Mautz
Contributions received in cash	\$20,715,000	\$20,715,000	\$20,715,000	\$20,715,000
Noncash contributions recognized	2,140,000	2,000,000	2,440,000	0
Capital contributions recognized	0	0	1,351,000	0
Change in pledges receivable	(1,819,000)	121,000	48,000	48,000
Change in deferred revenue	0	(8,000)	2,388,000	2,388,000
Contributions recognized	\$21,036,000	\$22,828,000	\$26,942,000	\$23,151,000
Grants received in cash	\$845,000	\$845,000	\$845,000	\$845,000
Change in grants receivable	78,000	(42,000)	(42,000)	(42,000)
Change in deferred revenue	0	(193,000)	(193,000)	(193,000)
Grants recognized in revenue	\$923,000	\$610,000	\$610,000	\$610,000
Total grants and contributions	\$21,959,000	\$23,438,000	\$27,552,000	\$23,761,000

GASB recognizes purpose restrictions but treats time restrictions very differently. Under *GASB Statement No. 33 (1998)*, contributions and grants must meet all eligibility requirements, including time requirements, to be recognized as revenue. In addition, resources received in advance are reported as deferred revenue. FASB and GASB also differ with respect to endowment pledges. Under GASB the revenue cannot be recognized until received; thus, endowment pledges are recognized under FASB but not under GASB. As shown in *Table 7.5*, the FASB and GASB totals are similar in amount but this would vary depending on when gifts are pledged, received, and designated for use by donors. For the transactions used in the examples, the total contributions and grants under GASB standards is actually higher than the amounts reported under FASB. This is because some of the gifts received during Year 2 had already been recognized in an earlier period under FASB standards.

Mautz and Anthony treat purpose restrictions the way GASB treats time requirements. Specifically, gifts are not recognized as revenue until the organization has satisfied the donors' expressed wishes. Another difference shown in the examples caused by differing standards is that some of the exhibition pledges and grants are intended for use in future periods: although, FASB recognizes them currently, GASB, Anthony, and Mautz do not. Under these models, promises to give or gifts intended for use in future time periods are matched to the time period when the resources will be used.

Noncash contributions of services and materials are also treated differently under the various models. These differences rarely affect the “bottom line” because recognition increases revenues and expenses equally. FASB has more restrictive rules than Anthony with respect to what types of services can be recognized and GASB is silent with respect to contributed services.² In our examples, only the \$2,000,000 fair value of donated works of art are recognized in the GASB statements, whereas \$50,000 in donated supplies for the art school and \$90,000 in donated legal services in management and general are recognized in the FASB statements. Noncash contributions under Anthony are larger by an additional \$300,000 in services related to docents because this type of volunteer service does not meet the FASB recognition standards. In contrast, no noncash contributions are recognized on the Mautz Statement of Support and Expenditures (see Exhibit 6.2 in Chapter 6 of Section II).

Revenues from contributions and grants are displayed differently under the four models. FASB presents contributions and grants at the top of its Statement of Activities (Exhibit 3.2 in Chapter 3 of Section II) as part of total public support and revenues. The GASB Statement of Activities (Exhibit 4.2 in Chapter 4 of Section II) starts with expenses and then subtracts \$1,988,000 in operating grants and contributions as part of program revenues. The remaining \$10,950,000 in unrestricted contributions is reported as part of general revenues in the bottom section of the statement along with the contributions toward endowments and donated art. Mautz also presents operating costs first and then subtracts \$14,651,000 in contributions and \$610,000 in grants (see Exhibit 6.2 in Chapter 6 of Section II). The remaining \$8,500,000 in endowment gifts is presented after “net expenditures for operations” under the heading “other increases in net assets.” The total differs from Anthony by the amount of noncash contributions and the transfer to cover depreciation on donated buildings and equipment. However, the Anthony amounts are spread over two different statements. The operating statement reports \$13,743,000, the sum of the first four revenue amounts on Exhibit 5.3 in Chapter 5 of Section II. The remaining \$13,809,000 in cash and noncash contributions is reported as the first two lines under increases in contributed capital on Exhibit 5.4 in Chapter 5 of Section II.

7.2.2. Expenses

Generally, there are few differences in recognition criteria for expenses. Differences arise primarily from depreciation and noncash contributed

services or supplies. As shown in [Table 7.6](#), the functional expenses on the FASB and GASB Statements of Activities ([Exhibits 3.2 and 4.2](#) in [Chapters 3 and 4](#) of [Section II](#)) are substantially the same despite the differences in display. Total expenses under the FASB model are \$300,000 lower than what is reported in Anthony's Operating Statement ([Exhibit 5.3](#) in [Chapter 5](#) of [Section II](#)) due to the limited recognition of donated services permitted under SFAS No. 116. Likewise, FASB's expenses are \$140,000 higher than GASB's expenses since some recognition of noncash donations of supplies and services is required by FASB.

Mautz's statement of support and expenditures is most similar to the GASB funds-based statement: both omit depreciation expense and present capital outlays as expenditures (see [Table 7.6](#)). Consequently, the functional categories on Mautz's Statement of Support and Expenditures ([Exhibit 6.2](#) in [Chapter 6](#) of [Section II](#)) match those on the GASB funds-based Statement of Revenues, Expenditures, and Changes in Fund Balance ([Exhibit 4.4](#) in [Chapter 4](#) of [Section II](#)), with one exception; the \$200,000 difference is a matter of display – certain additional costs related to the Gala Ball are netted against revenue on the Mautz Statement of Support and Expenditures ([Exhibit 6.2](#) in [Chapter 6](#) of [Section II](#)).

GASB and Mautz are also similar in the way they choose to display for-profit and NFP activities separately. However, GASB uses “business-type activities” more loosely than Mautz and governmental entities with both business-type and nonbusiness-type activities may report as though all activities were business-type, generally based on whether fees are charged for services. Mautz makes a clear distinction between commercial and NFP endeavors. However, both Mautz and GASB show a concern for accounting on the basis of resources available rather than accrual accounting, although only GASB's approach includes statements under both. Additionally, the GASB Statement of Activities ([Exhibit 4.2](#) in [Chapter 4](#) of [Section II](#)) and the Mautz Statement of Support and Expenditures ([Exhibit 6.2](#) in [Chapter 6](#) of [Section II](#)) present expenses before revenues – in recognition of the fact that nonbusiness organizations exist to provide services and thereby incur costs.

The largest difference between expenses and expenditures is the \$1,800,000 in depreciation expense. Mautz does not record depreciation expense on service facilities. This is consistent with [Sunder \(1999\)](#) who argues that public-goods organizations have beneficiaries as opposed to customers (who can withhold purchases). Since goods are not sold to customers at a price, there is no need to use depreciation as part of a price setting policy. Other accountants argue that depreciation of plant assets is

Table 7.6. Comparative Display of Results of Operations.

“Operating Income” Equivalent for	FASB	GASB (Entity-Wide)	GASB (Funds- Based)	Anthony	Mautz
Contributions and grants	\$12,290,000	\$23,438,000	\$14,017,000	\$13,743,000	\$23,761,000
Museum Gala Ball, net of cost	1,700,000	1,700,000	1,700,000	1,700,000	1,500,000
Gross profit on gift shop sales	3,060,000	3,060,000	3,060,000	3,060,000	2,067,000
Art school tuition	750,000	750,000	750,000	750,000	750,000
Admissions, tours and lectures	485,000	485,000	485,000	485,000	485,000
Investment Income	8,429,000	14,471,000	10,993,000	7,706,000	14,471,000
Gain on investments	10,246,000	16,813,000	7,914,000	7,115,000	11,609,000
Realized loss on sale of equipment	(6,000)	(6,000)		(6,000)	
Proceeds from sale of equipment			4,000		4,000
Realized gain on deaccessions	–	54,000			
Proceeds from deaccessions			–		361,000
Net assets released from restrictions	6,561,000				
<i>Expenses or expenditures</i>					
Preservation	(6,846,000)	(6,846,000)	(6,630,000)	(6,846,000)	(6,630,000)
Exhibitions	(14,208,000)	(13,045,000)	(11,775,000)	(14,508,000)	(11,775,000)
Art school	(1,960,000)	(1,910,000)	(1,838,000)	(1,960,000)	(1,838,000)
Administrative	(1,893,000)	(1,803,000)	(1,301,000)	(1,894,000)	(1,301,000)
Fundraising	(757,000)	(757,000)	(730,000)	(757,000)	(530,000)
Gift shop expenses		(1,163,000)	(993,000)		
Capital outlays-accessions			(6,798,000)		(8,128,000)
Capital outlays-equipment			(1,861,000)		(1,861,000)
Interest expense					(457,000)
Interest paid on long-term debt			(462,000)		
Principal paid on long-term debt			(346,000)		
<hr/>					
Change in unrestricted net assets (Exhibit 3.2 in Chapter 3 of Section II)	<u>\$17,851,000</u>				
Change in net assets- governmental activities (Exhibit 4.2 in Chapter 4 of Section II)		<u>\$35,241,000</u>			
Change in expendable net assets- (Exhibit 4.4 in Chapter 4 of Section II)			<u>\$6,189,000</u>		
Net income from operations (Exhibit 5.3 in Chapter 5 of Section II)				<u>\$8,588,000</u>	
Increase in net assets (Exhibit 6.2 in Chapter 6 of Section II)					<u>\$22,488,000</u>

Note: Although not displayed in this order on the financial statements, this table shows the nature of revenues and expenses considered unrestricted, general, operating, etc. with respect to the five models (including the double-display for GASB).

useful because it helps measure the “true” cost of providing services. Theoretically, although depreciation might be viewed as a source of funds that could be used to replace assets, it only functions that way if an organization actually sets aside cash or investments equal to depreciation expense. The issue of depreciation is also problematic in the NFP setting if the assets will be maintained indefinitely – particularly if they are considered irreplaceable. That is why no depreciation of collection items is recognized in the FASB and GASB examples, even though collection items are capitalized.

7.2.3. Results of Operations

The combined effect of the different revenue and expense recognition criteria under the four models has a dramatic impact on the “bottom line” as shown in [Table 7.6](#). The FASB standards permit intermediate subtotals on the Statement of Activities but imply that the change in unrestricted net assets should generally be a satisfactory indicator of the results of current operations (see SFAS No. 117, Paragraph 112, [FASB, 1993b](#)). The GASB equivalent would possibly be the change in expendable net assets but this figure is not available on an accrual basis. Accordingly, we have included two versions of “the bottom line” for GASB in [Table 7.6](#). Each is potentially useful for different purposes. The differences between Anthony and FASB center on two major issues. The first difference is the relative importance of the balance sheet as compared to the income statement. FASB generally takes the position that assets and liabilities should be measured directly and that measuring the change in assets and liabilities (net assets) is the best way to measure the results of operations. In contrast, the Anthony model directly measures revenues and expenses to arrive at a figure that represents operating results, and assets are measured indirectly as “the forms in which an entity’s capital exists” ([Anthony, 1983, Concept 7.02, p. 177](#)).

A second difference results from the way FASB defines temporarily and permanently restricted net assets. Based on its own definition of liabilities (SFAC No. 6), FASB concluded that restricted contributions do not give rise to liabilities. Therefore, SFAS No. 116 requires immediate recognition of all contributions as support (a type of revenue). Comparatively, according to Anthony, the only real difference between business and nonprofit organizations is their source of capital: businesses obtain capital from equity investors and creditors and nonprofit organizations obtain capital from contributors and creditors ([Anthony, 1989, p. 1](#)). Hence,

Anthony argues permanently restricted net assets should not be recognized as revenue because they constitute a contribution to capital just as issues of common stock are considered contributed capital in a business organization. To Anthony, temporarily restricted contributions give rise to an obligation to provide services or take other actions specified by the donor. Accordingly, he would record deferred revenue as a liability until the services were provided, thus matching the revenue to the expenses incurred to satisfy the obligation.

Interestingly, the Mautz Statement of Revenue and Support shows the largest increase in net assets since the presentation does not display the unrestricted versus donor-restricted net asset changes. This could be clarified through footnote disclosures; the balances designated for specific uses are clearly displayed under the Mautz examples (see notes to Exhibit 6.1 in Chapter 6 of Section II). From this information, it would be possible to compute the change in net assets related to donor-restricted net assets. The Anthony model is the only one of the four that is explicitly interested in a measure that could be used to evaluate performance during the year. The \$8,588,000 reported on Anthony's Operating Statement (Exhibit 5.3 in Chapter 5 of Section II) is much smaller than the FASB and GASB accrual-based number because change in net assets related to endowments and plant are reported on a separate statement (Exhibit 5.4 in Chapter 5 of Section II). Anthony would argue that the operating statement (Exhibit 5.3 in Chapter 5 of Section II) is the only statement of the five on [Table 7.6](#) that clearly presents operating results because it matches revenues to accomplishments (functional expenses).

7.2.4. Matters of Display

The usefulness of the various presentations is debatable. FASB and GASB have the benefit of a growing level of familiarity since users are accustomed to statements in these formats. However, GASB makes a distinction between operating and contributed capital similar to that recommended by Anthony. GASB displays the general fund (unrestricted or expendable) separately from nonexpendable (restricted) funds in at least the funds-based statements. GASB's statement of activities is organized in such a way that transfers between restricted and unrestricted funds do not have to be displayed, simplifying the statement and making it unnecessary to count temporarily restricted contributions twice (once when received and again

when reclassified to unrestricted when the restriction is released). However, the GASB reports are voluminous and therefore arguably intimidating.

The multiple balance sheets under the Anthony model can also cause confusion. Out of the four, the Mautz model has the simplest display and is intended to answer the following questions:

- (1) How much did the entity receive during the reporting period and from what sources?
- (2) What did the entity do with what it received?
- (3) How much does the entity have left?
- (4) What are the entity's plans and commitments for the future? (Mautz, 1994, p. 110)

Mautz is the only one to provide information about future anticipated operations in the unique Statement of Commitments (Exhibit 6.3 in Chapter 6 of Section II). That said, Mautz is also the only one to not include a Statement of Cash Flows. One could argue that the Cash Flow Statement is not necessary since the Mautz presentation is on a modified-cash basis. This is because where the Anthony model reflects mostly similarities between business and nonprofit organization, the Mautz model recognizes significant differences. The major difference is the way cash flows through the organization. Generating profits for owners is the main objective of operations of a for-profit business, whereas a nonprofit organization generally aims to provide service to the public. Therefore, two additional elements were included in the Mautz model: service facilities and commitments. According to Mautz, the service facilities are cash outflow items and resemble assets except that they use cash rather than generate cash as normal assets would. In his view, adding these cash-consuming items into assets would be misleading and provide no value to financial statement users. However, the service facilities are not classified as liabilities under Mautz either, since nonprofit organizations provide service without expecting anything in return. This unique characteristic makes service facilities neither assets nor liabilities under the Mautz model.

With respect to the Statement of Cash Flows, GASB's presentation is arguably better than that of FASB, mainly because FASB does not require the direct method that is mandatory for GASB institutions. Moreover, Anthony did not spend much time discussing the need for a statement of cash flows but agreed that it was necessary (concept 8.06, Anthony, 1983, p. 204). In a way, the cash flow statements are the "most alike" of any of the statements mandated by FASB, GASB, or Anthony.

7.3. EVALUATION OF THE MODELS

Nonbusiness public-good organizations are often criticized for presenting excessive detail and for their failure to aggregate financial information sufficiently to provide the reader with a clear overall picture. FASB and Mautz both opposed the reporting of detailed information about the funds while agreeing that fund accounting might be useful for internal control or management purpose. GASB attempts to meet the needs of all parties by a dual presentation that provides sufficient detail regarding funds and also gives an entity-wide perspective. Anthony imposes a two-fund structure on both business and nonbusiness entities to segregate earned operating capital from contributed capital transactions. All four approaches seem to have balanced the need for detail with the need for sufficient brevity to provide a view of the entity as a whole rather than just the details about the parts.

Although the differences between GASB and FASB are significant, the standards also share a number of similarities. The more profound differences are those between FASB/GASB and the views of Anthony and Mautz. In their proposed models, both Anthony and Mautz agree that an obligation to donors is equivalent to a liability. However, Anthony's approach is based on the premise that nonbusiness and business accounting should be similar, whereas Mautz believes that the differences should lead to different standards. On a continuum, FASB and GASB would be somewhere between them, closer to Anthony in some respects, closer to Mautz in others.

Although the Anthony, FASB, and GASB conceptual frameworks are detailed, Mautz's principles are general and this makes his position not entirely clear on some aspects of nonprofit accounting. Our comparison of the four models, described at length in Chapters 3 through 6 of Section II clearly may be useful to standard setters considering issues of international harmonization. Some choices must be made between underlying theoretical concepts. Even if the overriding concerns are decision usefulness and accountability, it is clear that reasonable people can produce and defend a number of options. Empirical testing could potentially be used to see which measurement approaches and displays are the most useful to the unique decision makers of nonbusiness entities: contributors and taxpayers.

Comparability issues also remain a concern. In particular, the differences between FASB and GASB are troublesome for financial statement users in industries like higher education and health care, since the entities are providing the same services but (sometimes) measuring and reporting results

differently. Prior to the establishment of the new FASB and GASB models, these industries followed the same accounting standards as embodied in AICPA industry audit guides. When financial statement users were asked about the importance of having the same set of standards for all of higher education, the issue was ranked as the 10th most important item out of 75 (Engstrom, 1988). In comparison, having public universities follow the same standards as the controlling governmental entity was ranked near the bottom (64th of 75 items). Subsequent to the current FASB and GASB standards, comparisons among institutions of higher education became more difficult as has been discussed at length by Engstrom and Esmond-Kiger (1997) and Fischer (1997).

One possible solution is for all entities to follow the same set of standards under a concept referred to as *sector neutrality*.³ This notion presumes that there is little need for different sets of standards, although there might be supplementary rules for the two special sets of transactions that almost never confront commercial enterprises: nonreciprocal contributions and imposed nonexchange transactions. Sector neutrality is consistent with Anthony's general approach to standard setting (1983, 1989). In addition, standards might need to address the fact that resource providers often place restrictions on funds to be used by governments and NFP entities. These restrictions require that choices be made about the timing of revenue recognition and whether restricted funds must be accounted for and disclosed separately.

7.4. CONCLUSION

In this research study, we briefly examine the development of U.S. accounting practices for nonbusiness entities beginning with theories about the origin of voluntary NFP entities (Chapter 1 in Section II). An examination of key theoretical concepts (Chapter 2 in Section II) then provides a foundation for the discussion of existing GAAP for NFP entities (FASB) and public governmental entities (GASB) as well as alternate accounting models proposed by Robert Anthony and Robert Mautz (Chapters 3 through 6 in Section II). Using a uniform set of economic transactions for a museum, we have illustrated the financial statements that would result from application of the four models. In this final chapter, we compare the examples and identify differences in measurement and display that could potentially impact the decisions that donors and other resource providers make.

Our goal is to bring together theoretical concepts and alternate approaches in a way that can facilitate discussions about the future direction of nonbusiness accounting and financial reporting. We believe the topic is timely given several current trends. First, major changes in financial statement presentation for business entities are currently under discussion along with changes to revenue recognition (FASB, 2008a, 2008b). Business people serve on the boards of NFP entities and often expect the accounting to be similar to the accounting practices in the business world. Since FASB sets standards for both for-profit and NFP entities, for-profit accounting and reporting changes trickle down and impact financial reporting for NFP entities. Thus change in the for-profit accounting model may provide an opportunity to revisit the U.S. standards for NFP financial reporting. The second important trend is the internationalization of accounting standards and the fact that no international standard setting organization has yet considered the unique accounting and financial reporting requirements for NFP entities. Accordingly, we believe that changes to the current U.S. standards and the development of comparable standards around the world make the topic of this study relevant. The debates in the early 1990s were vigorous and sometimes acrimonious. The decisions that were made were not necessarily welcomed by all constituents. We hope that the ideas we have gathered together and illustrated in this research study can provide a starting point for a similar period of deliberations on the future of nonbusiness accounting and financial reporting.

NOTES

1. As mentioned in Chapter 5 in Section II, Professor Anthony reviewed his set of financial statements and agreed with our decision.
2. GASB Statement No. 33 provides examples of donated artwork and real property. Although there is no prohibition on the recognition of contributed supplies or services, the topic has not been specifically addressed by the Board.
3. Sector neutrality has been the dominant view in New Zealand since at least 1994 and a single conceptual framework applies to for-profit businesses, NFP entities and government (Cordery & Baskerville, 2007).

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APPENDIX: SUPPORTING SCHEDULES HIGHLIGHTING DIFFERENCES IN MODELS

Table A1. Contributions, Pledges, and Grants.

Panel A: Pledges Receivable at Beginning of Year				
Beginning of year	Pledges due within a year	Pledges due after one year	Total pledges	Pledges due in support of current year operations
Artist in residence	\$ –	\$ –	\$ –	\$ –
Scholarships (purpose restriction only)	30,000	–	30,000	12,000
Accessions (purpose restrictions only)	25,000	75,000	100,000	10,000
Special exhibitions (time & purpose restrictions)	192,000	90,000	282,000	77,000
Annuities	–	–	–	–
Operations (unrestricted but for future periods)	152,000	335,000	487,000	–
Endowments for operations	500,000	1,500,000	2,000,000	
Endowments for accessions	1,500,000	6,500,000	8,000,000	
Time endowments	–	–	–	
	\$ 2,399,000	\$ 8,500,000	\$ 10,899,000	\$ 99,000
Allowance for uncollectible pledges	(240,000)	(850,000)	(1,090,000)	(10,000)
Time-value discount (FASB)		(909,000)	(909,000)	
	\$ 2,159,000	\$ 6,741,000		
Net pledges recognized in FASB statement of financial position			\$ 8,900,000	
Net pledges recognized in Mautz statement of net assets				\$ 89,000

Table A1. (Continued)

Panel A: Pledges Receivable at Beginning of Year (Continued)				
Beginning of year	Pledges due within a year	Pledges due after one year	Total pledges	Pledges due in support of current year operations
Pledges for endowments cannot be recognized under GASB 33 until received	(2,000,000)	(8,000,000)	(10,000,000)	
Pledges intended for use in future time periods have not met eligibility requirement and are not recognized under GASB 33	(152,000)	(335,000)	(487,000)	
Pledges for exhibitions in future years have not met eligibility requirement and are not recognized under GASB 33	(115,000)	(90,000)	(205,000)	
Add back related allowances	227,000	842,000	1,069,000	
Add back time-value of money discount		909,000	909,000	
	<u>\$ 119,000</u>	<u>\$ 67,000</u>		
Net pledges recognized in GASB statement of net assets			<u>\$ 186,000</u>	
Net pledges recognized in Anthony contributed capital balance sheet				<u>(9,000)</u>
Net pledges recognized in Anthony operating balance sheet				<u>\$ 80,000</u>

Panel B: Pledges Receivable at End of Year

End of year	Pledges due within a year	Pledges due after one year	Total pledges	Pledges due in support of current year operations
Artist in residence	\$ –	\$ –	\$ –	\$ –
Scholarships (purpose restriction only)	30,000	–	30,000	12,000
Accessions (purpose restrictions only)	50,000	150,000	200,000	20,000
Special exhibitions (time and purpose restrictions)	300,000	75,000	375,000	120,000

Table A1. (Continued)

Panel B: Pledges Receivable at End of Year (Continued)				
End of year	Pledges due within a year	Pledges due after one year	Total pledges	Pledges due in support of current year operations
Annuities	—	—	—	—
Operations (unrestricted but for future periods)	100,000	390,000	490,000	—
Endowments for operations	500,000	1,000,000	1,500,000	
Endowments for accessions	1,500,000	4,500,000	6,000,000	
Term endowment	—	—	—	
	\$ 2,480,000	\$ 6,115,000	\$ 8,595,000	\$ 152,000
Allowance for uncollectible pledges	(248,000)	(612,000)	(860,000)	(15,000)
Time-value discount (FASB)		(654,000)	(654,000)	
	\$ 2,232,000	\$ 4,849,000		
Net pledges recognized in FASB statement of financial position			\$ 7,081,000	
Net pledges recognized in Mautz statement of net assets				\$ 137,000
Pledges for endowments cannot be recognized under GASB 33 until received	(2,000,000)	(5,500,000)	(7,500,000)	
Pledges intended for use in future time periods have not met eligibility requirement and are not recognized under GASB 33	(100,000)	(390,000)	(490,000)	
Pledges for exhibitions in future years have not met eligibility requirement and are not recognized under GASB 33	(180,000)	(75,000)	(255,000)	
Add back related allowances	228,000	597,000	825,000	
Add back time-value of money discount		654,000	654,000	
Less contribution for operations received for which time restrictions have not been met (increases deferred revenue)	(8,000)		(8,000)	
	\$ 172,000	\$ 135,000		

Table A1. (Continued)

Panel B: Pledges Receivable at End of Year (Continued)				
End of year	Pledges due within a year	Pledges due after one year	Total pledges	Pledges due in support of current year operations
Net pledges recognized in GASB statement of net assets			\$ 307,000	
Net pledges recognized in Anthony contributed capital balance sheet				(18,000)
Net pledges recognized in Anthony operating balance sheet				\$ 119,000
Mautz statement of commitments	Pledges due within a year	Pledges due after one year	Total pledges	
Net pledges – FASB basis (from above)	\$ 2,232,000	\$ 4,849,000	\$ 7,081,000	
Less pledges recognized by Mautz	(137,000)		(137,000)	
Net pledges not recognized as revenue by Mautz	2,095,000	4,849,000	6,944,000	
Pledges for endowment gifts, reported in notes	(2,000,000)	(5,500,000)	(7,500,000)	
Add back related allowances	200,000	1,204,000	1,404,000	
Grants for future years, not recognized	630,000	290,000	920,000	
Anticipated grants and contributions reported on Mautz statement of commitments			\$ 1,768,000	
Panel C: Grants Receivable				
Grants receivable – FASB	Beginning balance	Revenue recognized	Cash collected	Ending balance
Artist in residence	\$ 200,000	\$ 260,000	\$ (302,000)	\$ 158,000
Special exhibitions	800,000	663,000	(543,000)	920,000
	\$ 1,000,000	\$ 923,000	\$ (845,000)	\$ 1,078,000

Table A1. (Continued)

Panel C: Grants Receivable (Continued)				
Grants receivable – FASB	Beginning balance	Revenue recognized	Cash collected	Ending balance
The artist in residence grant is cost reimbursement. All GASB eligibility requirements have therefore been met.				
Special exhibition grants are for exhibitions to be provided in specific time periods as follows:				
Special exhibition grants – Detail	Beginning balance	Revenue recognized	Cash collected	Ending balance
Year 2 (current year)	\$ 200,000	\$ 200,000	\$ (200,000)	\$ –
Year 3	600,000	463,000	(343,000)	630,000
Year 4				290,000
Grants receivable – FASB	\$ 800,000	\$ 663,000	\$ (543,000)	\$ 920,000
Under GASB 34, grants must meet eligibility requirements to be recognized	Year 2	Year 3	Year 4	Total
Special exhibitions – Commitments	\$ 200,000	\$ 600,000	\$ –	\$ 800,000
Deferred revenue – To be used year 2	100,000			100,000
Resources available at beginning of year 2	\$ 300,000	\$ 600,000	\$ –	\$ 900,000
New grant commitments	50,000	30,000	290,000	370,000
Cost of special exhibition provided	(350,000)			(350,000)
Cash collected on grants for future years		193,000		193,000
Resources available at end of year 2	\$ –	\$ 823,000	\$ 290,000	1,113,000
Less deferred revenue at end of year 2				(193,000)
Grant commitments for future years				\$ 920,000
Grant-related accounts – GASB	Beginning balance	Revenue recognized	Cash collected	Ending balance
Artist in residence	\$ 200,000	\$ 260,000	\$ (302,000)	\$ 158,000
Special exhibitions	–	350,000	(350,000)	–
Special exhibitions – Deferred revenue	(100,000)		(193,000)	(293,000)
Net grant accruals	\$ 100,000	\$ 610,000	\$ (845,000)	\$ (135,000)

Table A1. (Continued)

Panel C: Grants Receivable (Continued)				
Grants receivable – FASB	Beginning balance	Revenue recognized	Cash collected	Ending balance
Anthony and Mautz grants receivable is the same as GASB				
GASB-ending balance deferred revenue				
Special exhibitions	\$ 293,000			
Donor contribution received for use next year	8,000			
	<u>\$ 301,000</u>			

Panel D: Net Assets Released from Restrictions (Contributions and Pledges)			
Net assets released from restrictions – FASB	Program restrictions	Time restrictions	Total
Artist in residence	\$ 23,000	\$ 260,000	\$ 283,000
Scholarships	100,000	–	100,000
Accessions	5,598,000	–	5,598,000
Special exhibitions	200,000	350,000	550,000
Future operations	30,000	–	30,000
	<u>\$ 5,951,000</u>	<u>\$ 610,000</u>	<u>\$ 6,561,000</u>

Note that the time restrictions were related to grants

Panel E: Deferred Revenues				
Mautz and Anthony treat purpose restrictions the way GASB treats time requirements. Accordingly, gifts are not recognized as revenue until the organization has satisfied the givers' expressed wishes.				
Deferred revenue	Beginning balance	Cash receipts	Used for intended purpose	Ending balance
<i>Related to private donations</i>				
Artist-in-residence program	\$ 284,000	\$ 23,000	\$ (23,000)	\$ 284,000
Scholarships	33,000	150,000	(100,000)	83,000
Special exhibitions	480,000	204,000	(200,000)	484,000
Operations (during specified time periods)	–	38,000	(30,000)	8,000

Table A1. (Continued)

Panel E: Deferred Revenues (Continued)				
Deferred revenue	Beginning balance	Cash receipts	Used for intended purpose	Ending balance
Grants for special exhibitions (see above)	100,000	543,000	(350,000)	293,000
Subtotal for operations (Anthony)	\$ 897,000	\$ 958,000	\$ (703,000)	\$ 1,152,000
Gifts for purchase of art (accessions) and restricted endowment earnings	9,171,000	3,148,000	(5,598,000)	6,721,000
	\$ 10,068,000	\$ 4,106,000	\$ (6,301,000)	\$ 7,873,000

Panel F: Reconciliation of Beginning and Ending Balances in Pledges Receivable				
Net pledges receivable as reported by FASB	Beginning balance	Cash receipts	New pledges	Ending balance
Artist in residence	\$ -	\$ (23,000)	\$ 23,000	\$ -
Scholarships (purpose restriction only)	27,000	(150,000)	150,000	27,000
Accessions (purpose restrictions only)	82,000	(850,000)	932,000	164,000
Special exhibitions (time and purpose restrictions)	244,000	(204,000)	289,000	329,000
Annuities	-	-	-	-
Operations (unrestricted but for future periods)	402,000	(38,000)	35,000	399,000
Endowments for operations	1,640,000	(2,000,000)	1,603,000	1,243,000
Endowments for accessions	6,505,000	(6,000,000)	4,414,000	4,919,000
Term endowment	-	(500,000)	500,000	-
	\$ 8,900,000	\$ (9,765,000)	\$ 7,946,000	\$ 7,081,000
Unrestricted contributions		(10,950,000)		
Total cash collected from donors		\$ (20,715,000)		

Table A1. (Continued)

Panel F: Reconciliation of Beginning and Ending Balances in Pledges Receivable (Continued)				
Net pledges receivable as reported by Mautz and Anthony	Beginning balance	Cash receipts	New pledges	Ending balance
Artist in residence	\$ –	\$ (23,000)	\$ 23,000	\$ –
Scholarships (purpose restriction only)	11,000	(150,000)	150,000	11,000
Accessions (purpose restrictions only)	9,000	(850,000)	859,000	18,000
Special exhibitions (time and purpose restrictions)	69,000	(204,000)	243,000	108,000
Annuities	–	–	–	–
Operations (unrestricted but for future periods)	–	(38,000)	38,000	–
Endowments for operations	–	(2,000,000)	2,000,000	–
Endowments for accessions	–	(6,000,000)	6,000,000	–
Term endowment	–	(500,000)	500,000	–
	<u>\$ 89,000</u>	<u>\$ (9,765,000)</u>	<u>\$ 9,813,000</u>	<u>\$ 137,000</u>
Unrestricted contributions		(10,950,000)		
Total cash collected from donors		<u>\$ (20,715,000)</u>		
Panel G: Contributions and Grants Recognized Showing Financial Statement Display				
	FASB	GASB	Mautz	Anthony
Contributions received in cash	\$ 20,715,000	\$ 20,715,000	\$ 20,715,000	\$ 20,715,000
Noncash contributions recognized	2,140,000	2,000,000	–	2,440,000
Capital contributions recognized (depreciation)				1,351,000
Change in pledges receivable	(1,819,000)	121,000	48,000	48,000
Change in deferred revenue	–	(8,000)	2,388,000	2,388,000
Contributions recognized	<u>\$ 21,036,000</u>	<u>\$ 22,828,000</u>	<u>\$ 23,151,000</u>	<u>\$ 26,942,000</u>
Grants received in cash	\$ 845,000	\$ 845,000	\$ 845,000	\$ 845,000
Change in grants receivable	78,000	(42,000)	(42,000)	(42,000)
Change in deferred revenue	–	(193,000)	(193,000)	(193,000)
Grants recognized in revenue	<u>\$ 923,000</u>	<u>\$ 610,000</u>	<u>\$ 610,000</u>	<u>\$ 610,000</u>
Total grants and contributions recognized	<u>\$ 21,959,000</u>	<u>\$ 23,438,000</u>	<u>\$ 23,761,000</u>	<u>\$ 27,552,000</u>

Table A1. (Continued)

Panel G: Contributions and Grants Recognized Showing Financial Statement Display (Continued)		
Grants and contributions as displayed		
<i>On statement of activities</i>		
Contributions	\$ 21,036,000	
Grants	923,000	
Operating grants and contributions		\$ 1,988,000
Capital grants and contributions		10,500,000
Grants and contributions not restricted to specific programs		10,950,000
	<u>\$ 21,959,000</u>	<u>\$ 23,438,000</u>
<i>On statement of support and expenditures</i>		
Contributions in support of operations		\$ 14,651,000
Government grants		610,000
Gifts intended for long-term investment (endowments)		8,500,000
		<u>\$ 23,761,000</u>
<i>On operating statement</i>		
Contributions in support of operations		\$ 11,342,000
Government grants		\$ 610,000
Capital contributions recognized		\$ 1,351,000
Contributed services and supplies		\$ 440,000
<i>On statement of changes in contributed capital</i>		
Contributions recognized – Plant		\$ 3,309,000
Contributions in the form of long-lived plant assets		2,000,000
Contributions recognized – Endowments		8,500,000
		<u>\$ 27,552,000</u>

Table A2. Other Operating Revenues.

Other Operating Revenue	Revenue	Cash Flow
Admission to the museum is free for individuals with a suggested contribution of \$5. Fees are charged for tours and special lectures	\$ 485,000	\$ 485,000
Tuition at the art school is based on a sliding scale with some students attending free on scholarships funded by donor-designated gifts	750,000	750,000
The museum has a gift shop that supports its educational mission and is not subject to an unrelated business income tax. However, for GASB and Mautz the gift shop is presented separately as a for-profit oriented activity		
	GASB expenses	GASB cash flows
		Mautz
Gift shop receipts	5,100,000.0	5,100,000.0
Cost of goods sold or cash disbursed for inventory	(2,040,000)	(2,040,000)
Salaries expense or expenditures	(502,000)	(502,000)
Other operating expense or expenditures	(491,000)	(491,000)
<i>Net cash provided by operating activities</i>	\$ 2,318,000	
Depreciation expense	(170,000)	
Realized loss on sale of equipment	6,000	
Net profit of proprietary fund	\$ 1,903,000	
Net income from profit-oriented activities-gift shop		\$ 2,067,000

Note: If this were a material business-type activity, Mautz would probably support full accrual accounting including depreciation. In that case, the Mautz numbers would be the same as might be shown under GASB if the gift shop were treated as a proprietary fun.

Table A3. Operating Expenses by Object and Function.

	Cash Disbursement	Accruals	Noncash Contributions	Expenses
<i>Operating expenses</i>				
Purchases of inventory items	\$ 1,796,000	\$ 244,000	\$ –	\$ 2,040,000
Salaries and benefits	11,000,000	145,000		11,145,000
Grants and scholarships	520,000	–		520,000
Supplies	1,400,000	(86,000)	50,000	1,364,000
Transportation of art and travel	910,000	–		910,000
Services and professional fees	1,761,000	93,000	90,000	1,944,000
Occupancy	7,600,000	(76,000)		7,524,000
Depreciation	–	1,800,000		1,800,000
Interest	462,000	(5,000)		457,000
	<u>\$ 25,449,000</u>	<u>\$ 2,115,000</u>	<u>\$ 140,000</u>	<u>\$ 27,704,000</u>
Less cost of goods sold (netted against revenue)				(2,040,000)
<i>Total expense from FASB statement of activities</i>				\$ 25,664,000
Add donated services of docents				300,000
<i>Total expense form Anthony's operating statement</i>				\$ 25,964,000
Subtract donated services and supplies				(440,000)
Add cost of sales				2,040,000
<i>Total expense from GASB statement of activities</i>				27,564,000
Less fundraising and development (reported elsewhere)				(530,000)
Less costs of gala ball (reported elsewhere)				(200,000)
Less interest expense (reported elsewhere)				(457,000)
Less operating costs of gift shop				(993,000)
Less cost of sales (netted against revenue)				(2,040,000)
Less depreciation expense (not recorded)				(1,800,000)
<i>Cost of operations from Mautz's statement of support and expenditures</i>				<u>\$ 21,544,000</u>

Table A3. (Continued)

Functional Expenses	Cash Disbursement	Accruals Including Depreciation	Noncash Contributions	Expenses
Preservation	\$ 6,603,000	\$ 243,000	\$ –	\$ 6,846,000
Exhibitions	12,734,000	1,474,000	–	14,208,000
Art school	1,830,000	80,000	50,000	1,960,000
Management and general	1,757,000	46,000	90,000	1,893,000
Fund raising and development	729,000	28,000	–	757,000
Purchase of inventory	1,796,000	244,000		2,040,000
<i>Total operating cash outflows</i>	<u>\$ 25,449,000</u>	<u>\$ 2,115,000</u>	<u>\$ 140,000</u>	<u>\$ 27,704,000</u>
Less cost of goods sold				(2,040,000)
<i>Total operating expenses – FASB</i>				<u>\$ 25,664,000</u>
Functional Expense	FASB	Anthony	GASB	Mautz
Preservation	\$ 6,846,000	\$ 6,846,000	\$ 6,846,000	\$ 6,630,000
Exhibitions	14,208,000	14,508,000	13,045,000	11,775,000
Art school	1,960,000	1,960,000	1,910,000	1,838,000
Management and general	1,893,000	1,894,000	1,803,000	1,301,000
Fund raising and development	757,000	757,000	757,000	530,000
<i>Total expenses – FASB statement of activities</i>	<u>\$ 25,664,000</u>			<u>\$ 22,074,000</u>
Contributed services – Docents	300,000			
<i>Total expenses – Anthony statement of operations</i>	<u>\$ 25,964,000</u>	<u>\$ 25,965,000</u>		
Less gift shop operating expenses	(1,163,000)			
Less contributed services and supplies	(440,000)			
<i>Total governmental activities expense – GASB statement of activities</i>	<u>\$ 24,361,000</u>		<u>\$ 24,361,000</u>	
Capital outlays for collections (accessions)			10,128,000	
Capital outlays for equipment			1,489,000	
Depreciation expense (not recognized)			(1,630,000)	
Payment of bond principal			146,000	
Change in accrued interest expense			5,000	
Payment on split interest agreements (annuities)			200,000	
<i>Expenditures of governmental funds from GASB statement of revenues, expenditures and changes in fund balances</i>			<u>\$ 34,699,000</u>	

Table A4. Collection of Art.

	Beginning Balance	Accessions	Deaccessions	Ending Balance
Donated (at fair value at date of gift)	\$ 366,990,000	\$ 2,000,000		\$ 368,990,000
Purchased (at historical cost)	620,460,000	8,128,000	(307,000)	628,281,000
	<u>\$ 987,450,000</u>	<u>\$ 10,128,000</u>	<u>\$ (307,000)</u>	<u>\$ 997,271,000</u>
Proceeds from deaccessions			361,000	
Gain on deaccessions (permanently restricted)			<u>\$ 54,000</u>	

Collections are optionally recognized under the rules of both FASB and GASB. To facilitate comparison, both sets of financial statements capitalize collections. In the FASB and GASB financial statements, we have presented both unrestricted and permanently restricted (nonexpendable) net assets associated with collections.

	Beginning Balance	Accessions	Deaccessions	Ending Balance
Unrestricted collection items	\$ 193,450,000	\$ 6,798,000		\$ 200,248,000
Permanently restricted or nonexpendable collection items	794,000,000	3,330,000	(307,000)	797,023,000
	<u>\$ 987,450,000</u>	<u>\$ 10,128,000</u>	<u>\$ (307,000)</u>	<u>\$ 997,271,000</u>
Accessions		Donated	Purchased	
Unrestricted collection items	\$ 1,200,000	\$ 5,598,000		
Permanently restricted collection items	800,000	2,530,000		
	<u>\$ 2,000,000</u>	<u>\$ 8,128,000</u>		

It is unlikely that collections would be reported in Mautz's Statement of Service Facilities. At most, the purchased artwork would probably be reported as we have shown.

Like Mautz, Anthony would probably report at most purchased collection items in the Contributed Capital Balance Sheet. We have elected to capitalize NONE of the collections in the Anthony financial statements.

Table A5. Plant, Property, and Equipment.

	Beginning Balance	Additions	Retirements	Ending Balance
<i>As reported on FASB statement of financial position</i>				
Land	\$ 10,685,000	\$ –	\$ –	\$ 10,685,000
Building	34,544,000	–	–	34,544,000
Equipment	7,017,000	1,861,000	(50,000)	8,828,000
Totals at historical cost	\$ 52,246,000	\$ 1,861,000	\$ (50,000)	\$ 54,057,000
Less accumulated depreciation for				
Building	(11,745,000)	(1,080,000)	–	(12,825,000)
Equipment	(3,275,000)	(720,000)	40,000	(3,955,000)
Total accumulated depreciation	\$ (15,020,000)	\$ (1,800,000)	\$ 40,000	\$ (16,780,000)
<i>Net plant, property, and equipment</i>	\$ 37,226,000	\$ 61,000	\$ (10,000)	\$ 37,277,000
Proceeds from disposition of equipment			4,000	
Realized loss on sale of equipment			\$ (6,000)	

Table A6. Investments and Related Revenues.

The museum uses a pooled investment fund to manage endowments and other resources. Valuation of investments varies depending on the accounting model used.

Assumptions	Debt Securities	Equity Securities	Average Yield	Average Gain
Portfolio allocation and other assumptions	60%	40%	5%	8.5%
<i>Pooled investments – FASB measurement basis</i>	Cost	Unrealized gain/(loss)	Cash flows	Market
Beginning balance	\$ 226,005,000	\$ 60,078,000	\$ –	\$ 286,083,000
Cash from sale of investments	(38,270,000)	(11,609,000)	49,879,000	–
Cash to buy investments	58,824,000	–	(58,824,000)	–
Unrealized gains	–	24,583,000	–	24,583,000
Cash from interest and dividends	–	–	14,471,000	14,471,000
Distribute earnings	–	–	(14,471,000)	(14,471,000)
Withdrawals and distribution to programs	–	–	(13,768,000)	(13,768,000)
New investments into pool	–	–	22,713,000	22,713,000
Ending balance	\$ 246,559,000	\$ 73,052,000	\$ –	\$ 319,611,000

- FASB and GASB use a similar measurement basis. However, GASB permits governments to use amortized cost basis for most debt securities.
- Mautz would probably present investments at historical cost with disclosure of market value since unrealized gains are not financial resources immediately available. This, however, is not key issue in his model. Fair value accounting would probably be acceptable to Mautz.
- Anthony's writings propose carrying debt securities at market value and equity securities at cost.

Based on these distinctions, we account for pooled investments as indicated in the following table:

	FASB	GASB	Mautz	Anthony
Beginning investments at cost	\$ 226,005,000	\$ 226,005,000	\$ 226,005,000	\$ 226,005,000
Unrealized gains on beginning investments	60,078,000	24,031,000		36,046,000
Investments carrying value – Beginning	\$ 286,083,000	\$ 250,036,000	\$ 226,005,000	\$ 262,051,000

Table A6. (Continued)

	FASB	GASB	Mautz	Anthony
Ending investments at cost	\$ 246,559,000	\$ 246,559,000	\$ 246,559,000	\$ 246,559,000
Unrealized gains on ending investments	73,052,000	29,235,000		43,819,000
Investments at carrying value – Ending	\$ 319,611,000	\$ 275,794,000	\$ 246,559,000	\$ 290,378,000
Interest and dividends received	\$ 14,471,000	\$ 14,471,000	\$ 14,471,000	\$ 14,471,000
Realized gains on sale of investments	11,609,000	11,609,000	11,609,000	11,609,000
Less gains reported in previous years	(4,514,000)	(1,806,000)		(2,708,000)
Unrealized holding gains on investments carried at market value	17,489,000	7,010,000		10,481,000
Total investment-related revenues recognized	\$ 39,055,000	\$ 31,284,000	\$ 26,080,000	\$ 33,853,000
Presentation in Financial Statements	FASB	GASB	Mautz	Anthony
<i>Statement of activities</i>				
Investment income	\$ 14,471,000			
Net realized and unrealized gains on long-term investments	24,584,000			
	\$ 39,055,000			
<i>Statement of revenue, expenditures and change in fund balance</i>				
Interest and dividends		\$ 14,471,000		
Gain/(loss) on investments		16,813,000		
		\$ 31,284,000		
<i>Statement of support and expenditures</i>				
Interest and dividends on investments			\$ 14,471,000	
Realized gains on sale of investments			11,609,000	
			\$ 26,080,000	

Table A6. (Continued)

Presentation in Financial Statements	FASB	GASB	Mautz	Anthony
<i>Operating statement</i>				
Endowment earnings restricted for operations				\$ 1,881,000
Other investment earnings				5,825,000
Realized and unrealized gains on investments				7,115,000
				<u>\$ 14,821,000</u>
<i>Statement of changes in contributed capital</i>				
Plant				
Realized and unrealized gains on investments				\$ 692,000
Endowment earnings restricted for accessions				5,761,000
Endowment				
Realized and unrealized gains on investments				11,575,000
Interest and dividends restricted for re-investment				1,004,000
				<u>\$ 19,032,000</u>
				<u><u>\$ 33,853,000</u></u>

Table A7. Long-Term Debt and Other Liabilities.

	Beginning Balance	Reductions	Increases	Ending Balance
The mortgage originated March 1, 1996 with an original amount of \$5,175,000, a 20-year term and interest at 10%. The annual payment is \$607,854. All amounts were rounded to the nearest thousand in recording transactions ^a	\$ 4,623,000	\$ 146,000	\$ –	\$ 4,477,000
Life income and gift annuities (split interest agreements) require payment to donors during their life time. Upon death, the remaining assets can be used by the museum for various restricted and unrestricted purposes. We assumed that no adjustments due	3,000,000	200,000	–	2,800,000
Total long-term liabilities	\$ 7,623,000	\$ 346,000	\$ –	\$ 7,277,000
Current liabilities				
Accounts payable (related to gift shop inventory)	1,100,000	1,796,000	1,890,000	1,194,000
Accrued interest payable (mortgage)	154,000	462,000	457,000	149,000
Other accrued liabilities (primarily related to employee fringe benefits)	353,000	23,191,000	23,267,000	429,000
Total liabilities reported on FASB statement of financial position	\$ 9,230,000	\$ 25,795,000	\$ 25,614,000	\$ 9,049,000

^aThe mortgage was related to construction of a warehouse facility that was built with operating funds rather than contributions. Accordingly, the loan appears on Anthony's operating balance sheet rather than the contributed capital balance sheet.

Long-Term Debt Due within One Year	Beginning of Year	End of Year
Mortgage	\$ 146,000	\$ 160,000
Annuities	200,000	210,000
	\$ 346,000	\$ 370,000

Table A7. (Continued)

In addition to the above liabilities, GASB, Mautz and Anthony report deferred revenue	GASB statement of net assets	GASB balance sheet	Mautz	Anthony
Ending liabilities per FASB	\$ 9,049,000	\$ 9,049,000	\$ 9,049,000	\$ 9,049,000
Less long-term debt and accrued interest payable		(7,426,000)		
Less debt related to proprietary fund		(1,215,000)		
Add amount due to other funds		—		
Deferred revenues – Operating	301,000	301,000	7,873,000	1,152,000
Deferred revenues – Plant				6,721,000
Total liabilities reported	\$ 9,350,000	\$ 709,000	\$ 16,922,000	\$ 16,922,000
Beginning liabilities per FASB	\$ 9,230,000	\$ 9,230,000	\$ 9,230,000	\$ 9,230,000
Less long-term debt and accrued interest payable		(7,777,000)		
Less debt related to proprietary fund		(1,114,000)		
Deferred revenues – Operating	100,000	100,000	10,068,000	897,000
Deferred revenues – plant				9,171,000
Total liabilities reported	\$ 9,330,000	\$ 439,000	\$ 19,298,000	\$ 19,298,000

Table A8. Endowments and Quasi-Endowments.

Differences in valuation hinge primarily on the measurement basis used for investments. The recognition of promises to give earlier under FASB also has a major impact in comparison to the other models. The following information relates to several types of endowments and quasi-endowments:

Endowments with Donor Restrictions on Use	FASB	GASB	Mautz	Anthony
Beginning balance	\$ 117,300,000	\$ 96,835,000	\$ 87,528,000	\$ 101,488,000
Ending balance	\$ 131,475,000	\$ 109,525,000	\$ 98,159,000	\$ 115,196,000

The museum has a large number of endowment gifts with various donor restrictions as to the nature of the art the earnings can be used to acquire. Some of the earnings can be used for any type of accessions and these earnings are classified as temporarily restricted under FASB rather than permanently restricted. In other cases, the art acquired cannot be sold (deaccessed) or if sold, the proceeds are restricted for acquisition of replacement items. These net assets, under FASB, are considered permanently restricted.

Endowments to Support Operations	FASB	GASB	Mautz	Anthony
Beginning balance	37,900,000	31,691,000	28,645,000	33,214,000
Ending balance	42,699,000	35,882,000	32,161,000	37,736,000

The museum had conducted capital campaigns over time to establish an endowment whose earnings can support general operations, or in some cases, particular types of programs. The earnings of these endowments are considered unrestricted or, in some cases, temporarily restricted net assets.

Term Endowment	FASB	GASB	Mautz	Anthony
Beginning balance	\$ –	\$ –	\$ –	\$ –
Ending balance	\$ 540,000	\$ 529,000	\$ 522,000	\$ 533,000

Term endowment was established this year. According to the agreement with the donor, the assets will be used for long-term investment until principal reaches \$1,000,000 at which time it will become an endowment to support programs at the art school.

Table A8. (Continued)

Temporarily Restricted Net Assets	FASB	GASB	Mautz	Anthony
Beginning balance	\$ 2,200,000	\$ 1,545,000	\$ 1,108,000	\$ 1,763,000
Ending balance	\$ 2,917,000	\$ 2,122,000	\$ 1,589,000	\$ 2,386,000

The museum has received several split-interest gifts under which the donor receives income during his or her lifetime. Upon death, any remaining assets can be used for unrestricted, or in some cases, particular activities of the museum. Under FASB, these annuity arrangements have been classified as temporarily restricted net assets.

Board-Designated Term Endowment	FASB	GASB	Mautz	Anthony
Beginning balance	\$ 14,000,000	\$ 12,236,000	\$ 11,060,000	\$ 12,824,000
Ending balance	\$ 15,952,000	\$ 13,802,000	\$ 12,367,000	\$ 14,517,000

The board of directors has set aside unrestricted net assets as a term endowment to support renovation of facilities. The assets of this endowment will be used in the planned major renovation of the modern art building beginning in Year 6. Under FASB and GASB rules, this is considered a board-designated fund or reserve and the net assets are considered unrestricted or expendable, respectively.

In general, only the interest and dividends earned by the endowment-type funds is distributed. Unrealized gains generally increase the corpus.