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The Impact of Accounting Regulation on Nonprofit Revenue Recognition

By

Charles A. Barragato

A dissertation submitted to the Graduate Faculty in Business in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

2002

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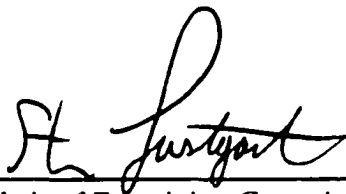
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Abstract

THE IMPACT OF ACCOUNTING REGULATION ON NONPROFIT REVENUE RECOGNITION

by

Charles A. Barragato

Adviser: Professor Steven Lustgarten

This dissertation investigates the impact of accounting regulation on nonprofit revenue recognition. It examines the requirement that nonprofit organizations recognize unconditional promises to give as assets and revenues in the year promises are received in accordance with SFAS No. 116 - Accounting For Contributions Received and Contributions Made (FASB, 1993). The study adopts the view that information about promises to give is relevant if it is useful in assessing probable future cash inflows. This view is based principally on the role played by accounting accruals in predicting future cash flows, as well as a comprehensive evaluation of the rationale used by the FASB in mandating recognition treatment. A model by Dechow, Kothari and Watts (1998) is modified and developed to provide fundamental intuition about the relation between unconditional promises to give and future cash inflows. This modified model is then used to guide the study's empirical tests, which examine the assertion that recognizing unconditional promises to give as assets and as revenues in the period received improves predictions of future cash inflows. The results are consistent with this prediction.

This study makes several contributions to the literature. It develops a model that describes the relations between revenues, accruals and cash inflows, which provides further insight into the nonprofit revenue recognition process and implies that current revenues predict future cash inflows better than current cash inflows do. It offers evidence in support of the FASB's contention that unconditional promises to give are relevant, which in turn provides constructive feedback to standard setters in establishing guidelines that improve the usefulness of financial reporting for nonprofit organizations. The study affirms that many of the key conventions and elements embodied in the FASB Concepts Statements apply to nonprofits as well, which is consistent with the FASB's endorsement of an integrated conceptual framework that has relevance to all types of reporting entities.

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1. Introduction

Individuals and corporations give generously to nonprofit organizations. As of 1998, more than 1.2 million nonprofit organizations contributed 6.1% toward total U.S. national income and employed 7.1% of the paid workforce (Independent Sector, 2001). Nearly 819,000 charities were registered with the Internal Revenue Service in 2000 (The Chronicle of Philanthropy, 2001a). Around the world, one in four persons donates time to nonprofit activities, with the nonprofit sectors of many national economies growing at more than three times the rate of their overall economies from 1990 to 1995.¹ Despite this sector's economic significance and explosive growth, its accounting practices have not been studied extensively.

This paucity of research was noted in a 1974 advisory committee report submitted to the Commission on Private Philanthropy and Public Needs (the Filer Commission). This well-known and highly controversial document also criticized

¹ According to the John Hopkins Center for Civil Society Studies (1999), 28% of the populations of 22 countries, on average, donate their time to nonprofit organizations. Additionally, the nonprofit sectors of the national economies of the 22 countries (13 from Western, Central and Eastern Europe, 5 from Latin America, Australia, Israel, Japan and the United States) profiled in the study grew at more than three times the rate of their overall economies from 1990 to 1995.

nonprofit accounting and reporting practices, stating that many were applied inconsistently, were incomprehensible, and could likely result in abuses of financial disclosure (Gross, 1975; Weinstein, 1978).² In 1978, in response to these and other nonprofit reporting concerns, the Financial Accounting Standards Board (hereinafter referred to as the "FASB" or the "Board") accepted oversight responsibility for nonprofit accounting and reporting issues. With this responsibility came the formidable task of reducing numerous inconsistencies in nonprofit accounting and reporting practices.³ Of paramount concern was the diversity in methods used to account for charitable contributions, particularly those related to unconditional promises to give.

In 1993, after much deliberation and despite vociferous objections by many nonprofit constituents, the FASB issued SFAS No. 116 – Accounting for Contributions Received and Contributions Made (FASB, 1993a). Though SFAS No. 116 (the "Standard") is applicable to all entities that make or receive contributions, it predominantly affects nonprofit organizations because contributions generally represent a considerable source of revenues for these organizations.

This dissertation investigates the Standard's controversial requirement that nonprofit organizations recognize unconditional promises to give as assets and as

² Until the late 1960's, most nonprofit accounting principles and related guidance were developed by industry associations (Anthony, 1989).

³ A FASB staff study identifies 35 differences in published nonprofit Audit Guides and Statements of Position (Anthony, 1989).

revenues in the period promises are received. In assessing this requirement, the study adopts the view that information about promises to give is relevant if it is useful in assessing probable future cash inflows. This view is based principally on the role played by accounting accruals in predicting future cash flows,⁴ coupled with a comprehensive evaluation of the rationale used by the FASB in mandating recognition treatment. A model by Dechow, Kothari and Watts (1998) is also modified and developed, which provides further insight into the relation between unconditional promises to give and future cash inflows. This modified model is then used to guide the dissertation's empirical tests, which document that recognizing unconditional promises to give as assets and as revenues in the period received improves predictions of future cash inflows.⁵

This study contributes to the literature in several ways. First, it develops a model that describes the relations between revenues, accruals and cash inflows, which implies that current revenues better predicts future cash inflows relative to current cash inflows. Second, it provides empirical evidence which documents the relevance of revenue accruals. More specifically, it demonstrates that by recognizing unconditional promises to give as assets and revenues in the period received, donors, creditors, and other users gain useful information about probable

⁴ See Dechow (1994); Dechow, Kothari and Watts (1998) and Barth, Cram and Nelson (2001), among others.

⁵ To date, there are no other empirical studies of this issue. The FASB, as part of its deliberations, conducted a limited field test using 20 organizations and 39 financial statement users; however, the detailed results of this test were kept confidential (SFAS No. 116, par. 42).

future cash inflows – a fundamental element of the accrual process and one of several important factors used in evaluating an organization's ability to sustain future operations. Third, it helps us to better understand the nonprofit revenue recognition process. Fourth, it provides information that is helpful to standard setters in establishing guidelines that improve the usefulness of financial reporting for nonprofits. By presenting evidence that is consistent with "an integrated conceptual framework that has relevance to all entities" (SFAC No. 4, FASB, 1980c, par. 1), it affirms that many of the key conventions and elements of financial reporting described in the FASB Concepts Statements encompass nonprofits as well.

The next Chapter provides background information on the reporting environment. Chapter 3 provides some historical perspective. Chapter 4 describes prior research applicable to nonprofits. Chapter 5 develops the research question. Chapter 6 describes the research design. Chapter 7 presents details on sample selection and variable measurement. Chapter 8 discusses the empirical results. Chapter 9 concludes.

2. Background and Environment

Revenue recognition practices have been debated since at least the mid-1950's. The core of the debate is grounded in the following question - when is a revenue considered revenue? From a theoretical perspective, the answer is relatively clear cut - "revenues should be identified with the period during which the major economic activities necessary to the creation and disposition of goods and services has been accomplished" (Sprouse and Moonitz, 1962, p.177). From a practical perspective, however, the inability to objectively measure the results of these economic activities renders the task much more difficult. Quite often the major economic events (and one's ability to objectively measure them) occur at different points in time and in different reporting periods. Thus, absent a verifiable means of measurement, revenues are typically not recognized.

In an attempt to codify a fragmented set of recognition rules and conventions, SFAC No. 5 - Recognition and Measurement in Financial Statements of Business Enterprises (FASB, 1984) sets forth specific criteria "to provide direction for resolving issues that involve accounting recognition" (SFAC No. 5,

par. 59). However, "it (*SFAC No. 5*) is of little help to the general problem of recognition ... it does little more than reiterate, in an ad hoc manner, concepts from prior SFAC's, that is, element definition, measurability, relevance and reliability" (Wolk, Tearney and Dodd, 2001, p. 393). Thus, methods for recognizing revenues have, for the most part, evolved from practice and are typically categorized using four alternative recognition points:

1. Point of Sale
2. During Production
3. End of Production
4. Receipt of Cash

Of these, point of sale is most widely applied in practice because (1) uncertainties surrounding the earnings process are minimal or nonexistent, (2) exchange values are quantifiable, and (3) most traditional transactions possess similar commercial characteristics.⁶ However, in response to the development of more complex, nontraditional business transactions, exceptions (such as those enumerated in items 2 through 4 above) have emerged. These exceptions attempt to reconcile the tensions among relevance, difficulties in reliable measurement, and uncertainties in realization. In the extreme, when measurement difficulties and uncertainties are highly significant, recognizing revenues in the period of collection may be the only viable approach.

⁶ Point of sale was one of six rules adopted by the membership of the AICPA in 1934 (ARB No. 43, AICPA, 1953, Chapter 1, par. 1).

2.1 *Issues Specific to Unconditional Promises to Give*

As chronicled in section 2.2, prior to SFAS No. 116, there were numerous inconsistencies in the methods used by nonprofits to account for unconditional promises to give. Some did not recognize or disclose unconditional promises to give when received, citing uncertainties in realization and measurement difficulties as their justification for recording them when collected. Others justified a collections approach based on the doctrine of conservatism, arguing that "if significant doubt exists about whether to recognize an item, financial reporting should err on the side of understating assets" (SFAS No. 116, par. 74). However, willfully understating assets under the guise of conservatism introduces bias into the financial reporting process, which conflicts with the qualitative characteristics of neutrality, representational faithfulness and comparability (SFAC No. 2, FASB, 1980a).

During its deliberations of the Standard, the FASB made it clear that "the doctrine of conservatism cannot be used to justify deferring recognition of revenues or gains beyond the time that adequate evidence of their existence becomes available" (SFAS No. 116, par. 74). Thus, the Board was faced with the difficult task of balancing relevance, uncertainty, measurability and conservatism in developing definitive guidance for recognizing unconditional promises to give.

2.2 *Developments Which Lead to the Issuance of SFAS No. 116*

Concerns about the appropriateness of revenue recognition policies have plagued the nonprofit sector throughout the latter part of the twentieth century. These concerns were accentuated during the 1970's when accounting and reporting practices of nonprofits were criticized as being out-of-date and potentially misleading. In response to these criticisms, a subcommittee of the American Institute of Certified Public Accountants (AICPA) was created to assess the issues and formulate guidelines. As a first step in addressing nonprofit accounting and reporting practices, two Audit Guides and a Statement of Position (SOP) were promulgated.⁷ However, due to the diversity that characterizes the nonprofit sector, the Audit Guides and SOP were also criticized because of inconsistencies among them. In 1978, the FASB accepted responsibility for promulgating accounting and reporting rules for nonbusiness entities. Its first ministerial act was the issuance of SFAS No. 32 - Specialized Accounting and Reporting Principles and Practices in AICPA Statements of Position and Guides on Accounting and Auditing Matters, (FASB, 1979). This standard recognized existing Audit Guides and other AICPA SOP's, including those related to nonprofits, as preferable and authoritative pending the issuance of new standards. Unfortunately, this act did nothing to resolve the myriad of financial accounting and reporting inconsistencies that remained. These

⁷ Audits of Colleges and Universities, AICPA, 1973; Audits of Voluntary Health and Welfare Organizations, AICPA, 1974; SOP 78-10 - Accounting Principles and Reporting Practices for Certain Nonprofit Organizations, AICPA, 1978.

inconsistencies persisted into the early 1990's. Of particular concern was the diversity in methods used in the accounting and reporting of contributions received.

In response to this problem, the FASB issued an Exposure Draft entitled Accounting for Contributions Received and Contributions Made and Capitalization of Works of Art, Historical Treasures, and Similar Assets in October 1990. Included in this proposal was the requirement that nonprofits recognize unconditional promises to give as assets and revenues in the period that promises are received. The Board justified this proposed recommendation, in part, by stating that (1) consistent standards for recognizing contributions were needed, (2) unconditional promises to give can generally be measured with sufficient reliability, and (3) information about promises to give is relevant to donors, creditors and other users.

Given the fact that most nonprofits did not recognize or disclose unconditional promises to give,⁸ members of the nonprofit community soon countered by arguing that the change would (1) provide information of dubious worth whose value would not exceed the costs to gather and provide the information, (2) make entities appear to have excess spendable funds,⁹ which may

⁸ According to a 1985 survey of college and university annual reports, of the 344 private entities reviewed, 10% recognized pledges receivable (the equivalent of unconditional promises to give) as assets, while 37% disclosed information about their pledges, and more than 50% did neither (Peat, Marwick, Mitchell and Co., 1985, p. 39). A 1987 survey conducted by the FASB staff found similar results (Adams, Bossio and Rohan, 1987, p. 52).

⁹ The term "excess spendable funds" is not specifically defined in the pronouncement. However, one can infer a definition based on Chairman Beresford's dissenting comments. More specifically, he expresses concern about potential misunderstanding of financial information related to recognizing unconditional promises to give, particularly for those organizations that rely heavily on annual pledge drives. These organizations "will report large increases in net assets if promises are

lead donors to erroneously conclude that an entity has a reduced need for contributions, and (3) discourage long-term giving trends by requiring the recognition of multiyear unconditional promises to give.

After several public hearings and the receipt of more than 1,000 written comments, the Board issued a revised Exposure Draft - Accounting for Contributions Received and Contributions Made in November 1992. The revised draft incorporated a number of suggestions initiated during the comment period, but failed to modify the proposed treatment of unconditional promises to give. Despite the mounting controversy concerning the accounting treatment for unconditional promises to give, the Board, during its re-deliberations, concluded that financial reporting would be significantly improved by recognizing unconditional promises to give as assets and revenues in the period received. In June 1993, SFAS No. 116 was adopted by the affirmative votes of six of the seven members of the Board, with Chairman Beresford dissenting. It became effective for financial statements issued for fiscal years beginning after December 15, 1994, except for not-for-profit organizations with less than \$5 million in total assets and less than \$1 million in annual expenses. For these smaller organizations, the effective date was fiscal years beginning after December 15, 1995; however, earlier adoption was encouraged.

recorded. He (*Chairman Beresford*) is concerned that the amounts will be regarded as surplus resources or otherwise be misinterpreted by financial statement users" (SFAS No. 116, par. 30).

2.3 *Current Nonprofit Environment*

In recent years, there has been a renewed interest in the nonprofit sector. From an accounting and regulation standpoint, in June 1999, the FASB issued SFAS No. 136 – Transfers of Assets to a Not-For-Profit Organization or Charitable Trust That Raises or Holds Contributions for Others. In November 1999, it initiated a separate project to investigate and develop guidelines on accounting and reporting for nonprofit entity combinations.

From a legislative standpoint, in March 2001, H.R. 7, *Community Solutions Act of 2001* was introduced in the House of Representatives and later referred to the Senate for further deliberations. This bill recommends incentives for charitable contributions made by individuals and businesses, and includes an above-the-line charitable contribution deduction for nonitemizers. In June 2001, H.R. 1836, *Economic Growth and Tax Relief Reconciliation Act of 2001* was signed into law. This legislation incorporated the hotly debated phase-out of the estate and generation-skipping transfer tax system over a ten-year period.¹⁰ These legislative changes and proposals will likely have a significant impact on the nonprofit sector.

¹⁰ The repeal of the estate and generation-skipping transfer tax system is effective for decedents dying after December 31, 2009, subject to a one-year sunset provision. After repeal of the estate tax, a carryover basis system will become operative. This legislation did not, however, repeal the gift tax. Presumably, the gift tax was left intact to discourage individuals from income-splitting, i.e., making transfers to related individuals in lower income tax brackets.

From consumers' standpoint, access to nonprofit financial, tax and ratings information is now easily accessible on the World Wide Web through organizations such as the Urban Institute and Philanthropic Research, Inc. (Guidestar). This information has become increasingly important in the wake of the September 11, 2001 World Trade Center disaster. This tragic event has spurred one of the most ambitious philanthropic campaigns in American history and has heightened the scrutiny of nonprofit firms by donors and other watchdog agencies (The Chronicle of Philanthropy, 2001b).

These recent changes and developments afford researchers an exciting opportunity to embark on a broad array of research issues related to the nonprofit sector.

3. Historical Background of Nonprofits

3.1 *Institutional Background*

The term “nonprofit institution” refers to nongovernment organizations that are legally subject to a “nondistribution constraint”, which implies that residual earnings cannot be distributed to individuals who control the organization, such as officers, members or directors (Hansmann, 1987).

The U. S. concept of the non-religious, non-sectarian nonprofit organization can be traced back to sixteenth century England. It was during this period, when government support of civilian needs was limited, that private philanthropies developed to provide funding for a variety of societal necessities. This relationship helped shape the nonprofit’s distinct organizational characteristics (Hall, 1987).

As the nonprofit concept continued to evolve, tax policy issues surfaced. Ultimately, nonprofits were distinguished from other tax paying entities as part of the British Statute on Charitable Uses of 1601. Though the American colonies were influenced by the British concept of the nonprofit, few nonprofit corporations

existed in the colonies prior to 1780. This was due in part to the fact that their status was not firmly established in the law. For example, Harvard College, the oldest corporation in colonial New England, was organized by charter (making it technically private), yet it was governed by boards that were comprised of state-established church and state officials. Harvard's endowments were derived from private benefactors, but it also received funding from public allocations. At that time, Harvard was considered a public institution. It was only after the colonies declared independence that a more formal legal concept for nonprofits developed (Hall, 1987). Nonprofits ultimately emerged as either charitable trusts or private corporations and were creatures of state law.

From the end of the Civil War until the turn of the century, nonprofit organizations became increasingly instrumental in furthering cultural, educational and scientific endeavors. By the start of the twentieth century, nonprofits were becoming more economically significant and carried influential social implications. They were viewed as an independent sector, i.e., an alternative to government and a supplement to big business.

The Great Depression of the 1930's altered the relationship between government and the nonprofit sector, causing the nonprofit sector to become increasingly reliant on federal funds. After World War II, the steady growth in the number and size of nonprofit organizations drew the attention of Congress. Beginning in the early 1950's and continuing on through the early 1980's, a number of committees and commissions were formed to evaluate the role and

scope of the nonprofit sector. These deliberations culminated in stricter oversight and reporting, particularly in the area of private foundations. However, nonprofits retained the two primary benefits of nonprofit status - tax exemption and the ability to solicit tax deductible contributions.

To date, the role of the independent sector remains unsettled. Because a number of the sector's issues are interwoven with political, economic and social issues, many believe that this sector must remain flexible in order for it to be most effective.

3.2 *Accounting for Nonprofit Organizations*

An emphasis on fiscal control is a unifying theme found throughout the development of much of the accounting and reporting practices of nonprofits. Though historical evidence associated with nonprofit accounting and reporting practices is fragmented, traces of an emphasis on fiscal control can be distilled from selected segments of the Venetian method of double entry bookkeeping.¹¹ It is generally held that this double-entry system evolved and was disseminated throughout Europe in the fifteenth and sixteenth centuries because of its arithmetic controls over ledger accounts as well as its ability to provide merchants with a method for determining changes in their invested capital. Early accounts of the application of double-entry bookkeeping during this period show that many of the formalities of the process were not strictly applied. This was attributed, in part, to

¹¹ Luca Pacioli is credited with providing one of the best of all existing systems in his "Summa de Arithmetica Geometria Proportioni et Proportionalita". Distintio Nona-Tractatus XI, Particularis de Computis et Scripturis", Venice, 1494.

the fact that bookkeeping systems were ostensibly “customized” to meet the needs of merchants and clergy based on existing business practices, such as controlling inventories of wine and other staples (Peragallo, 1971).

One of the earliest examples of complete double-entry bookkeeping can be found in the journal of Sir Thomas Gresham, a leading sixteenth century merchant and financier of Tudor England (Winjum, 1971). Gresham’s journal logs his activities as an early merchant covering the period April 26, 1546 to July 10, 1552. Interestingly, during the entire six year period covered by his journal, Gresham rarely utilized the damage and gain account (or profit and loss account, as we know it) to determine income or profit. He focused more on the control aspects of the system rather than its ability to determine profit or loss. Gresham also employed venture accounts as part of his double-entry system. According to extant treatises of this period, venture accounts functioned in a manner similar to our current day subsidiary ledger accounts. They could be reviewed separately or could be combined to provide merchants with aggregate information about profitability. Gresham used venture accounts primarily as control accounts. It appears that he never intended to derive immediate profit or loss information from these accounts, but was more concerned with controlling the commodities he shipped and the proceeds from their sales. Gresham’s use of double-entry bookkeeping focused more on fiscal control rather than profit and loss.

British methods eventually made their way across the Atlantic to the American colonies. After the colonies declared independence and ultimately

emerged as a new democracy, modifications of existing bookkeeping and accounting methods were needed to (1) handle the peculiarities of government operations, (2) provide specific information to leaders in the separate branches, and (3) provide information to constituents.

In the early 1900's, the Institute for Government Research (presently the Brookings Institution) commissioned Francis Oakey to report on the principles of government accounting and reporting. His report, issued in 1921 (more commonly referred to as the Oakey Report), laid the foundation for the development of fund accounting. Oakey is one of the first to provide a formal definition of the term fund. He states that the fund "signifies a sum of money or other resources collected or gathered together to provide the means for defraying the expenditures involved in carrying on certain activities or attaining certain objectives." In the affairs of government, there is always a definite purpose in establishing a fund, as well as a formal procedure to initiate disbursements. Though Oakey's report focused primarily on fund accounting for governmental units, many of his comments and suggestions have been applied to the nonprofit sector, particularly those related to the use of funds and to fiscal control.

Numerous task forces and committees of the AICPA and American Accounting Association (AAA) extended Oakey's work and issued guidance on the application of fund accounting principles in the nonprofit sector. However, it remained unclear whether generally accepted accounting principles (GAAP), in their entirety, applied to nonprofit organizations. Accounting Research Bulletin No.

43, Chapter 1, par. 5 (1953) discusses the applicability of GAAP to business and nonprofit entities:

The committee has not directed its attention to the accounting problems or procedures of religious, charitable, scientific, educational, and similar nonprofit institutions, municipalities, professional firms and the like. Accordingly, except where there is a specific statement of a different intent by the committee, its opinions and recommendations are directed primarily to business enterprises organized for profit.

In 1966, the AAA, through its Committee to Prepare a Statement of Basic Accounting Theory, issued A Statement of Basic Accounting Theory, which was viewed as a first step in narrowing the gap in accounting theory between for-profit and nonprofit enterprises. In 1971, the AAA's Committee on Accounting Practice of Not-For-Profit Organizations issued a comprehensive follow-up report which assessed the merits of existing accounting practices and made suggestions in the form and content of reporting practices. Of the numerous recommendations made in the report, two are most noteworthy. First, the committee recommended that the full accrual basis be considered a generally accepted accounting principle for the preparation of financial statements. Second, although fund accounting may provide a methodology for the maintenance of fiscal controls, there should be less focus on individual funds and more attention given to providing information of the composite nonprofit operating entity taken as a whole.

During the 1970's, the AICPA, in response to the Filer Commission's report (1977) criticizing accounting methods used by eleemosynary organizations, issued SOP 78-10, Accounting Principles and Reporting Practices for Certain

Nonprofit Organizations, as well as two Audit Guides directed at colleges, universities and voluntary health and welfare organizations. These publications provided useful guidance in many areas and were a first step in unifying nonprofit accounting principles. However, numerous inconsistencies still remained, particularly among specialized industry groups.

During the late 1970's and early 1980's, the FASB issued six Statements of Financial Accounting Concepts (SFAC) related to financial reporting for business and nonbusiness enterprises. Of the six concepts statements, SFAC No. 4 specifically addressed the objectives of general purpose external financial reporting by nonbusiness organizations. Though several issues were addressed on a conceptual level, inconsistencies in accounting and reporting practices remained unresolved. In March 1986, the FASB added the following three items to its nonprofit project agenda: (1) accounting for depreciation, (2) accounting for contributions and (3) the display of information in financial statements. In 1987, the depreciation issue was addressed in SFAS No. 93, Recognition of Depreciation by Not-For-Profit Organizations. In 1993, both the accounting for contributions and the display of financial information issues were addressed in SFAS No. 116, Accounting for Contributions Received and Contributions Made and in SFAS No. 117, Financial Statements of Not-For-Profit Organizations (FASB, 1993b), respectively.

To better align its position with that of the FASB, the AICPA, through its Not-for-Profit Organizations Committee, issued guidance that integrated many

of the changes initiated by SFAS Nos. 93, 116, and 117. These guides also recommended that not-for-profit organizations should generally follow the effective provisions of ARB's, APB's and FASB statements and interpretations unless otherwise specifically exempted.

4. Prior Research Regarding Nonprofits

The nonprofit sector, with its unique nexus of contracts (Jensen and Meckling, 1976), intrigued many social science researchers, particularly those in the field of economics. Several economic rationales for the existence of nonprofits have been posited. For example, some believe that nonprofits provide supplemental public services in response to government failure, while others believe that nonprofits provide a mechanism for accomplishing a diverse set of entrepreneurial objectives other than profit maximization. Still others believe that nonprofits fill a gap in response to information imperfections where trust and altruistic motives are important.

The emergence of nonprofits in addition to, or instead of, for-profit firms has often been explained in the economics literature in terms of trust. Nonprofit institutions may dominate for-profit institutions in markets that exhibit a principal-agent problem between consumers and producers (Handy and Katz, 1998). However, trust is not always implied where an absence of profit motive exists. Profit maximization at the consumer's expense can easily be substituted by

employee effort aversion and increased benefits paid to managers. To overcome these potential abuses, nonprofits must look to build public trust. Handy (1995) argues that a nonprofit builds external trust through its board, whose members put their reputations on the line. Board members, in turn, must rely on internal trust to ensure that managers handle the day-to-day operations of the organization appropriately. By hiring committed managers, nonprofits have attempted to mitigate internal trust problems through a self-selection process.¹² Handy and Katz (1998) suggest that nonprofits attract committed individuals by offering them compensation packages that promote self-selection among potential managers. The need for self-selection is due, in part, to the fact that nonprofits are not subject to the usual checks and balances imposed by shareholders of for-profits. Such compensation packages generally involve lower base salaries and higher institution-specific fringes/perquisites as compared to those benefits offered in the for-profit sector. As long as nonprofits can distinguish between high ability and low ability managers, by paying less they avoid attracting rejects from the for-profit sector and still attract managers whose output is not less than those in the for-profit sector.

In addition to existence issues, the economics literature also has addressed a number of policy issues. These issues include tax exemption, the tax deductibility of charitable contributions and the regulation of fundraising activities.

¹² Handy and Katz (1998) define a committed individual as one whose preferences are such that, given the same parameters (prices, wage rate, etc.), he will provide the nonprofit with greater output than an uncommitted individual with the same abilities.

Agency theory has also been applied in the nonprofit sector. Bogart (1995) states that the typical principals in a nonprofit organization are generally the donors, board of directors and other outside agencies (principally governments and quasi-governmental agencies). Managers are the agents of the organization.

Each principal may possess differing interests in monitoring the performance of the agent. Where there is some commonality of interests, the incentive to monitor will increase. Where there is little overlap in the relationship, the incentive to monitor may be non-existent (Weisbrod, 1988). For example, certain nonprofits, as part of their mission, offer services to their members and will generally operate in a more entrepreneurial fashion to satisfy the needs of their members (customers) (O'Neill, 1994). Organizations that are formed purely through a voluntary membership mechanism are usually more apt to monitor the actions of their agents.

A majority of nonprofits receive support from the general public. This type of support generally takes the form of small, individual contributions derived from a vast number of donors. Monitoring by individual donors under these circumstances is not cost-effective. In response to this issue, a small industry of charity watchdogs (themselves being nonprofits) has developed. Organizations such as the Urban Institute and Philanthropic Research, Inc. have recently established web sites that provide financial and non-financial information about

nonprofit organizations to donors free of charge.¹³ Conversely, donors may show little interest in charity monitoring since the inherent reward from supporting a “just cause” outweighs their need for monitoring.

Additionally, many nonprofits receive grants and other funding from other nonprofits or from governmental agencies. Organizations that receive federal funding require special audits in accordance with prescribed governmental standards. Thus, by having outside agencies (such as the federal government) oversee the use of funds in nonprofits, the interests of current and potential nonprofit beneficiaries are less likely to be compromised (Williamson, 1983).

Fama and Jensen (1983a, 1983b) suggest that nonprofits are generally inefficient when compared to for-profit enterprises. This phenomenon can be primarily attributed to a nonprofit’s nondistribution constraint. In the nonprofit arena, the incentive to monitor managerial activities and promote efficiencies is lacking. Donors are generally more inclined to provide low cost capital to charities because of social, religious and psychological reasons. Fama and Jensen also argue that large donors effectively function in a quasi-shareholder capacity by requiring some form of non-monetary return. This return can be in the form of altruism, public acknowledgement or reputation enhancement.

¹³ In 2001, the Better Business Bureau (BBB) Wise Giving Alliance was formed through a merger of the National Charities Information Bureau (NCIB) and the Council for Better Business Bureaus Foundation and its Philanthropic Advisory Service (PAS). The BBB Alliance is a 501(c)(3) organization, affiliated with the Council of Better Business Bureaus, and provides information on charities that solicit contributions nationally.

Williamson (1983) argues that the monitoring function is more costly for charitable organizations because “ownership” interests are not marketable. Since market prices do not exist, it becomes difficult to assess management performance based upon a periodic valued-added measure. Additionally, most nonprofits operate pursuant to a mission statement that incorporates different objective functions. These objective functions may be difficult to observe. Williamson also notes that large donors may at times possess a cavalier attitude with respect to managerial efficiencies and be more concerned about their own agendas.

Weisbrod and Dominguez (1986) identify advertising (in the form of fund raising), perceived differences in organizational quality, and the perceived price to achieve organizational outputs as important measures used by donors in their philanthropic decision-making process.

Callen and Falk (1993), following Fama and Jensen (1983a, 1983b) and Williamson (1983), relate the efficiency of nonprofit organizations to the composition of their boards. Using data envelope analysis, they develop indices of technical efficiency, which are then included in tests used to assess the conjectured relationship that nonprofit organizations are more efficient if their boards are comprised of a greater proportion of outsiders. Their results do not support the hypothesized relationship.

Tinkelman (1998) extends the Weisbrod and Dominguez (1986) and Callen and Falk (1993) models by incorporating indicators of quality, efficiency, and measures of joint costs associated with fund raising and informing the public.

He uses charity ratings issued by the Council of the Better Business Bureau (CBBB) and National Charities Information Bureau (NCIB) to proxy for organizational quality and percentage of total expenses devoted to programs as a proxy for organizational efficiency. He finds that larger donors are more sensitive to quality or efficiency variables, but finds no significant association between total donations and joint costs.

A handful of empirical studies have examined selected nonprofit financial management issues. Chang and Tuckman (1990) investigate whether nonprofits accumulate surpluses, and if so, how much. They find that nonprofits systematically generate positive surpluses, even in organizations with large equity balances. The authors suggest that nonprofits accumulate surpluses as a source of subsidy, a facilitator of allocations to the future, a hedge against risk and uncertainty, a means to increase independence from the marketplace, and as a measure of financial success.

Tuckman and Chang (1993) examine how well debt is managed in nonprofit organizations. They find that seventy percent of their sample organizations hold some form of debt, despite their lack of access to capital markets. Some categories of nonprofits hold more debt than others, which is conjectured to relate to the fact that certain nonprofits need greater amounts of debt to carry out their objectives. They find that nonprofits with greater degrees of leverage are generally healthier, with borrowings more likely to be productive rather than problematic.

Nonprofit revenue recognition issues have not been examined extensively in the literature. Chase and Coffman (1994) empirically examine the relation between the choice of methods used by colleges and universities to account for investments and factors such as endowment size and return, debt and institution type. They find a significant association between investment accounting methods and institution type, endowment size and endowment return. Institutions that are private, have large endowments, and generate above average returns are likely to use the fair value method over the cost method to account for investments.

As previously discussed in Chapter 1, the FASB, as part of its deliberations, conducted a limited field test using 20 organizations and 39 financial statement users; however, the detailed results of this test were "kept confidential at the request of some of participants" (SFAS No. 116, par. 42).

5. Research Question

Contributions represent voluntary, unconditional transfers of cash or other property from one entity to another entity acting other than as an owner. A contribution can also be represented by a voluntary, unconditional cancellation of an entity's indebtedness. Its key characteristic is that it represents a non-reciprocal transfer from one entity to another. Thus, contributions are distinguished from exchange transactions, which are reciprocal in nature and generally involve the receipt and sacrifice of resources of similar value. A promise to give is an agreement, either written or oral, to donate cash or other property to another entity. Charitable promises have been generally enforced in the United States, with the judicial system often applying a complex set of contract law principles in the adjudication process. This complexity stems from the fact that in a traditional

charitable pledge, conventional consideration is lacking.¹⁴ William W. Story, in the second edition of his 1835 treatise on contracts, identifies the issues:

Promises, which are wholly gratuitous, are void, for want of consideration; for, however obligatory they may be in morals or honor, inasmuch as they are not founded upon an injury or deprivation to the promisee, or benefit to the promisor, they are not regarded by the law as legal and valuable consideration... So also subscriptions to public works and charities, cannot be collected, if they be merely gratuitous, and have not operated to induce engagements and liabilities, within the knowledge of the subscriber... Thus, the subscription of a particular person to a charity would not be obligatory, although it may have induced many subsequent subscriptions, because no injury is done to other subscribers, by a breach of payment by one.

For over a century, courts have attempted to balance a continuing tension between traditional contract law, which enforces only those promises supported by consideration, and a strong public policy in favor of charitable operations. In the absence of consideration, to make a promise enforceable, some courts have (1) reached to discover consideration in support of a promise, (2) adopted a concept of promissory estoppel as the equivalent of consideration¹⁵ or (3) enforced contracts as a matter of public policy. All of the foregoing presumes that sufficient, verifiable evidence exists to document that a promise was made and received. Thus, promises that contain ambiguous language may be rendered null and void. Similarly,

¹⁴ Calamari and Perillo (1987) define consideration as consisting of three elements: (1) the promisee must suffer a legal detriment or the promisor must receive a legal benefit, (2) the detriment must induce the promise, and (3) the promise must induce the detriment.

¹⁵ Calamari and Perillo (1987) describe the doctrine of "promissory estoppel" as a twentieth century innovation requiring four elements: (1) a promise, (2) a foreseeable action, (3) in reliance on the promise, and (4) injustice resulting from a failure to enforce the promise.

promises that include certain donor-imposed restrictions will likely be construed as conditional.¹⁶

Prior to the issuance of SFAS No. 116, the treatment of unconditional promises to give (also known as “pledges”) was inconsistent. Most nonprofit organizations did not recognize pledges as receivables or disclose them in their financial statements. Gross and Warshauer (1972) described the issues:

There is considerable difference of opinion on this subject (*pledges*), and the AICPA Audit Guides and Statement of Position take different positions... Since the Statement of Position affects so many types of organizations, it is likely that its approach will become very widespread. It provides that the organization should only record pledges which could be legally enforceable... While there is logic to this type of criterion, it seems much more pertinent to deal with the fundamental question of whether, in fact, the pledges will be collected... It would appear that the authors of the Guide could not decide which position was appropriate, that is, recording pledges or only disclosing them in the footnotes. Perhaps as the FASB gets into the nonprofit area the inconsistencies among the various Guides will be narrowed and eliminated.

As previously discussed, there were numerous reasons cited in favor of not recognizing unconditional promises when received. However, four were most resonant. First, organizations were concerned about potential ambiguities in distinguishing between a statement of intent and a binding promise. Second, they were concerned with measurement difficulties, particularly how to determine appropriate discount rates for multiyear promises. Third, recognizing assets before uncertainty is reasonably resolved affects the reliability of such information.

¹⁶ For a comprehensive review of this area, see Budig, Butler and Murphy (1993).

Fourth, the sector was concerned that the immediate recognition of unconditional promises in the year of receipt would have an adverse impact on future fundraising efforts.

SFAC No. 4 describes, in broad terms, the objectives of general-purpose external financial reporting by both nonprofit and business enterprises. It states, in part, that the focus of the financial statements should be to provide information that assists resource providers in deciding whether to make resources available to an entity. It further recommends that "it is not necessary to develop an independent conceptual framework for any particular categories of entities, e.g., nonbusiness organizations or business enterprises" (SFAC No. 4, par. 1).¹⁷ SFAS No. 117 - Financial Statements for Not-For-Profit Organizations reaffirms these objectives and adds that general purpose external financial statements should be useful to groups of external users, such as donors and creditors, who generally have similar needs.¹⁸

SFAC No. 6 (FASB, 1985), which superseded SFAC No. 3 (FASB, 1980b) and was specifically expanded to include nonprofit organizations, identifies and defines ten of the more common interrelated elements of financial statements. The first of the ten enumerated in this statement is the definition of an asset. "Assets are probable future economic benefits obtained or controlled by a particular

¹⁷ This approach is also consistent with Anthony (1989), who recommends that business and nonbusiness firms use the same accounting standards for measuring net income.

¹⁸ For a detailed discussion of the prescribed form of financial statements of not-for-profit organizations, see SFAS No. 117 (FASB, 1993b).

entity as a result of past transactions or events” (SFAC No. 6, par. 25). Before an asset can be recognized in the financial statements, it must be (1) measurable, (2) relevant and (3) based on reliable information.

SFAC No. 6 defines other concepts that either underlie or are closely related to the ten elements of financial statements. The first, and probably the most significant of these other concepts, is the use of accrual accounting procedures. Accrual accounting procedures recognize that operations of an entity during an accounting period, as well as other outcomes that impact performance, often do not coincide with the receipt and expenditure of cash. Additionally, they:

Are based on not only cash transactions, but also credit transactions, barter exchanges, *nonreciprocal transfers* (emphasis added)... by accounting for noncash assets, liabilities, revenues, expenses, gains, and losses, accrual accounting links an entity's operations and other transactions, events, and circumstances that affect it with its cash receipts and outlays. Accrual accounting thus provides information about an entity's assets and liabilities and changes in them that cannot be obtained by accounting for only cash receipts and outlays. (SFAC No. 6, par. 139)

The Board, in its deliberations of the Standard, determined that unconditional promises to give meet the definition of an asset when received or a liability when made, can be reliably measured and are relevant.

With respect to relevance, the Board refers to par. 47 of SFAC No. 2, which states that for accounting information to be relevant, it “must be capable of making a difference in a decision by helping users to form predictions about the outcomes of past, present and future events or to confirm or correct expectations”. The Board goes on to state that “information about promises to give, whether

received or made, is relevant. Donors, creditors, and other users are interested in information about probable future transfers of cash or other economic resources. That information is useful in assessing an entity's financial position and ability to generate public support and continue to operate" (SFAS No. 116, par. 102).

It follows, based on the foregoing analysis, that recognizing unconditional promises to give as assets and as revenues in the period in which promises are received should be useful in forecasting an organization's future cash inflows. Thus, revenues computed under SFAS No. 116 are expected, on average, to be a better predictor of future cash inflows, which elicits the following research question:

Research question: *Does the recognition of unconditional promises to give as assets and as revenues in the period received (as prescribed under SFAS No. 116) enhance the ability of revenues to predict future cash inflows?*¹⁹

¹⁹ For purposes of this analysis, the term "cash inflows" equates to revenues generated by contributions and their corresponding cash inflows.

6. Research Design and Testable Hypotheses

SFAC No. 1, (FASB, 1978) par. 37, states that “financial reporting should provide information to help investors, creditors and others assess the amounts, timing, and uncertainty of prospective net cash inflows to the related enterprise”. SFAC Nos. 4 and 6 echo this point and highlight its applicability to nonbusiness enterprises. In the for-profit arena, it is widely accepted since Ball and Brown (1968) that stock prices or returns can be used to assess the efficacy of accounting numbers. However, because marketable ownership interests (prices) do not exist for nonprofit firms, an alternative approach is necessary. Holthausen and Watts (2001) suggest that various forms of non-price tests, which include tests that assess the predictability of future cash flows, “may be viewed as a potential alternative to value-relevance studies that depend on price”.

This study examines whether the recognition of unconditional promises to give as assets and revenues in the period received enhances the ability of accrual-

based revenues to predict future inflows of cash revenues. Hence, tests on cash flow predictability are conducted.²⁰

Dechow, Kothari and Watts (1998) (“DKW”) develop a model of earnings, cash flows and accruals and find that earnings is a better predictor of future operating cash flows, and earnings is consistently incrementally useful in forecasting future operating cash flows. In their concluding comments, they suggest that one of several lines of further inquiry would be to use the model to evaluate the effects of individual accounting standards. This study builds on their suggestion.

6.1 *The Model*

A model similar to that used by DKW is adopted. This modified model incorporates the revenue recognition criteria mandated by SFAS No. 116 and describes the relations between revenues, accruals and cash inflows. The model, and its notation, is also consistent with Barth, Cram and Nelson's (2001) expanded analysis of the DKW model.

Dechow (1994) argues that the role of accruals is to overcome problems with measuring performance when firms are in continuous operation. The accrual process relies on two significant concepts – the revenue recognition principle and the matching principle. The revenue recognition principle requires revenues to be recognized when an entity has (1) substantially accomplished what it must do to be entitled to the benefits of the revenues and (2) collection is reasonably assured. The

²⁰ The approach used in this dissertation can be extended to other industries or entities for which market prices are not readily available, i.e., private firms, quasi-governmental organizations or divisions of firms.

matching principle requires that the efforts (expenses) associated with generating revenues be expensed in the period in which revenues are recognized. Since the focus of this study is on unconditional promises to give that are received by nonprofit organizations, the modeling in this section is limited to addressing the revenue recognition aspects of accruals.²¹

The model, as constructed, assumes that revenues recognized but uncollected in the current period are collected in the next period. This assumption is consistent with the revenue recognition principle. It also suggests that revenues (as determined under SFAS No. 116) will better predict future cash inflows from contributions. The model also makes assumptions about the revenue generating process, since contractual arrangements initiated at this level drive the timing, amount and recognition of revenues, cash inflows and change in net assets (the nonprofit equivalent of net income). Additionally, the conditions (both explicit and implicit) underlying these contracts will determine when future cash inflows are verifiable (and thus includable in accrued revenues), which is a major consideration in this study.

DKW, relying on the for-profit work of Ball and Watts (1972), among others, begin their model with the assumption that sales for period t , denoted S_t , follows a random walk process. To date, there are no formal studies documenting the time-series behavior of revenues for nonprofit firms. As previously discussed in Chapter 2, the nonprofit community expressed serious concern about SFAS No.

²¹ The model could be expanded and generalized to aggregate accruals, which would address issues

116's potential impact on long-term giving trends. These concerns are reiterated in par. 110 of SFAS No. 116:

Some respondents to the 1990 Exposure Draft contended that complying with recognition requirements for promises to give would hinder fund-raising efforts. This was the most frequently cited concern of respondents to the 1992 Exposure Draft. Some said recognition of unconditional promises to give would make entities appear to have excess spendable funds and thus, have a reduced need for contributions... Still others asserted that requiring donors to recognize multiyear unconditional promises would discourage that kind of long-term giving.

The aforementioned anecdotal evidence could be interpreted as suggesting that the time-series behavior of contribution revenues (1) may have been altered after the passage of SFAS No. 116, and/or (2) more closely resembles a mean reverting process (when compared to the time-series behavior of revenues of for-profit firms).

Based on the foregoing, the DKW model is augmented to make it more descriptive. This augmented model assumes that the time-series behavior of revenues (contributions), denoted as R_t in period t , follows an integrated moving average (IMA) process of the following form:

$$R_t = R_{t-1} + \varepsilon_t - \theta\varepsilon_{t-1} \text{ or}$$

$$R_t - R_{t-1} = \varepsilon_t - \theta\varepsilon_{t-1} \quad (1)$$

where θ is the moving average coefficient and ε_t is a random variable with variance σ^2 and $\text{cov}(\varepsilon_t, \varepsilon_{t-\tau}) = 0$ for $|\tau| > 0$. This family of stochastic processes yields a random walk when $\theta = 0$ and a mean reverting process when $\theta = 1$.

related to matching (Dechow, 1994).

Given the fact that many contractual arrangements include negotiated credit terms, the relationship between revenues and cash inflows is not one-to-one. The model assumes that proportion α of the organization's revenues remains uncollected until the end of the next period. Thus, accounts receivable for period t , denoted AR_t , is:²²

$$AR_t = \alpha R_t \quad (2)$$

The accounts receivable accrual incorporates anticipated future cash inflows into revenues and change in net assets. By assuming that α is an intertemporal constant, changes in accounts receivable will be proportional to changes in revenues. Therefore, a change in accounts receivable, denoted ΔAR_t , is:

$$\Delta AR_t = \alpha \Delta R_t \quad (3)$$

$$\text{or} \quad \Delta AR_t = \alpha(R_t - R_{t-1}) \quad (4)$$

The accrual component represented in equation (4) will cause cash inflows from contributions, denoted CIC , to differ from R based on the following relation:

$$CIC_t = R_t - \Delta AR_t$$

$$\text{or} \quad CIC_t = R_t - \alpha(R_t - R_{t-1}) \quad (5)$$

$$\text{or} \quad R_t = CIC_t + \alpha(R_t - R_{t-1}) \quad (6)$$

²² For purposes of this analysis and for consistency in notation, the terms accounts receivable, unconditional promises, pledges receivable, grants receivable, donations receivable and contributions receivable are used synonymously.

Thus, current revenues represent current cash inflows from contributions plus accrual adjustments. Since accruals (as defined in the model), represent anticipated cash inflows, current revenues can be viewed as a forecast of future cash inflows. Based on equation (5), next period's expected cash inflows from contributions equals:

$$\begin{aligned}
 E_t[CIC_{t+1}] &= E_t[R_{t+1} - \alpha(R_{t+1} - R_t)] \\
 &= E_t[R_{t+1} - \alpha(\epsilon_{t+1} - \theta\epsilon_t)] \\
 &= R_t - \theta\epsilon_t + \alpha\theta\epsilon_t
 \end{aligned} \tag{7}$$

where $E_t[\cdot]$ is the expectations operator conditioned on time t information.²³ Equation (7) shows that next period's expected cash inflow from contributions is equal to current revenue, adjusted for the current revenue shock ($\theta\epsilon_t$) and the uncollected portion of the current revenue shock ($\alpha\theta\epsilon_t$). When $\theta = 0$, the series follows a random walk, which suggests that last period's revenues is an unbiased predictor of next period's cash inflows from contributions. This is because current revenue includes the change in the accounts receivable component to be collected next period. If $0 < \theta \leq 1$, then the series follows a moving average process, which suggests that next period's cash inflows from contributions will be predictably low (high), or biased, if the current period's revenue change is positive (negative). This

²³ The complete derivation of equation 7 can be found in Appendix 1.

is because current revenue has been modified to exclude a portion of the change in the accounts receivable component.

Expected cash inflows from contributions at period $t+1$ using period t cash inflows from contributions (CIC_t) as the predictor can be obtained by re-expressing equation (7) in terms of CIC . This is accomplished by substituting CIC_t for R_t (based on equation 6), which yields:

$$E_t[CIC_{t+1}] = CIC_t + \alpha\epsilon_t - \alpha\theta\epsilon_{t-1} - \theta\epsilon_t + \alpha\theta\epsilon_t \quad (8)$$

where $E_t[\cdot]$ is the expectations operator conditioned on time t information.²⁴ Based on equation (8), in the case of the random walk ($\theta = 0$), next period's cash inflows from contributions (CIC_{t+1}) will be predictably low (high), or biased, if last period's revenue shock was negative (positive). This is because current cash inflows from contributions includes last period's uncollected current revenue shock (AR_{t-1} or $\alpha\epsilon_{t-1}$). If $0 < \theta \leq 1$, next period's prediction of cash inflows from contributions will again be biased, the direction of which will be a function of the sign and magnitude of the current and prior period's revenue shocks.

Organizations that are in steady-state, i.e., neither increasing nor reducing revenues will on average report similar amounts under a cash system or an accrual system (Dechow, 1994).

²⁴ The complete derivation of equation 8 can also be found in Appendix 1.

6.2 *Predicting Future Cash Inflows*

DKW evaluate a one-period-ahead forecast using current earnings and current cash flows as predictors of next period's cash flows. They model and empirically document a lower forecast error variance for the current earnings specification. DKW attribute this finding to the use of accruals, and further posit and document that the longer a firm's operating cycle, the larger the difference in forecasting accuracy between current earnings and current cash flows. Their results are also consistent with Dechow (1994), who documents that earnings is less variable than cash flows.

As discussed in Section 6.1, equations (5) and (6) show that current cash inflows from contributions (CIC_t) differs from current revenues (R_t) by accruals. A further comparison of these two equations reveals that accruals are common to both, but of opposite sign, which is consistent with DKW, who suggest that accruals help mitigate negative serial correlation in cash flows. Expectation equation (7) also suggests that revenue accruals provide useful information because they incorporate anticipated future cash inflows into current revenues. To further quantify the effects of this usefulness, Mean Squared Error (MSE) for each predictor is derived under the model. Since MSE considers both the bias and variance of each predictor, predictors can be ranked based on the relative magnitudes of their MSE.

Equation 7 suggests that current revenues, adjusted for the effects of the current revenue shock and uncollected portion of the current revenue shock (which

are known realizations at time t) is the best predictor of next period's cash inflows from contributions (CIC_{t+1}). MSE for equation 7 can be expressed as follows:²⁵

$$MSE_{BEST} = (1 - \alpha)^2 \sigma^2$$

Similarly, MSE for cash inflows from contributions at time t (CIC_t or equation 8), as well as MSE for current revenues at time t (R_t), can also be expressed as:²⁶

$$MSE_R = (1 + \theta)^2 (1 - \alpha)^2 \sigma^2$$

$$MSE_{CIC} = (1 - \theta + 2\alpha\theta)^2 \sigma^2$$

Since the magnitude of the difference between revenues and cash inflows from contributions in each period will increase (1) as alpha increases and (2) the larger the change in revenues, the value of alpha, in a sense, functions as a smoothing mechanism. In the MSE_{BEST} case, increases in alpha monotonically decrease error and are unaffected by changes in theta. With respect to MSE_R , increases in alpha again serve to reduce error, despite their interaction with theta. However, MSE_R will always be greater than MSE_{BEST} by a factor of $(1 + \theta)^2$ for all $\theta > 0$. With regard to MSE_{CIC} , error is again a function of both alpha and theta. Except in certain extreme circumstances where alpha is very small and theta is very large, MSE_{CIC} will produce larger errors than MSE_R and MSE_{BEST} . The foregoing analysis is consistent with the notion that accruals are used to mitigate associated timing problems. The model suggests that increases in alpha also help facilitate this process.

²⁵ See Appendix 1 for a complete derivation.

²⁶ See Appendix 1 for complete derivations.

All of the aforementioned suggests an underlying mean reverting process in cash inflows, which is consistent with the arguments of nonprofit constituents who opposed the Standard. Thus, based on the intuition obtained from the model, coupled with the findings in DKW and Dechow (1994), current revenues (R_t) is expected to provide a more accurate one-period-ahead forecast of cash inflows from contributions (CIC_{t+1}) as compared to current cash inflows from contributions (CIC_t).

6.3 *Testable Hypotheses and Methodology*

6.3.1 *Relative Tests of Predictive Ability*

This section develops tests which assess the relative ability of current revenues and current cash inflows from contributions to forecast next period's cash inflows from contributions. As previously discussed in Chapter 5, anecdotal evidence suggests that prior to SFAS No. 116, the accounting treatment for unconditional promises to give was inconsistent. Though most nonprofits did not accrue or disclose unconditional promises to give prior to SFAS No. 116, some did choose to recognize them as receivables and revenues in the period received. Similarly, other forms of voluntary contributions, i.e., grants, membership dues from the public, indirect forms of public support, and prepaid revenues were typically recognized using the accrual system in accordance with various AICPA SOP's and Audit and Accounting Guides.

Therefore, if cash inflows generated by nonprofit organizations typically suffer from timing problems, (1) accruals should help mitigate these problems and

(2) the empirical results should be consistent with the predictions derived from the model and the results found in DKW. This leads to the study's first testable hypothesis, stated in alternative form:

Hypothesis 1: *Current revenues (R_t) predicts next period's cash inflows from contributions (CIC_{t+1}) better than current cash inflows from contributions does (CIC_t).*

If unconditional promises to give are relevant to users, e.g., useful in predicting future cash inflows, the ability of current revenues to predict future cash inflows from contributions should improve under the SFAS No. 116 recognition guidelines. This generates the second testable hypothesis, stated in alternative form:

Hypothesis 2: *Current revenues (R_t) determined under SFAS No. 116 (the "post-regulation" period) will better predict next period's cash inflows from contributions (CIC_{t+1}) as compared to current revenues (R_t) computed under "pre-regulation" period conventions.*

To test hypotheses 1 and 2, the following univariate cross-sectional regressions are estimated:

$$CIC_{t+1} = \gamma_0 + \gamma_1 R_t + \varepsilon_{t+1} \quad (9)$$

$$CIC_{t+1} = \gamma_0 + \gamma_1 CIC_t + \varepsilon_{t+1} \quad (10)$$

Relative predictive ability can be inferred by comparing each model's adjusted R^2 in both pooled and annual cross-sectional regressions.²⁷ Additionally, consistent with Dechow (1994) and Barth, Cram and Nelson (2001), competing specifications can be further evaluated using Vuong's likelihood ratio test for non-nested model selection (Vuong, 1989).²⁸ A detailed discussion of Vuong's likelihood ratio test and its application in relative information content studies is provided in Appendix 2.

Based on the discussion in section 6.2 and hypothesis 1, the current revenues specification is expected to have (1) a larger adjusted R^2 and (2) a positive and significant Vuong Z-statistic. Hypothesis 2 predicts an improvement in the explanatory power of the current revenues specification in the post-regulation period.

²⁷ Brown, Lo and Lys (1999) suggest that R^2 's may vary, in part, to scale effects that may differ from sample to sample. They caution that between-sample comparisons of R^2 may be invalid unless one controls for the scale factor's coefficient of variation. In this study, all variables are scaled by beginning of year total assets. Untabulated statistics indicate that this scaling variable's coefficient of variation remains relatively stable throughout the sample period. Therefore, scale effects, if any, should be *de minimis*.

²⁸ For consistency with Dechow (1994) and Barth, Cram and Nelson (2001), this study uses Vuong's likelihood ratio test for model selection. Alternatively, Biddle, Seow and Siegel (1995) develop a regression-based test, which is also well suited for relative information content comparisons.

6.3.2 *Incremental Tests of Predictive Ability*

DKW test the incremental predictive abilities of earnings and operating cash flows by estimating firm-specific multiple regressions of future operating cash flows on current earnings and current operating cash flows. They find that current earnings are consistently incrementally useful in predicting future cash flows, while operating cash flows are only moderately useful. DKW suggest that these regression results demonstrate that the dominance of earnings is not the result of precluding cash flow changes from exploiting their negative serial correlation. Because accruals represent the difference between earnings and cash flows, earnings' forecast superiority beyond cash flows must therefore be attributed to accruals.

As explained in section 6.2, the model defines accrual adjustments as the difference between current revenues and current cash inflows from contributions. The discussion in that section also suggests that the difference in predictive power between revenues and cash inflows increases in magnitude as α increases and as revenue changes become greater.

Therefore, consistent with the foregoing analysis, current revenue is expected to be incrementally superior in predicting future cash inflows, while current cash inflows from contributions is predicted to be only moderately

incrementally useful. This lead to the study's third testable hypothesis, stated in alternative form:

Hypothesis 3: *Current revenues (R_t) will be incrementally superior to current cash inflows from contributions (CIC_t) in predicting future cash inflows from contributions (CIC_{t+1}).*

To test hypothesis 3, the following multivariate cross-sectional regression model is estimated:

$$CIC_{t+1} = \gamma_0 + \gamma_1 R_t + \gamma_2 CIC_t + \varepsilon_{t+1} \quad (11)$$

With respect to the multivariate regression model in (11) above, the incremental predictive abilities of current revenues and current cash inflows from contributions can be inferred by examining the significance of the model's slope coefficients in both pooled and annual cross-sectional regressions. Based on the model and the results in DKW, both the current revenues and current cash inflow from contributions coefficients are expected to be significant, with the former being significant more consistently than the latter, which supports hypothesis 3.

6.3.3 Additional Tests

In this section, additional tests are designed to (1) evaluate whether the methods applied in sections 6.3.1 and 6.3.2 are sensitive to calendar period effects, and (2) indirectly assess the impact of recording unconditional promises to give as

assets and revenues in the period received due to data limitations in the post-regulation period.

6.3.3.1 Reversing the Impact of Recorded Pledges

As discussed in Chapter 5, though most nonprofits did not accrue or disclose unconditional promises to give prior to SFAS No. 116, some did choose to recognize them as receivables and as revenues in the period received (hereinafter referred to as "pre-adopters"). These pre-adopters typically report recognized promises under the caption pledges receivable on the balance sheet.

According to the FASB (and most legal treatises on contracts), pledges and unconditional promises to give possess similar characteristics. This point is reiterated by the Board in SFAS No. 116, par. 89:

The 1990 Exposure Draft used the term pledges to describe a promise to give, as do health care services and health and welfare Guides and SOP 78-10. However, some respondents to the Exposure Draft said that they use the term to describe promises as well as other intentions to give that are not promises. Although the Board continues to believe that most pledges are promises to give, this Statement avoids the term *pledge* because it may be misinterpreted.

Based on the foregoing, data is collected on nonprofits' beginning-of-year and end-of-year pledges receivable. To the extent that recognizing pledges receivable (a surrogate for unconditional promises to give) aids in the prediction of future cash inflows, reversing out their impact should reduce current revenues'

ability to predict future cash inflows. This generates testable hypothesis 4, stated in alternative form:

Hypothesis 4: *Reversing the effects of "pledges receivable" will reduce the ability of current revenues (R_t) to predict next period's cash inflows from contributions (CIC_{t+1}).*

To test hypothesis 4, revenues are adjusted for the net change in beginning and ending pledges receivable to arrive at pro-forma revenues, denoted PFR,²⁹ for each period. Regression equations 9 and 11 are then re-estimated by substituting PFR for R .

Reversing the impact of recorded pledges is expected to reduce the explanatory power of the pro-forma regressions (lower adjusted R^2 s and Vuong Z-statistics) in both the pre- and post-regulation periods. Findings consonant with the aforementioned would (1) be consistent with hypothesis 4, (2) suggest that tests developed in section 6.3.1 and 6.3.2 were unaffected by calendar period effects, and (3) provide indirect evidence in support of hypothesis 2.

6.3.3.2 *Partitioning Based on Pre-Adopter and Post-Adopter Classification*

Presently, only three years of data are available subsequent to the effective date of SFAS No. 116. This limitation makes it difficult to fully assess the

²⁹ $PFR_t = R_t + \text{Pledges Receivable}_{t-1} - \text{Pledges Receivable}_t$

post-regulation predictive implications of recognizing unconditional promises to give in the year of receipt. In this section, organizations are segregated based on their pre-adopter or post-adopter status. Pre-adopters are defined as those organizations that reported pledges receivable in any of the five years preceding the effective date of SFAS No. 116. All other organizations are classified as post-adopters. Tests are then replicated on both sub-groups.

Partitioning the sample in this fashion creates a unique setting in which to test and exploit the pre- and post-regulation impact of recognizing pledges. The intuition for this analysis is as follows: since pre-adopters recognized pledges in both the pre- and post-regulation periods, they should be less affected by the Standard's mandated recognition criteria in the post-regulation period. Post-adopters, on the other hand, should demonstrate an improvement in predictive ability in the post-regulation period. When the impact of recorded pledges is reversed, pre-adopters should experience a reduction in predictive ability for all periods. Similarly, post-adopters should experience a reduction in predictive ability in the post-regulation period. Results consistent with the aforementioned would (1) again suggest that calendar period effects, if any, were minimal, (2) also provide indirect evidence in support of hypothesis 2, and (3) provide further support for hypotheses 1, 3 and 4.

7. Sample Description and Variable Measurement

7.1 Data

Data was obtained through the National Center For Charitable Statistics (NCCS). One of the objectives of the NCCS is to build compatible national and regional databases. NCCS obtains data from the Internal Revenue Service (IRS) based on the Form 990 tax returns filed by tax-exempt organizations. IRS Form 990 tax returns have been used by researchers to study a broad spectrum of issues related to the nonprofit sector (Froehlich and Knoepfle, 1996). For purposes of this study, the IRS Statistics on Income (SOI) files are utilized.

The SOI division of the IRS creates an annual file based on information included in the annual Form 990 Return Transaction File (RTF). The SOI file includes all 501(c)(3) entities with assets in excess of \$10 million and a random sample of smaller organizations. Each annual SOI file includes between 10,000 and 11,000 organizations and contains information for over 300 financial and other variables.

The data in the SOI files are generally considered more reliable than the RTF files because they have been subject to substantial error checking by the staff

of the SOI division prior to their internal use by the IRS. Froehlich, Knoepfle and Pollak (2000) conclude that Form 990 tax return data can be considered an adequate and reliable source of information for studies incorporating basic balance sheet and income statement entries. Froehlich and Knoepfle (1996) find a greater correlation between tax filings and financial statements for larger organizations (annual revenues greater than \$1.3 million). Researchers interested in the major nonprofit organizations (those with assets in excess of \$10 million) are recommended to use the SOI files (Gordon, Greenlee and Nitterhouse, 1999).

7.2 *Sample Selection*

Financial variables were extracted from IRS SOI files covering the period 1990 through 1997, with 1997 representing the latest available file. SFAS No. 116 became effective for financial statements issued for fiscal years beginning after December 15, 1994. However, not-for-profit organizations with less than \$5 million in total assets and \$1 million in annual expenses were permitted to adopt the pronouncement a year later, although early adoption was recommended.

Because smaller organizations were permitted to adopt the Standard one year later (fiscal years beginning after December 15, 1995), several sample selection filters are employed to ensure consistency throughout the post-regulation period. Hence, entities ultimately included in the sample were required to have (1) assets of at least \$5 million, (2) total expenses of at least \$1 million, and (3) sufficient financial data to compute cash inflows from contributions for each period. Organizations functioning merely as conduits, i.e., total revenues equal to

total expenses, are excluded. After application of these restrictions, 43,461 organization-years remained. The final sample is subject to potential survivorship bias and is comprised primarily of entities of substantial size.

7.3 *Variable Measurement*

All variables used in the study have been deflated by beginning of year total assets to mitigate spurious correlations due to size and to reduce heteroscedasticity (Christie, 1987).³⁰ To avoid undue influence from observations with potential errors or with extreme values due to scaling, observations with the largest and smallest 1% values of deflated total revenues, contribution revenue or cash inflows from contributions are excluded. Variables are defined as follows based on Form 990 general line descriptions (in parentheses):

TA	=	total assets, (total assets, beginning of year)
R	=	contribution revenue, (total charitable contributions)
TR	=	total revenues, (total revenue)
PLGE	=	pledges receivable, (pledges receivable)
GRTREC	=	grants receivable, (grants receivable)
FUTSUP	=	deferred contribution revenues, (support and revenue designated for future)
TOTEXP	=	total expenses, (total expenses)

³⁰ Alternatively, scaling the variables by total revenues did not significantly alter the results.

$$\begin{aligned}
 \text{CIC}_t &= \text{cash inflows from contributions, computed as follows:} \\
 &R_t + \text{PLGE}_{t-1} - \text{PLGE}_t + \text{GRTREC}_{t-1} - \text{GRTREC}_t - \\
 &\text{FUTSUP}_{t-1} + \text{FUTSUP}_t
 \end{aligned}$$

Total revenues (TR) incorporates all revenues derived by nonprofit organizations, including, but not limited to, contributions, gifts, investment earnings and related gains and losses, special events, and gross profit from sales of inventory. Contribution revenue (R) typically includes only amounts received (both cash and noncash) from contributions, gifts, grants, membership dues from the public, and amounts received as indirect public support. Pledges receivable represent amounts recorded on the tax return balance sheet and are used to proxy for beginning-of-year and end-of-year unconditional promises to give in empirical tests conducted in Chapter 8.³¹

The instructions to Form 990 generally require organizations to figure revenues and expenses using accounting methods that are consistent with their underlying books and records.³² They also remind filers that a number of states

³¹ The instructions for Form 990 have consistently required that other types of receivables be categorized on separate lines of the tax return, i.e., accounts receivable from the sale of goods and/or services, grants receivable, and other notes receivable, which further strengthens the use of this line item as a proxy for unconditional promises to give.

³² The overriding tax reporting requirement is that accounting methods clearly reflect income, which is consistent with the requirements under GAAP. Tax reporting does not, however, permit organizations to recognize the value of donated services and unrealized investment income as revenues on Form 990. These differences must be reconciled in a separate section of Form 990.

require reporting that is consistent with published AICPA Audit Guides and SOP's.³³

Since the Form 990 tax return does not require the disclosure of cash flow information, cash inflows from contributions were computed indirectly using balance sheet and income statement amounts. This computation has been designed to incorporate all of the major balance sheet items that typically affect nonprofits' cash inflows from charitable contributions and should therefore represent a reasonable proxy for actual cash collections.³⁴

To further partition the data, SOI files were merged with NCCS National Taxonomy of Exempt Entities (NTEE) data files. The NTEE classification system was developed in the 1980's by the NCCS, in collaboration with major nonprofit organizations, to classify all forms of nonprofit organizations (Stevenson, 1997). It is a mixed notation system comprised of the following ten major categories:

<u>Category</u>	<u>Illustrative Organization</u>
Arts	Cultural Center for the Arts
Education	Juilliard School
Environment and Animals	New York Botanical Garden
Health	American Diabetes Association
Human Services	Boy Scouts of America
International	International Youth Foundation

³³ Some state and local governments accept Form 990 as a substitute for all or a portion of their own financial reporting forms.

³⁴ Determining cash flows indirectly may introduce measurement error, which can bias reported associations (Dechow, 1994). Measurement error could also affect this study to the extent that material balance sheet items are inappropriately excluded or included in the indirect computation of cash inflows (principally discretionary year-to-year line item groupings and/or reclassifications on the tax return, as determined by the tax return preparer).

<u>Category</u>	<u>Illustrative Organization</u>
Public, Societal Benefit	United Way
Religious Related	International Bible Society
Mutual Membership	Actors Fund of America
Unknown	

The NTEE system is further sub-divided into 26 major groups and 645 centile levels. In this study, descriptive data analysis is limited to the ten major NTEE categories.

8. Empirical Results

Test results for the hypotheses developed in Chapter 6 are discussed in this Chapter. Significance levels for univariate and multivariate regression coefficients are reported using both Ordinary Least Squares (OLS) and White's (1980) standard errors. All pooled cross-sectional regression tests spanning the entire sample period are replicated following Fama and MacBeth (1973) and Fama and French (2000), which produce results (untabulated) that are consistent with those presented in the Chapter. Reported significance levels computed under Vuong's (1989) likelihood ratio test for non-nested model selection are from a two-tailed test. Except as otherwise noted, the term "highly significant" refers to p-values that are less than .0001. The term "significant" refer to p-values greater than or equal to .0001, but less than .05.

8.1 *Descriptive Statistics*

Descriptive statistics for the five primary variables used in this study (in \$000's) are reported in Table 1. Panel A presents summary statistics for the full

sample, which is comprised of 43,461 organization-year observations.³⁵ The first variable, total revenues, has a maximum (minimum) of \$4.6 billion (\$0.5 million), with a standard deviation of \$145 million. The next variable, total assets has a maximum (minimum) of \$15.3 billion (\$5 million), with a standard deviation of \$277 million. Contribution revenue has a maximum (minimum) of \$930 million (\$0), with a standard deviation of \$34 million. Cash inflows from contributions has a maximum (minimum) of \$922 million (\$0), with a standard deviation of \$34 million. Total expenses has a maximum (minimum) of \$4.3 billion (\$1 million), with a standard deviation of \$132 million.³⁶ All five variables have (1) mean values in excess of their median values and (2) standard deviations that are relatively small compared to their respective maximum (minimum) values, suggesting positively (right) skewed and leptokurtic distributions.

Panel B presents similar summary statistics for the pre-FASB regulation period, which constitutes 26,275 organization-year observations, or approximately 60% of the sample. The means, medians and standard deviations for each of these variables are less than their full sample counterparts in Panel A, suggesting that macroeconomic factors, including, but not limited to, the bull market of the 1990's, affected nonprofit organizations. The reported statistics for all five variables

³⁵ To simplify the discussion in this section, all references to the summary statistics in Table 1 are presented in millions or billions (or fractions thereof).

³⁶ The minimum values reported for total assets and total expenses are consistent with the sample selection criteria minimums of \$5 million and \$1million discussed in Chapter 7.

suggest positively (right) skewed and leptokurtic distributions, consistent with the results presented in Panel A.

Panel C presents analogous summary statistics for the post-FASB regulation period, which includes 17,186 organization-year observations, or approximately 40% of the sample. The means, medians and standard deviations for each of these variables are greater than their full sample counterparts in Panel A, again suggesting that macroeconomic factors affected nonprofit organizations.³⁷ The reported statistics for all five variables suggest positively (right) skewed and leptokurtic distributions, consistent with the results presented in Panel A.

Panel A of Table 2 reports full sample means and medians (in \$000's) for the following ten major NTEE groups: A (*Arts*), B (*Education*) C & D (*Environment and Animals*), E through H (*Health*), I through P (*Human Services*), Q (*Int'l*), R through W (*Public, Societal Benefit*), X (*Religious Related*), Y (*Mutual Membership*) and Z (*Unknown*). Entities in the categories of Education, Health, and Human Services comprise approximately 84% of the sample. Education-related organizations have, on average the highest total assets, followed by Health-related entities. Health-related organizations have, on average, the largest total revenues. International-related entities report on average the largest contribution revenue.

³⁷ The increase in total contributions and total assets around 1995 may also have been affected by the adoption of SFAS No. 116. The pronouncement permitted adopters to apply its provisions either retroactively or by way of a cumulative effect adjustment. Application of a cumulative effect methodology would not require a modification to total assets (as reported on Form 990) between pre- and post-adoption years. Such a scenario is also consistent with the pronouncement's dissenting discussion, whereby Chairman Beresford posited that many adopters would likely report large increases in net assets as a result of recording previously unrecognized unconditional promises.

followed by Education, Public, Societal Benefit and Religious-related organizations, each of whom report similar average contribution revenue.

Panel B of Table 2 presents means and medians by NTEE classification for the pre-adopters. This group constitutes approximately 26% of the sample.³⁸ With the exception of Arts, Health and Public, Societal Benefit-related organizations, the proportion of observations in each NTEE category (untabulated) is consistent with the full sample proportions in Panel A.³⁹ Similarly, entities in the categories of Education, Health and Human Services comprise approximately 74% of the pre-adopter group. This percentage is approximately 10% less than its equivalent value in Panel A. Except for Arts, Health and Religious-related organizations, the pre-adopters generally report smaller means and medians when compared with their full sample counterparts in Panel A.

Means and medians for the post-adopters, also by NTEE classification, are presented in Panel C of Table 2. Post-adopters represent about 74% of the sample. The proportion of observations in each category (untabulated) approximates its full sample equivalent in Panel A. Organizations classified as either Education, Health or Human Services-related comprise just under 88% of the sub-sample, which is slightly higher than the corresponding percentage for the full

³⁸ The diversity of organizations (based on NTEE classifications) recording or not recording pledges in the pre-regulation period is consonant with the FASB's contention that consistent standards for recognizing contributions were needed.

³⁹ Arts, Health and Public, Societal benefit-related organizations represent approximately 11.5%, 32.9% and 11.9% of the pre-adopter group versus approximately 5.6%, 41.2% and 7% for the full sample.

sample. When compared to their full sample counterparts, post-adopters generally report larger means and medians (except for Arts, Health and Religious-related organizations).

Table 3 presents descriptive statistics for each of the variables used in the analysis, deflated by beginning of year total assets. Panel A reports summary statistics for the full sample period, while Panels B and C report statistics for the pre- and post-FASB regulation periods, respectively. The reported pre- and post-regulation means, medians and standard deviations do not reveal patterns that are materially different from their full sample counterparts in Panel A.

Table 4 presents Pearson and Spearman correlations for the deflated variables. Panels A, B and C report results for the overall, pre- and post-FASB regulation periods, respectively. Correlations are consistent across all three Panels.⁴⁰ Within each Panel, the signs and significance of both the Pearson (below the diagonal) and Spearman (above the diagonal) correlations are consistent, except for total revenues and contribution revenue, total revenues and cash inflows from contributions and grants receivable and pledges receivable. These three pairs of variables produced rank correlations of the opposite sign, suggesting that their relations are not linear. Not surprisingly, total expenses is significantly positively correlated with total revenues. However, total expenses is only weakly correlated

⁴⁰All correlations are highly significant except for (1) the Spearman rank correlations between grants receivable and total revenues, and total expenses and grants receivable, which are insignificant in the overall, pre- and post-FASB regulation periods and (2) the Pearson correlation between pledges receivable and grants receivable, which are significant at p-values of .006, .026 and .091 in the overall, pre- and post-FASB regulation periods, respectively.

with both contribution revenue and cash inflows from contributions. The correlation between contribution revenue and cash inflows from contributions is highest in the pre-regulation period (.982). Since these two highly correlated variables will play a key role in the multivariate regression tests conducted later in this Chapter, some further diagnostics are computed to assess the presence of collinearity. Belsley, Kuh and Welsh (1980) propose a diagnostic tool that evaluates the degree of collinearity in terms of condition numbers (or indices). Indices in excess of twenty suggest serious multicollinearity (Greene, 2000). Untabulated indices computed for contribution revenue and cash inflows from contributions were well below this critical threshold, suggesting that collinearity should not impede the detection of incremental explanatory power in multivariate regression tests. Correlations among all remaining variables are not extreme.

8.2 *Tests of Hypotheses 1 and 2 - Full Sample*

Table 5 presents univariate pooled cross-sectional regression results for the full sample. Panel A reports the results of estimating equation (9). The slope coefficients in the overall, pre-and post-regulation periods are all highly significant in predicting next period's cash inflows from contributions.⁴¹ Reported adjusted R^2 s

⁴¹ The coefficient values reported range from .768 to .797. As previously discussed in Chapter 6, the true time-series behavior of revenues for nonprofit organizations has yet to be documented. However, if the underlying process was in fact more closely associated with a random walk, the aforementioned coefficient values should be closer to their theoretical values of one. Some potential explanations for these deviations include (1) measurement error in computing cash inflows from contributions, (2) insufficient data partitioning, which in turn would exacerbate the presumption of inter-firm homogeneity in cross-sectional regressions and/or (3) a more complex time-series process.

are .635, .636 and .634, respectively, and remain essentially unchanged between the pre- and post-regulation periods.

The results of estimating equation (10) are presented in Panel B of Table 5. The coefficients in the overall, pre- and post-regulation periods are also highly significant, with corresponding adjusted R^2 s of .616, .620 and .607, respectively. These adjusted R^2 s are slightly less than their counterparts in Panel A, suggesting that the Panel A specification (current contribution revenue) has more explanatory power.

To formally discriminate between these two competing models, Vuong's likelihood ratio test for non-nested model selection was employed. Panel C of Table 5 reports positive and highly significant Vuong Z-statistics of 6.26, 5.49 and 3.83, (in the overall, pre- and post-regulation periods, respectively) which indicate that the current cash inflows from contributions specification is consistently rejected in favor of the current revenue specification.⁴²

The findings presented thus far are based on a pooling of observations across organizations and over time. To ensure that reported t-statistics are not overstated due to residual correlation, equations 9 and 10 are estimated by year. Panel A of Table 6 presents the yearly results of estimating equation 9 for the full sample. Overall, the reported slopes are positive, consistent (ranging from .744 to

⁴² To ascertain whether the Z-statistics reported herein were influenced by one or more extreme time periods, Vuong's test was re-computed for each of the seven annual periods. The Z-Statistic (untabulated) was (1) positive in all seven cases and (2) significant in five of seven cases.

.831) and highly significant, with associated adjusted R^2 's ranging from .601 to .687. The post-regulation adjusted R^2 's, when compared to the pre-regulation average adjusted R^2 , remain essentially unchanged. These results suggest that the danger of drawing incorrect inferences due to residual correlation in the pooled time-series analysis appears to be minimal.

Yearly results from estimating equation 10 are presented in Panel B of Table 6. Though the coefficients reported are positive (ranging from .744 to .818) and highly significant, they are slightly less significant than their counterparts in Panel A in six out of seven annual periods. Similarly, the adjusted R^2 's are slightly smaller than their equivalent values in Panel A. Lastly, adjusted R^2 's for forecast years 1996 and 1997 (the post-regulation period) are .590 and .636, respectively, which are .028 below and .018 above the reported pre-regulation average adjusted R^2 of .618. These annual regression results also suggest that residual correlation should not significantly affect inferences drawn from the corresponding pooled time-series analysis.

8.2.1 Summary of Results for Hypotheses 1 and 2 - Full Sample

A comparison of the results in Panels A and B of Table 5 reveals that (1) both specifications report positive and highly significant coefficient values and (2) the adjusted R^2 's for the contribution revenue specification (Panel A) exceed those of the cash inflows from contributions specification (Panel B). Because adjusted R^2 comparisons do not provide statistical evidence that one model is superior to another, Vuong's likelihood ratio test for model selection was employed. The

results in Panel C of Table 5 report positive and highly significant Vuong Z-statistics for the overall, pre- and post-regulation periods, indicating that the current cash inflows from contributions model is consistently rejected in favor of the current contribution revenue model. The aforementioned results are consistent with the assertion that the current contribution revenue specification better predicts next period's cash inflows from contributions. This evidence supports hypothesis 1 and is consistent with the results of DKW, who find earnings to be a better predictor of future cash flows relative to operating cash flows.

Hypothesis 2 asserts that current contribution revenue determined under SFAS No. 116 (the post-regulation period) will better predict next period's cash inflows from contributions. A comparison of post-regulation adjusted R^2 s to their pre-regulation counterparts (Panel A of Table 5) suggests that the associations were unaffected by the change in reporting for unconditional promises to give.⁴³ This evidence is inconsistent with hypothesis 2. There are two potential explanations for this inconsistency. The first relates to data restrictions in the post-regulation period. As previously discussed in Chapter 7, the IRS SOI files used in this study are only currently available through 1997, which limits predictability testing to two years in the post-regulation period. Second, the application of SFAS No. 116 may have aberrantly impacted the determination of contribution revenue for some nonprofit organizations in the initial year of adoption (principally 1995), which would in turn likely impact the post-regulation prediction results. This possible explanation is

⁴³ These results are also consistent with the yearly univariate regression results presented in Table 6.

also consistent with the dissenting discussion in SFAS No. 116, which suggested that some nonprofit organizations would report large increases in net assets in the initial year of adoption.

8.3 *Tests of Hypothesis 3 - Full Sample*

Table 7 reports the results of estimating equation 11 for the full sample. With regard to the pooled cross-section, the slope coefficients for current contribution revenue and current cash inflows from contributions are .597 and .199, respectively, with the former being more significant than the latter.⁴⁴ The yearly multivariate regressions report slopes for current contribution revenue ranging from .398 to .813, all being highly significant. The corresponding slopes for current cash inflows from contributions range from -.004 to .370 and are either significant or highly significant in four of seven annual periods. The significance and magnitude of the current contribution revenue coefficient exceeds that of the current cash inflows from contributions coefficient in each annual period.

With respect to forecast years 1996 and 1997 (the post-regulation period), the slopes are .614 and .398 (current contribution revenue) and .195 and .370 (current cash inflows from contributions), respectively, with both sets of coefficients remaining highly significant in the post-regulation period.

⁴⁴ Reported t-statistics of 48.70 (OLS) and 21.19 [White's] versus 16.06 (OLS) and 7.08 [White's].

8.3.1 *Summary of Results for Hypothesis 3 - Full Sample*

The incremental predictive abilities of current contribution revenue and current cash inflows from contributions are evaluated by estimating equation 11. Incremental information content is assessed by examining the significance of each predictor's slope coefficient. The results in Table 7 suggest that both variables are incrementally useful in predicting future cash inflows from contributions, with current contribution revenue consistently reporting a coefficient of greater magnitude and significance. These results are consistent with hypothesis 3 and support the notion that the superiority of current revenues is not the result of precluding cash inflows from contributions changes from exploiting their negative serial correlation. The results are also consistent with the findings in DKW, who document that earnings are consistently incrementally useful in forecasting future cash flows, while operating cash flows are only moderately useful.

8.4 *Additional Tests*

To investigate whether the results in sections 8.2 and 8.3 are sensitive to calendar period effects and to indirectly assess the impact of SFAS No. 116 due to data limitations in the post-regulation period, two additional tests are performed in this section.

8.4.1 *Tests of Hypothesis 4 - Full Sample*

As previously discussed in Chapters 6 and 7, amounts reported on the tax return under the caption "pledges receivable" serve as a proxy for unconditional promises to give. Hypothesis 4 asserts that reversing the impact of pledges will

reduce the ability of current contribution revenue to predict next period's cash inflows from contributions. To test this hypothesis, univariate and multivariate regressions are re-estimated, substituting pro-forma current contribution revenue (PFR_t) for current contribution revenue (R_t). This pro-forma variable isolates the effect of reversing pledges while leaving all other revenue accruals intact.

Panel A of Table 8 reports the pooled univariate results of regressing future cash inflows from contributions on pro-forma current contribution revenue. A comparison of these results with the results in Panel A of Table 5 documents a slight reduction in explanatory power for the overall and pre-regulation periods, with virtually no change in the post-regulation period. Panel B of Table 8 uses Vuong's likelihood ratio test to further assess these competing specifications. The first section of Panel B evaluates current contribution revenue (R) and pro-forma current contribution revenue (PFR) as competing specifications. The Z-statistic for the overall period is positive and marginally significant. The Z-statistic for the pre-regulation period is positive and significant, but insignificant in the post-regulation period. The second section of Panel B compares pro-forma current contribution revenue (PFR) and current cash inflows from contributions (CIC) as competing models. Here the Z-statistic for the overall period is positive and significant. The Z-statistic for the pre-regulation period is positive and marginally significant and positive and highly significant in the post-regulation period. Comparing the second set of results (PFR v. CIC) with Panel C of Table 5 reveals a substantial reduction

in Z-statistic magnitude and significance for the overall and pre-regulation periods, with the post-regulation period remaining highly significant in both Panels.

Table 9 reports yearly univariate regression results for the pro-forma current contribution specification. When compared with the unadjusted results in Panel A of Table 6, the magnitude and significance of the pro-forma current contribution revenue coefficient, as well as its related adjusted R^2 , decreases in six of seven annual regressions.⁴⁵

Table 10 reports full sample multivariate results of regressing future cash inflows from contributions on pro-forma current contribution revenue and current cash inflows from contributions. A comparison of these results with their unadjusted counterparts in Table 7 highlights an overall reduction in explanatory power for the pro-forma regressions. With regard to the pooled cross-section, the current pro-forma contribution revenue coefficient decreases in magnitude and significance, while the current cash inflows from contributions coefficient experiences an increase in magnitude and significance. The annual regressions present similar results in four of seven annual periods.⁴⁶

8.4.2 *Summary of Results for Hypothesis 4 - Full Sample*

Univariate and multivariate regressions were re-estimated for the full sample using a pro-forma surrogate (which excludes the effects of pledges) for

⁴⁵ 1997 is the only year in which the current pro-forma contribution revenue coefficient and the adjusted R^2 increase over their unadjusted counterparts.

⁴⁶ Both coefficients decrease in significance in 1996 and 1997 (the post-regulation period) when compared to their unadjusted counterparts in Table 7.

current contribution revenue. Overall, the pro-forma results, when compared to their unadjusted counterparts, document a general reduction in the predictive power of pro-forma current contribution revenue. The evidence concerning the post-regulation period impact of reversing pledges is equivocal, which, as previously stated, is conjectured to result from initial adoption effects and data restrictions in the post-regulation period.

These findings (1) are consistent with hypothesis 4, (2) provide additional support for hypotheses 1 and 3, (3) offer weak indirect evidence supporting hypothesis 2, and (4) suggest that calendar period effects, if any, were minimal.

8.4.3 Partitioning Based on Pre-Adopter and Post-Adopter Classification

As previously documented in Sections 8.2.1 and 8.3.1, data availability restrictions makes it difficult to fully assess the post-regulation impact of the Standard. In this section, sample organizations are segregated into sub-groups based on their pre-adopter or post-adopter status. Tests are then replicated on both sub-samples. By partitioning the data in this fashion, the impact of reversing pledges can be isolated and fully exploited in both the pre- and post-regulation periods.

8.4.3.1 Pre-Adopter Group

Table 11 presents univariate pooled cross-sectional regression results for the pre-adopters. Panel A reports the results of regressing future cash inflows from contributions on current contribution revenue. The slopes for all three periods are

positive and highly significant, with the post-regulation period adjusted R^2 increasing by approximately .05 over the pre-regulation amount. Panel B of Table 11 reports the results of regressing future cash inflows from contributions on current cash inflows from contributions. When compared with the results in Panel A, all three periods report a reduction in coefficient significance and adjusted R^2 values. The results of regressing future cash inflows from contributions on pro-forma current contribution revenue are presented in Panel C. When compared with the results in Panel A, there is an across-the-board reduction in coefficient significance, however, the reduction is not as pronounced as the reduction observed in the Panel B comparisons. Similarly, the adjusted R^2 s are lower in the overall and pre-regulation periods, with no change documented in the post-regulation period. Panel D of Table 11 uses Vuong's likelihood ratio test to further assess these competing specifications. The first set of results indicates that the cash inflows from contributions specification is rejected in favor of the contribution revenue specification in all three periods. The second set of results indicates that the pro-forma contribution model is rejected in favor of the contribution revenue model in the overall and pre-regulation periods, but not in the post-regulation period. The last set of results compares pro-forma contribution revenue and cash inflows from contributions as competing specifications. Here the cash inflows from contributions specification is rejected in favor of the pro-forma specification only in the post-regulation period. The overall and pre-regulation period Z-statistics are insignificant.

Table 12 reports yearly univariate cross-sectional regression results for the pre-adopters. Panel A presents coefficients and adjusted R^2 s from estimating equation 9, Panel B presents similar information from estimating equation 10, and Panel C re-estimates equation 9 using pro-forma current contribution revenue as the predictor variable. The three Panels present consistently positive and highly significant slopes, with an overall reduction in explanatory power reported for the cash and pro-forma regressions when compared against Panel A.⁴⁷ Viewing all three Panels collectively, post-regulation adjusted R^2 s increase over their pre-regulation averages in five of the six years presented.

Table 13 presents multivariate regression results for the pre-adopter group. Panel A reports the results of estimating equation 11. With regard to the pooled cross-section, the coefficients for current contribution revenue and current cash inflows from contributions are .655 and .182, respectively,⁴⁸ with the former being more significant than the latter.⁴⁹ The annual multivariate regressions report current contribution revenue coefficients ranging from .381 to .781, all of which are highly significant. The corresponding current cash inflows from contributions coefficients range from .057 to .433, with five of seven periods being either

⁴⁷ The significance of the pro-forma current contribution revenue and cash inflows from contributions coefficients decrease in six of seven annual regressions. 1997 is the only year in which the adjusted R^2 increases.

⁴⁸ Compared to the pooled full sample multivariate regression results in Table 7, the difference in slope values for the pre-adopter group is more pronounced, which suggests that pledges are useful in mitigating negative serial correlation in cash flows.

⁴⁹ Reported t-statistics of 35.58 (OLS) and 17.36 [White's] versus 9.73 (OLS) and 4.80 [White's].

significant or marginally significant. With the exception of 1997, the current contribution revenue coefficient exceeds the current cash inflows from contributions coefficient in each period presented.

Panel B of Table 13 re-estimates equation 11 by substituting pro-forma current contribution revenue for current contribution revenue. A comparison of these results to their unadjusted counterparts in Panel A reveals an overall reduction in explanatory power for the pro-forma regressions. The significance of the pro-forma current contribution revenue coefficient decreases in both the pooled cross-section and in six of seven annual regressions, with the current cash inflows from contributions coefficient increasing in significance in both the pooled cross-section and in six of seven annual regressions.⁵⁰

8.4.3.2 *Summary of Results for Pre-Adopters*

Additional tests are conducted exclusively on the pre-adopter group to further corroborate the results in sections 8.2 and 8.3. The results suggest that the current revenue specification provides more explanatory power than the current cash inflow from contributions specification. Post-regulation comparisons present evidence that is inconsistent with the prediction that pre-adopters were unaffected by the mandated recognition criteria of SFAS No. 116 in the post-regulation period. One possible explanation for this result is that pre-adopters lowered their thresholds

⁵⁰ 1997 is the only year in which the current pro-forma contribution revenue coefficient increases over its unadjusted counterparts.

for recognition after the effective date of SFAS No. 116. This theory is consistent the FASB's assertion that some organizations delayed recognition (during the pre-regulation period) under the guise of conservatism, which would potentially omit relevant information and introduce bias into the financial reporting process.

Both current contribution revenue and current cash inflows from contributions are incrementally useful in predicting next period's cash inflows from contributions, with the former being more significant than the latter. When the impact of pledges is reversed, there is a general reduction in coefficient magnitude, significance and adjusted R^2 's for the pro-forma specifications. Overall, these additional test results (1) are consistent with the results for the full sample, (2) suggest that calendar period effects, if any, were minimal and (3) indirectly support the conjectured impact of recognizing unconditional promises to give in the post-regulation period.

8.4.3.3. *Post-Adopter Group*

Table 14 presents univariate pooled cross-sectional regression results for the post-adopters. Panel A reports the results of regressing future cash inflows from contributions on current contribution revenue. The slopes for all three periods are positive and highly significant, with the post-regulation period adjusted R^2 decreasing slightly in relation to the pre-regulation amount. When compared to the full sample and pre-adopter results in Tables 5 and 11 (Panel A in both cases), this group reports much lower adjusted R^2 's, which suggests that pledges appear to affect the association between future cash inflows from contributions and current

contribution revenue. Panel B of Table 14 reports the results of regressing future cash inflows from contributions on current cash inflows from contributions. All three periods report a reduction in adjusted R^2 values when compared to the results in Panel A. The coefficient's magnitude and significance decreases slightly in the overall and pre-regulation periods, and increases modestly in the post-regulation period. The results of regressing future cash inflows from contributions on pro-forma current contribution revenue are presented in Panel C of Table 14.⁵¹ No discernible changes are noted when the Panel C results are compared with the post-regulation results in Panel A. Panel D of Table 14 uses Vuong's likelihood ratio test to further assess these competing specifications. The first set of results compares the current contribution revenue specification against the current cash inflows from contributions specification. The Z-statistics in the overall and pre-regulation periods are positive and significant, which indicate that the current cash inflows from contributions model is rejected in favor of the current contribution revenue model. When compared with the full sample and pre-adopter results in Tables 5 and 11 (Panels C and D, respectively), these Z-statistics are generally smaller in magnitude and significance. The results for the post-regulation period are not significant. The second set of results in Panel D compare current contribution revenue and pro-forma current contribution revenue as competing specifications in the post-regulation period. Here the Z-statistic is not significant. The last set of

⁵¹ The pro-forma results presented are limited to the post-adoption period, since by definition post-adopters did not record pledges in any of the five years preceding the effective date of SFAS No. 116.

results in Panel D compare pro-forma contribution revenue against cash inflows from contributions for the post-regulation period. The Z-statistic for this comparison is also insignificant.

Table 15 reports annual univariate cross-sectional regression results for the post-adopters. Panel A presents coefficients and adjusted R^2 s from estimating equation 9, Panel B presents similar information from estimating equation 10, and Panel C re-estimates equation 9 using pro-forma current contribution revenue as the predictor variable in the post-regulation period. All three Panels present consistently positive and highly significant slope coefficients. A comparison of Panel B with Panel A indicates an across-the-board reduction in explanatory power. When the impact of pledges are reversed (Panel C versus Panel A), no change in explanatory power is noted.

Table 16 presents multivariate regression results for the post-adopter group. Panel A reports the results of estimating equation 11. With regard to the pooled cross-section, the coefficients for current contribution revenue and current cash inflows from contributions are .542 and .227, respectively,⁵² with the former being more significant than the latter.⁵³ The annual multivariate regressions report current contribution revenue coefficients ranging from .406 to .964, all of which are highly significant. The corresponding current cash inflows from contributions

⁵² Compared to the pooled full sample and pre-adopter multivariate regression results in Tables 7 and 13, respectively, the difference in slope values for the post-adopters is less pronounced. Footnote 48 provides the intuition for this result.

⁵³ Reported t-statistics of 32.90 (OLS) and 13.95 [White's] versus 13.73 (OLS) and 5.91 [White's].

coefficients range from -.204 to .341, with four of seven periods either significant or marginally significant. The current contribution revenue coefficient exceeds the current cash inflows from contributions coefficient in each period presented. Panel B of Table 16 reports multivariate results of regressing future cash inflows from contributions on pro-forma current contribution revenue and current cash inflows from contributions for the post-regulation period. The magnitude and significance of the pro-forma current revenue slope exceeds the slope coefficient for current cash inflows from contributions for each year in the post-regulation period.

8.4.3.4 Summary of Results for Post-Adopters

To provide further support for the results in sections 8.2 and 8.3, additional tests were conducted exclusively on post-adopter organizations. The results generally support the notion that (1) current revenues are more closely associated with future cash inflows from contributions than current cash inflows from contributions and (2) calendar period effects were minimal. Though the results are also consistent with those of the full sample and the pre-adopter group, post-adopters report smaller adjusted R^2 s for the current revenue specification, suggesting that pledges affect the association between future cash inflows and current revenues. Results in the post-regulation period are inconsistent with hypothesis 2, which, as has been previously stated, is posited to result from data restrictions in the post-regulation period and the initial adoption impact of the Standard.

9. Conclusions and Implications for Future Research

This dissertation investigates the impact of accounting regulation on nonprofit revenue recognition, an area that has, to date, remained virtually unexplored in the literature. Specifically, the study examines SFAS No. 116's requirement that nonprofit organizations recognize unconditional promises to give as assets and revenues in the year promises are received. It adopts and modifies a model used by Dechow, Kothari and Watts (1998) and hypothesizes that recognizing unconditional promises to give as assets and revenues in the period received enhances the ability of current revenues to predict future cash inflows. Test results are consistent with this prediction. They are also robust to an alternative pro-forma specification and appear unaffected by calendar period effects.

This study makes several contributions to the literature. First, it develops a model that describes the relations between revenues, accruals and cash inflows, which implies that accrual-based revenues better predicts future cash inflows relative to cash-based revenues. The model is then used to construct tests which

empirically exploit the accrual process and its ability to enhance predictions of future cash inflows - one of several important factors used in assessing an entity's ability to sustain future operations. Second, it documents that by recognizing unconditional promises to give as assets and revenues in the period received, nonprofit organizations provide useful information about their probable future cash inflows. Third, the study provides further insight into the revenue recognition process of nonprofit organizations. Fourth, the study's results are consistent with the FASB's endorsement of an integrated conceptual framework for all types of reporting entities. They affirm that many of the key conventions and elements embodied in the FASB Concepts Statements are applicable to nonprofits as well. Fifth, the study provides useful information to standard setters in establishing guidelines that improve the usefulness of financial reporting for nonprofits.

There are some limitations in this dissertation which warrant further discussion. Data constraints, particularly those applicable to the post-regulation period, imposed restrictions on the study. Because there are no comprehensive financial statement databases available for nonprofits, IRS Statistics on Income files (currently available through 1997) are used as an alternative. The SOI files, though adequate and reliable in many respects, do not include all of the information typically disclosed in the basic financial statements and accompanying notes. Additionally, because SFAS No. 116 became generally effective for years beginning after December 15, 1994, more stringent sample selection criteria were needed to ensure consistent testing in the post-regulation period. Use of these

criteria, however, creates a bias toward larger organizations, which in turn restricts the generalizability of the results.

Though the study's test results support the predictions posited in the study, some unresolved issues still remain. As discussed in Chapters 6 and 8, the true time-series behavior of revenues for nonprofit organizations has yet to be documented empirically. To extent that this process is well approximated by a random walk, the slope coefficients estimated in Chapter 8 for equation 9 (univariate current contribution revenue specification) should be closer to their theoretical values of one. Some potential explanations for this divergence include (1) measurement error, particularly with regard to the reconstruction of cash inflows from contributions using Form 990 tax return data, (2) insufficient data-partitioning, which would exacerbate the presumption of inter-firm homogeneity in the cross-sectional regressions, and/or (3) a more complex time-series process.

The full sample post-regulation results for the current contribution revenue specification are, for the most part, unaffected by the Standard's mandated change in reporting for unconditional promises to give. This evidence, though inconsistent with hypothesis 2, is conjectured to result from initial adoption effects and data restrictions in the post-regulation period. Additional post-regulation testing makes for a natural extension of this study as more data becomes readily available. With regard to the pre-adopter group, there is no obvious reason for the post-regulation increase in explanatory power for the current contribution revenue specification. One possible explanation is that pre-adopters lowered their thresholds

for recognition after the effective date of SFAS No. 116. This theory is consistent with the FASB's assertion that some organizations justified deferring revenues beyond the appropriate recognition point under the guise of conservatism. Further inquiries into this threshold theory, as well as reasons why pre-adopters voluntarily chose to recognize pledges as assets and revenues during the pre-regulation period would make for interesting extensions of this study.

This dissertation has implications for several other lines of future research, some of which are described below. First, an ancillary concern expressed by many in the nonprofit sector was that the recognition of multiyear promises to give would adversely impact trends in long-term giving. In this regard, another promising line of further inquiry would be to empirically test (from the donees' perspective) the impact of SFAS No. 116's revenue recognition guidelines on short- and long-term giving trends. This line of research could also incorporate a time-series analysis of selected nonprofit financial variables. Second, the model developed in section 6.1 is based on a single organization and makes several simplifying assumptions in order to parsimoniously convey insight into the relations between revenues, accruals and cash inflows. These simplifying assumptions include (1) the complete collection of accounts receivable in the next period, (2) an absence of noncash transactions, and (3) a relatively basic time-series process. Future studies may look to address these and other items as part of a more comprehensive model. Third, future research may wish to consider conducting tests after partitioning by NTEE classification, as well as substituting or supplementing

the SOI data with financial statement data. Fourth, future research may look to apply the approach used in this study to other industries or groups for which market prices are not readily ascertainable.

In summary, this dissertation raises a number of promising and exciting avenues for future research.

Appendix 1

Derivations of Model Equations (7) and (8), Rankings of Predictors Based on the Magnitude of Mean Squared Error (MSE) Derived Under the Model

This appendix contains detailed derivations of model equations (7) and (8). It also includes an analytical ranking of the predictors used in this study. Rankings are determined based on the magnitude of each predictor's Mean Squared Error (MSE) as derived under the model.

A.1 Summary of the Model

The model assumes that revenues (contributions), denoted R_t in period t , follows an integrated moving average (IMA) process of the following form:

$$R_t = R_{t-1} + \varepsilon_t - \theta\varepsilon_{t-1} \quad \text{or}$$

$$R_t - R_{t-1} = (\varepsilon_t - \theta\varepsilon_{t-1}) \quad \text{Equation (1)}$$

where θ is the moving average coefficient and ε_t is a random variable with variance σ^2 and $\text{cov}(\varepsilon_t, \varepsilon_{t-\tau}) = 0$ for $|\tau| > 0$. This family of stochastic processes yields a random walk when $\theta=0$ and a mean reverting process when $\theta=1$.

The relationship between revenues (R) and cash inflows from contributions (CIC) is not one-to-one, so cash inflows will differ from revenues by the change in accounts receivable, or accruals, denoted as:

$$\Delta AR_t \text{ or } \alpha(R_t - R_{t-1}) \quad \text{Equation (4)}$$

where α is an intertemporal constant and all uncollected revenues from period t are collected in period $t+1$. R and CIC will differ based on the following relation:

$$CIC_t = R_t - \Delta AR_t \quad \text{or}$$

$$CIC_t = R_t - \alpha(R_t - R_{t-1}) \quad \text{Equation (5)}$$

$$R_t = CIC_t + \alpha(R_t - R_{t-1}) \quad \text{Equation (6)}$$

or

$$R_t = CIC_t + \alpha(\epsilon_t - \theta\epsilon_{t-1})$$

or

$$CIC_t = R_t - \alpha(\epsilon_t - \theta\epsilon_{t-1})$$

The aforementioned relation holds for period $t+1$:

$$CIC_{t+1} = R_{t+1} - \alpha(R_{t+1} - R_t) \quad \text{Equation (5) at } t+1$$

$$R_{t+1} = CIC_{t+1} + \alpha(R_{t+1} - R_t) \quad \text{Equation (6) at } t+1$$

A.2 Derivation of Equation (7)

Next period's expected cash inflows from contributions, CIC_{t+1} , can be derived by taking expectations of equation 5 at time $t+1$, conditional on time t information, as follows:

$$E_t[CIC_{t+1}] = E_t[R_{t+1}] - E_t[\alpha(\epsilon_{t+1} - \theta\epsilon_t)]$$



$$0$$

$$E_t[CIC_{t+1}] = E_t[R_{t+1}] + \alpha\theta\epsilon_t$$

Substituting for $E_t[R_{t+1}]$ above using equation 1 at $t+1$ (or $R_t + \varepsilon_{t+1} - \theta\varepsilon_t$), yields:

$$E_t[CIC_{t+1}] = E_t[R_t + \varepsilon_{t+1} - \theta\varepsilon_t] + \alpha\theta\varepsilon_t$$

↓

0

$$E_t[CIC_{t+1}] = R_t - \theta\varepsilon_t + \alpha\theta\varepsilon_t$$

Equation (7)

The essential intuition for equation 7 is as follows. If $\theta = 0$, then the series follows a random walk, which suggests that last period's revenues is an unbiased predictor of next period's cash inflows from contributions (CIC_{t+1}). This is because current revenues (R_t) includes the change in the accounts receivable component, which will be collected in the next period. If $0 < \theta \leq 1$, then next period's cash inflows from contributions (CIC_{t+1}) will be predictably low (high), or biased, if the current period's revenue change is positive (negative). This occurs because current revenues (R_t) is modified to exclude a portion of the change in the accounts receivable component.

A.3 *Derivation of Equation (8)*

Equation 8 is derived by re-stating the RHS of equation 7 in terms of CIC. This is accomplished by substituting for R_t (using equation 6), which yields:

$$E_t[CIC_{t+1}] = R_t - \theta\varepsilon_t + \alpha\theta\varepsilon_t \quad \text{Equation (7)}$$

$$E_t[CIC_{t+1}] = CIC_t + \alpha\varepsilon_t - \alpha\theta\varepsilon_{t-1} - \theta\varepsilon_t + \alpha\theta\varepsilon_t \quad \text{Equation (8)}$$

The intuition behind equation 8 can be summarized as follows. If $\theta = 0$, next period's cash inflows from contributions (CIC_{t+1}) will be predictably low (high), or biased, if last period's revenue shock was negative (positive). This is because current cash inflows from contributions includes last period's uncollected current revenue shock (AR_{t-1} or $\alpha\epsilon_{t-1}$). If $0 < \theta \leq 1$, next period's prediction of cash inflows from contributions will again be biased, the direction of which will be a function of the sign and magnitude of the current and prior period's revenue shocks.

A.4 *Mean Squared Error*

One can also compare the predictive abilities of equations 7 and 8 in terms of mean squared error (MSE). Since MSE considers the bias and variance of each predictor, predictive ability can be ranked and assessed based on the respective magnitude of each predictor's MSE. MSE can be computed for each predictor by substituting for $E_t[CIC_{t+1}]$ in the following formula:

$$MSE = \text{Var}(CIC_{t+1} - E_t[CIC_{t+1}])$$

A.4.1 *MSE - Equation 7 as the Predictor*

As described in section A.2, equation 7 suggests that current revenues (R_t), adjusted for the effects of the current revenue shock and uncollected portion of the current revenue shock (which are known realizations at time t), is the best predictor of next period's cash inflows from contributions (CIC_{t+1}). In this case, the $t+1$ error terms (which were set equal to zero in developing expectations for

equation 7) represent the relevant errors for this predictor. These errors are summarized as follows:

$$-\alpha\epsilon_{t+1} + \epsilon_{t+1} \quad \text{or} \quad (1 - \alpha)\epsilon_{t+1}$$

Since alpha is constant and ϵ is assumed to be distributed with variance σ^2 and $\text{cov}(\epsilon_t, \epsilon_{t-\tau}) = 0$ for all $|\tau| > 0$, MSE related to Equation 7 can be expressed as follows:

$$\text{MSE}_{\text{BEST}} = (1 - \alpha)^2 \sigma^2$$

A.4.2 *MSE - R_t Only as the Predictor*

Using revenues only at time t to predict next period's cash inflows from contributions introduces additional elements of noise (when compared with the MSE_{BEST} case described in section A.4.1) due to the omission of two observable period t revenue shocks. These omitted errors are denoted by the last two terms of equation 7, or:

$$-\theta\epsilon_t + \alpha\theta\epsilon_t \quad \text{or} \quad \theta(1 - \alpha)\epsilon_t$$

Since both alpha and theta are constants and ϵ is assumed to be distributed with variance σ^2 and $\text{cov}(\epsilon_t, \epsilon_{t-\tau}) = 0$ for all $|\tau| > 0$, these errors can be expressed as:

$$\theta(1 - \alpha)\sigma^2$$

Combining the above expression with the error computed in A.4.1 for the MSE_{BEST} case yields:

$$MSE_{Rt} = (1 - \alpha)^2 \sigma^2 + \theta(1 - \alpha)^2 \sigma^2 \text{ or}$$

$$MSE_{Rt} = (1 + \theta - \alpha - \alpha\theta)^2 \sigma^2 \text{ or}$$

$$MSE_{Rt} = (1 + \theta)^2 (1 - \alpha)^2 \sigma^2$$

A.4.3 *MSE - Equation 8 as the Predictor*

Using cash inflows from contributions at time t as a predictor of CIC_{t+1} further confounds the prediction process. When compared with the MSE_{BEST} case in section A.4.1, there are four additional elements of errors that must be considered - two emanating from period t , and two from period $t-1$. These errors are summarized as follows: (note: the last two terms were previously identified in section A.4.2)

$$\alpha\epsilon_t - \alpha\theta\epsilon_{t-1} - \theta\epsilon_t + \alpha\theta\epsilon_t \text{ or}$$

$$\alpha\epsilon_t - \theta\epsilon_t + \alpha\theta\epsilon_t - \alpha\theta\epsilon_{t-1} \text{ or}$$

$$(\alpha - \theta + \alpha\theta)\epsilon_t + \alpha\theta\epsilon_{t-1}$$

Since both alpha and theta are constants and ϵ is assumed to be distributed with variance σ^2 and $cov(\epsilon_t, \epsilon_{t-\tau}) = 0$ for all $|\tau| > 0$, these additional errors can be expressed as:

$$(\alpha - \theta + \alpha\theta)\sigma^2 + (\alpha\theta)\sigma^2$$

Combining the above terms with the error computed in section A.4.1 for the MSE_{BEST} case yields:

$$MSE_{CICt} = (1 - \alpha)^2 \sigma^2 + (\alpha - \theta + \alpha\theta)^2 \sigma^2 + (\alpha\theta)^2 \sigma^2 \text{ or}$$

$$MSE_{CICt} = (1 - \alpha)^2 \sigma^2 + (\alpha - \theta + 2\alpha\theta)^2 \sigma^2 \text{ or}$$

$$MSE_{CICt} = (1 - \theta + 2\alpha\theta)^2 \sigma^2$$

A.4.4 *Rankings Based on the Magnitude of MSE*

The predictive abilities of equation 7, revenues at time t , and equation 8 can be assessed by examining the magnitude of each predictor's MSE. To summarize, the MSE (as derived under the model) for each is:

$$MSE_{BEST} = (1 - \alpha)^2 \sigma^2$$

$$MSE_R = (1 + \theta)^2 (1 - \alpha)^2 \sigma^2$$

$$MSE_{CIC} = (1 - \theta + 2\alpha\theta)^2 \sigma^2$$

The following table summarizes the results of computing MSE rankings when extreme values are assigned to alpha and theta (listed by descending values of alpha for illustrative purposes only):

α	θ	Overall Rankings	MSE_R v. MSE_{CIC}
1	0	$MSE_{BEST} = MSE_R < MSE_{CIC}$	<
1	1	$MSE_{BEST} = MSE_R < MSE_{CIC}$	<
.5	0	$MSE_{BEST} = MSE_R < MSE_{CIC}$	<
.5	1	$MSE_{BEST} < MSE_R = MSE_{CIC}$	=
0	0	$MSE_{BEST} = MSE_R = MSE_{CIC}$	=
0	1	$MSE_{CIC} < MSE_{BEST} < MSE_R$	>

These rankings are useful in developing some fundamental intuition about the three prediction equations. However, to fully capture this essential intuition, it becomes important to reiterate the roles played by alpha and theta in the model. Alpha represents an intertemporal constant, which is used to determine the uncollected portion of accounts receivable (accruals). This accounts receivable accrual is assumed collected in the next period. Since the magnitude of the difference between revenues and cash inflows from contributions in each period will increase (1) as alpha increases and (2) the larger the change in revenues, the value of alpha, in a sense, functions as a smoothing mechanism. Theta represents the moving average coefficient from an IMA process.

In the MSE_{BEST} case, increases in alpha monotonically decrease error and are unaffected by changes in theta, which is consistent with accruals mitigating timing problems related to cash inflows.

With respect to MSE_R , increases in alpha again serve to reduce error, despite their interaction with theta. However, MSE_R will always be greater than MSE_{BEST} by a factor of $(1 + \theta)^2$ for all $\theta > 0$. Again, this result is consistent with accruals offsetting timing problems related to inflows of cash.

With regard to MSE_{CIC} , error is again a function of both alpha and theta. As the table suggests, except in certain unique circumstances, MSE_{CIC} produces larger errors relative to MSE_R and MSE_{BEST} . Exploring these special circumstances in greater detail reveals that in situations where alpha is equal to .5, error is solely a function of theta. Thus, an alpha value of .5, coupled with a theta value of 1 (mean

reverting process), will yield equivalent errors for MSE_R and MSE_{CIC} . In the extreme, when alpha equals 0 and theta equals 1, MSE_{CIC} produces the smallest error relative to MSE_R and MSE_{BEST} . These results are consistent with the notion that accruals are needed to mitigate associated timing problems. As suggested by the model, increases in alpha will also facilitate this process.

Appendix 2

Non-Nested Model Selection and Relative Information Content Studies

This appendix discusses several approaches to non-nested model selection, all within the context of relative information content comparisons. Relative information content comparisons are used to assess whether a particular model or metric provides greater information content than another. Questions of relative information content can arise within a variety of different accounting contexts. Some of the more noteworthy applications include either/or choices surrounding domestic standard-setting issues, the harmonization of international accounting standards, and questions related to managerial accounting choice.

A number of early accounting studies have assessed relative information content by comparing the adjusted R^2 s of competing models. Here the model with the highest adjusted R^2 is deemed to be the "superior" model. However, simply comparing adjusted R^2 s without considering tests for statistical significance is problematic.

Alternatively, some researchers have augmented their analysis using the J-test developed by Davidson and MacKinnon (1981). The J-test approaches model selection using the "encompassing principle", whereby one model is considered better than another if it can account for the more important characteristics of its competitors. Thus, the J-test focuses on the maintained model's ability to explain

the principal features of its competing model.⁵⁴ Where two competing models are similar or the data are not very informative, the J-test may prove to be equivocal, i.e., not allow one to conclude that one model is superior to another (MacKinnon, 1982). Thus, under these circumstances, the J-test cannot rank the competing specifications, making it a less attractive statistical test.

Vuong (1989) has proposed a likelihood ratio test for non-nested model selection that is well suited for relative information content studies.⁵⁵ Vuong (1989) has derived the distribution of the likelihood ratio statistic without assuming under the null hypothesis that either model is closer to the true data-generating process. The principal advantage of Vuong's test is that it is bidirectional, even in circumstances where both competing models have explanatory power. Thus, Vuong's test is considered a more powerful statistical tool since it allows for the rejection of one model in favor of another, where others tests (like the J-test) would not. Implementing Vuong's test "requires estimation of both models and computation of both sets of predicted probabilities" (Greene, 2000). Large positive test statistics (Z-statistics or Z-scores) favor model 1 over model 2, whereas small or negative test statistics favor model 2 over model 1.

⁵⁴ For a more detailed review of this area, see Mizon and Richard (1986).

⁵⁵ See Dechow (1994) - Appendix 2 for a detailed discussion of Vuong's likelihood ratio test.

Table 1
Descriptive Statistics - Selected Variables Used in the Analysis^a
in \$000's

Panel A: 1990 to 1997 (Full sample)

<u>Variable</u>	<u>Mean</u>	<u>Median</u>	<u>Standard Deviation</u>	<u>Minimum</u>	<u>Maximum</u>
Total revenues	59,463	19,841	145,285	541	4,549,764
Total assets	89,191	31,831	276,777	5,005	15,303,757
Contribution revenue	8,128	1,584	34,200	0	929,961
Cash inflows from contributions ^b	8,110	1,675	33,850	0	922,080
Total expenses	54,204	17,599	132,322	1,002	4,320,608
N = 43,461					

^aObservations falling in the top or bottom 1% of either deflated total revenues, deflated contribution revenue or deflated cash inflows from contributions are excluded.

^bCash Inflows From Contributions_{*t*} = Contribution Revenue_{*t*} + PLGE_{*t-1*} - PLGE_{*t*} + GRTREC_{*t-1*} - GRTREC_{*t*} - FUTSUP_{*t-1*} + FUTSUP_{*t*}

Table 1 contd.
Descriptive Statistics - Selected Variables Used in the Analysis^a
in \$000's

Panel B: 1990 to 1994 (Pre-FASB regulation)

<u>Variable</u>	<u>Mean</u>	<u>Median</u>	<u>Standard Deviation</u>	<u>Minimum</u>	<u>Maximum</u>
Total revenues	55,569	18,916	136,909	541	4,549,764
Total assets	79,395	29,245	231,526	5,005	9,143,853
Contribution revenue	7,354	1,450	31,075	0	810,659
Cash inflows from contributions ^b	7,445	1,547	31,082	0	806,021
Total expenses	51,738	17,213	128,745	1,002	4,295,118
N = 26,275					

^a Observations falling in the top or bottom 1% of either deflated total revenue, deflated contribution revenue or deflated cash inflows from contributions are excluded.

^b Cash Inflows From Contributions_{*t*} = Contribution Revenue_{*t*} + PLGE_{*t-1*} - PLGE_{*t*} + GRTREC_{*t-1*} - GRTREC_{*t*} - FUTSUP_{*t-1*} + FUTSUP_{*t*}

Table 1 contd.
Descriptive Statistics - Selected Variables Used in the Analysis^a
in \$000's

Panel C: 1995 to 1997 (Post-FASB regulation)

<u>Variable</u>	<u>Mean</u>	<u>Median</u>	<u>Standard Deviation</u>	<u>Minimum</u>	<u>Maximum</u>
Total revenues	65,416	21,512	157,049	623	4,467,181
Total assets	104,167	35,787	333,775	5,042	15,303,757
Contribution revenue	9,311	1,830	38,462	0	929,961
Cash inflows from contributions ^b	9,126	1,885	37,669	0	922,080
Total expenses	57,975	18,178	137,529	1,002	4,320,608
N = 17,186					

^a Observations falling in the top or bottom 1% of either deflated total revenue, deflated contribution revenue or deflated cash inflows from contributions are excluded.

^b Cash Inflows From Contributions_t = Contribution Revenue_t + PLGE_{t-1} - PLGE_t + GRTREC_{t-1} - GRTREC_t - FUTSUP_{t-1} + FUTSUP_t

Table 2
Descriptive Statistics - Selected Variables Used in the Analysis by NTEE Classification^a
in \$000's
Panel A: NTEE major groups A, B, C & D, E through H, I through P (Full sample)

NTEE Code by Major Group	<u>Arts</u>	<u>Education</u>	<u>Environment & Animals</u>	<u>Health</u>	<u>Human Services</u>
	A	B	C & D	E through H	I through P
<u>Total revenues</u>					
Mean	20,601	57,017	19,837	91,382	15,892
Median	9,490	17,350	10,866	46,083	8,745
<u>Total assets</u>					
Mean	54,178	129,100	47,260	98,512	31,111
Median	26,519	33,497	26,237	47,742	17,706
<u>Contribution revenue</u>					
Mean	9,755	14,530	10,130	3,798	3,726
Median	3,812	3,803	3,969	407	903
<u>Cash inflows from contributions^b</u>					
Mean	9,443	14,272	9,861	3,843	4,063
Median	3,802	3,722	3,874	435	1,143
<u>Total expenses</u>					
Mean	16,825	48,212	15,865	86,434	14,704
Median	7,160	14,933	8,183	43,669	8,068
N =	2,442	11,758	668	17,936	6,854

^a Observations falling in the top or bottom 1% of either deflated total revenue, deflated contribution revenue or deflated cash inflows from contributions are excluded.

^b Cash Inflows From Contributions_{*i*} = Contribution Revenue_{*i*} + PLGE_{*i*} - PLGE_{*i-1*} + GRTREC_{*i*} - GRTREC_{*i-1*} - FUTSUP_{*i*} + FUTSUP_{*i-1*}

Table 2 contd.
Descriptive Statistics - Selected Variables Used in the Analysis by NTEE Classification^a
in \$000's
Panel A contd.: NTEE major groups Q, R through W, X, Y, Z (Full sample)

NTEE Code by Major Group	<u>Int'l</u>	<u>Public, Societal Benefit</u>	<u>Religious Related</u>	<u>Mutual Membership</u>	<u>Unknown</u>
	Q	R through W	X	Y	Z
<u>Total revenues</u>					
Mean	33,555	26,531	24,109	22,897	50,527
Median	18,640	12,180	8,574	9,528	39,254
<u>Total assets</u>					
Mean	59,120	56,452	50,898	58,714	65,813
Median	27,497	25,867	21,597	28,990	67,685
<u>Contribution revenue</u>					
Mean	27,076	14,466	13,666	6,719	1,323
Median	13,372	5,878	3,921	4,706	260
<u>Cash inflows from contributions^b</u>					
Mean	27,246	14,489	13,566	6,689	1,336
Median	13,452	5,813	3,937	4,765	260
<u>Total expenses</u>					
Mean	30,923	22,024	20,299	18,457	50,560
Median	15,866	9,157	6,507	6,962	39,291
N =	340	3,066	283	106	8

^a Observations falling in the top or bottom 1% of either deflated total revenue, deflated contribution revenue or deflated cash inflows from contributions are excluded.

^b Cash Inflows From Contributions_{*t*} = Contribution Revenue_{*t*} + PLGE_{*t-1*} - PLGE_{*t*} + GRTREC_{*t-1*} - GRTREC_{*t*} - FUTSUP_{*t-1*} + FUTSUP_{*t*}

Table 2 contd.
Descriptive Statistics - Selected Variables Used in the Analysis by NTEE Classification^a
in \$000's
Panel B: NTEE major groups A, B, C & D, E through H, I through P (Pre-adopters)

NTEE Code by Major Group	<u>Arts</u>	<u>Education</u>	<u>Environment & Animals</u>	<u>Health</u>	<u>Human Services</u>
	A	B	C & D	E through H	I through P
<u>Total revenues</u>					
Mean	22,413	46,452	16,901	99,480	14,321
Median	10,845	15,533	11,265	42,180	9,843
<u>Total assets</u>					
Mean	62,469	98,891	40,325	114,195	27,149
Median	29,914	30,300	25,428	48,543	17,535
<u>Contribution revenue</u>					
Mean	10,175	13,190	8,743	7,975	4,238
Median	4,465	3,448	3,758	1,256	1,998
<u>Cash inflows from contributions^b</u>					
Mean	9,726	13,068	8,671	8,022	4,391
Median	4,324	3,388	3,766	1,355	2,090
<u>Total expenses</u>					
Mean	17,961	39,480	13,805	93,852	13,074
Median	8,323	13,046	9,413	39,213	8,952
N =	1,309	2,953	218	3,732	1,677

^a Observations falling in the top or bottom 1% of either deflated total revenue, deflated contribution revenue or deflated cash inflows from contributions are excluded.

^b Cash Inflows From Contributions_{*i*} = Contribution Revenue_{*i*} + PLGE_{*i*} - PLGE_{*i*} + GRTREC_{*i*} - GRTREC_{*i*} - FUTSUP_{*i*} + FUTSUP_{*i*}

Table 2 contd.
Descriptive Statistics - Selected Variables Used in the Analysis by NTEE Classification^a
in \$000's
Panel B contd.: NTEE major groups Q, R through W, X, Y, Z (Pre-adopters)

NTEE Code by Major Group	<u>Int'l</u>	<u>Public, Societal Benefit</u>	<u>Religious Related</u>	<u>Mutual Membership</u>	<u>Unknown</u>
	Q	R through W	X	Y	Z
<u>Total revenues</u>					
Mean	18,304	22,076	50,748	10,846	-
Median	12,345	14,008	37,104	10,915	-
<u>Total assets</u>					
Mean	43,863	46,258	232,851	22,784	-
Median	31,655	25,460	211,865	20,096	-
<u>Contribution revenue</u>					
Mean	12,284	16,485	18,085	4,717	-
Median	8,522	9,413	24,556	5,003	-
<u>Cash inflows from contributions^b</u>					
Mean	11,850	16,259	17,950	4,506	-
Median	7,439	9,142	22,922	4,765	-
<u>Total expenses</u>					
Mean	16,029	19,069	33,582	9,544	-
Median	11,000	12,199	33,719	9,540	-
N =	89	1,347	17	8	0

^aObservations falling in the top or bottom 1% of either deflated total revenue, deflated contribution revenue or deflated cash inflows from contributions are excluded.

^bCash Inflows From Contributions_{*i*} = Contribution Revenue_{*i*} + PLGE_{*i*} - PLGE_{*i-1*} + GRTREC_{*i*} - GRTREC_{*i-1*} - FUTSUP_{*i*} + FUTSUP_{*i-1*}

Table 2 contd.
Descriptive Statistics - Selected Variables Used in the Analysis by NTEE Classification^a
in \$000's
Panel C: NTEE major groups A, B, C & D, E through H, I through P (Post-adopters)

NTEE Code by Major Group	<u>Arts</u>	<u>Education</u>	<u>Environment & Animals</u>	<u>Health</u>	<u>Human Services</u>
	A	B	C & D	E through H	I through P
<u>Total revenues</u>					
Mean	18,509	60,560	21,260	89,254	16,400
Median	8,488	18,001	10,661	47,405	8,363
<u>Total assets</u>					
Mean	44,599	139,232	50,619	94,392	32,395
Median	22,234	34,879	26,432	47,578	17,777
<u>Contribution revenue</u>					
Mean	9,270	14,979	10,802	2,700	3,560
Median	3,118	3,913	4,181	314	641
<u>Cash inflows from contributions^b</u>					
Mean	9,117	14,675	10,438	2,745	3,957
Median	3,147	3,835	4,034	330	872
<u>Total expenses</u>					
Mean	15,513	51,140	16,862	84,485	15,232
Median	6,116	15,511	7,505	44,828	7,761
N =	1,133	8,805	450	14,204	5,177

^aObservations falling in the top or bottom 1% of either deflated total revenue, deflated contribution revenue or deflated cash inflows from contributions are excluded.

^bCash Inflows From Contributions_{*i*} = Contribution Revenue_{*i*} + PLGE_{*i*} - PLGE_{*i*} + GRTREC_{*i*} - GRTREC_{*i*} - FUTSUP_{*i*} + FUTSUP_{*i*}

Table 2 contd.
Descriptive Statistics - Selected Variables Used in the Analysis by NTEE Classification^a
in \$000's
Panel C contd.: NTEE major groups Q, R through W, X, Y, Z (Post-adopters)

NTEE Code by Major Group	<u>Int'l</u>	<u>Public, Societal Benefit</u>	<u>Religious Related</u>	<u>Mutual Membership</u>	<u>Unknown</u>
	Q	R through W	X	Y	Z
<u>Total revenues</u>					
Mean	38,962	30,023	22,407	23,881	50,527
Median	22,208	10,820	8,328	9,189	39,254
<u>Total assets</u>					
Mean	64,529	64,439	39,270	61,647	65,813
Median	26,562	26,152	21,095	29,772	67,685
<u>Contribution revenue</u>					
Mean	32,321	12,884	13,384	6,883	1,323
Median	17,631	3,270	3,572	4,706	260
<u>Cash inflows from contributions^b</u>					
Mean	32,704	13,102	13,286	6,868	1,336
Median	18,122	3,400	3,738	4,765	260
<u>Total expenses</u>					
Mean	36,204	24,340	19,450	19,184	50,560
Median	21,116	7,001	6,022	6,878	39,291
N =	251	1,719	266	98	8

^a Observations falling in the top or bottom 1% of either deflated total revenue, deflated contribution revenue or deflated cash inflows from contributions are excluded.

^b Cash Inflows From Contributions_{*t*} = Contribution Revenue_{*t*} + PLGE_{*t-1*} - PLGE_{*t*} + GRTREC_{*t-1*} - GRTREC_{*t*} - FUTSUP_{*t-1*} + FUTSUP_{*t*}

Table 3
Descriptive Statistics - Scaled Variables Used in the Analysis^a

Panel A: 1990 to 1997 (Full sample)

<u>Variable</u>	<u>Mean</u>	<u>Median</u>	<u>Standard Deviation</u>	<u>Minimum</u>	<u>Maximum</u>
Total revenues	.737	.653	.484	.070	3.137
Contribution revenue	.128	.048	.222	0.000	1.867
Cash inflows from contributions ^b	.129	.051	.220	0.000	1.946
Pledges receivable	.022	0.000	.083	0.000	2.671
Grants receivable	.007	0.000	.048	-.002 ^c	1.502
Future support	.031	0.000	.104	-.003 ^d	2.985
Total expenses	.682	.598	.488	.005	3.841

N = 43,461

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^bCash Inflows From Contributions_{*t*} = Contribution Revenue_{*t*} + PLGE_{*t-1*} - PLGE_{*t*} + GRTREC_{*t-1*} - GRTREC_{*t*} - FUTSUP_{*t-1*} + FUTSUP_{*t*}

^cFour observations report negative grants receivable.

^dThree observations report negative future support.

Table 3 contd.
Descriptive Statistics - Scaled Variables Used in the Analysis^a

Panel B: 1990 to 1994 (Pre-FASB regulation)

<u>Variable</u>	<u>Mean</u>	<u>Median</u>	<u>Standard Deviation</u>	<u>Minimum</u>	<u>Maximum</u>
Total revenues	.752	.674	.488	.070	3.137
Contribution revenue	.126	.048	.219	0.000	1.865
Cash inflows from contributions ^b	.129	.051	.220	0.000	1.879
Pledges receivable	.019	0.000	.086	0.000	2.671
Grants receivable	.007	0.000	.048	-.001 ^c	1.444
Future support	.034	0.000	.114	-.003 ^d	2.985
Total expenses	.705	.629	.487	.007	3.165

N = 26,275

^a All observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b Cash Inflows From Contributions_{*t*} = Contribution Revenue_{*t*} + PLGE_{*t-1*} - PLGE_{*t*} + GRTREC_{*t-1*} - GRTREC_{*t*} - FUTSUP_{*t-1*} + FUTSUP_{*t*}

^c Three observations report negative grants receivable.

^d One observation reports negative future support.

Table 3 contd.
Descriptive Statistics - Scaled Variables Used in the Analysis^a

Panel C: 1995 to 1997 (Post-FASB regulation)

<u>Variable</u>	<u>Mean</u>	<u>Median</u>	<u>Standard Deviation</u>	<u>Minimum</u>	<u>Maximum</u>
Total revenues	.716	.623	.476	.071	3.064
Contribution revenue	.131	.049	.226	0.000	1.867
Cash inflows from contributions ^b	.129	.051	.219	0.000	1.946
Pledges receivable	.026	0.000	.080	0.000	1.567
Grants receivable	.007	0.000	.047	-.002 ^c	1.502
Future support	.026	0.000	.088	-.001 ^d	1.334
Total expenses	.648	.557	.487	.005	3.841
N = 17,186					

^a All observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b Cash Inflows From Contributions_{*t*} = Contribution Revenue_{*t*} + PLGE_{*t-1*} - PLGE_{*t*} + GRTREC_{*t-1*} - GRTREC_{*t*} - FUTSUP_{*t-1*} + FUTSUP_{*t*}

^c One observation reports negative grants receivable.

^d Two observations report negative future support.

Table 4
Correlations Among Variables^a
Pearson correlations below the diagonal
Spearman correlations above the diagonal

Panel A: 1990 to 1997 (Full sample)

<u>Variable</u>	<u>Total revenues</u>	<u>Contribution revenue</u>	<u>Cash inflows from contributions</u>	<u>Pledges receivable</u>	<u>Grants receivable</u>	<u>Future support</u>	<u>Total expenses</u>
Total revenues	-	-.197 *	-.208 *	-.154 *	.005	-.142 *	.975 *
Contribution revenue	.120 *	-	.964 *	.366 *	.295 *	.311 *	-.241 *
Cash inflows from contributions ^b	.108 *	.969 *	-	.342 *	.279 *	.368 *	-.245 *
Pledges receivable	-.023 *	.412 *	.364 *	-	.089 *	.271 *	-.181 *
Grants receivable	.058 *	.331 *	.298 *	-.013 **	-	.178 *	.006
Future support	-.040 *	.215 *	.280 *	.338 *	.215 *	-	-.138 *
Total expenses	.982 *	.084 *	.080 *	-.043 *	.053 *	-.032 *	-
N = 43,461							

^a All observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b Cash Inflows From Contributions_t = Contribution Revenue_t + PLGE_{t-1} - PLGE_t + GRTREC_{t-1} - GRTREC_t - FUTSUP_{t-1} + FUTSUP_t

*p-value <.0001; **p-value <.006

Table 4 contd.
Correlations Among Variables^a
Pearson correlations below the diagonal
Spearman correlations above the diagonal

Panel B: 1990 to 1994 (pre-FASB regulation)

<u>Variable</u>	<u>Total revenues</u>	<u>Contribution revenue</u>	<u>Cash inflows from contributions</u>	<u>Pledges receivable</u>	<u>Grants receivable</u>	<u>Future support</u>	<u>Total expenses</u>
Total revenues	-	-.227 *	-.236 *	-.108 *	.009	-.163 *	.981 *
Contribution revenue	.098 *	-	.976 *	.287 *	.298 *	.358 *	-.259 *
Cash inflows from contributions ^b	.089 *	.982 *	-	.285 *	.287 *	.404 *	-.264 *
Pledges receivable	-.024 *	.402 *	.386 *	-	.066 *	.267 *	-.113 *
Grants receivable	.057 *	.336 *	.318 *	-.014 **	-	.187 *	.011
Future support	-.043 *	.307 *	.353 *	.499 *	.251 *	-	-.161 *
Total expenses	.986 *	.069 *	.075 *	-.029 *	.060 *	-.037 *	-
N = 26,275							

^a All observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b Cash Inflows From Contributions_t = Contribution Revenue_t + PLGE_{t-1} - PLGE_t + GRTREC_{t-1} - GRTREC_t - FUTSUP_{t-1} + FUTSUP_t

*p-value <.0001; **p-value <.026

Table 4 contd.
Correlations Among Variables^a
Pearson correlations below the diagonal
Spearman correlations above the diagonal

Panel C: 1995 to 1997 (Post-FASB regulation)

<u>Variable</u>	<u>Total revenues</u>	<u>Contribution revenue</u>	<u>Cash inflows from contributions</u>	<u>Pledges receivable</u>	<u>Grants receivable</u>	<u>Future support</u>	<u>Total expenses</u>
Total revenues	-	-.149 *	-.164 *	-.196 *	-.001	-.102 *	.966 *
Contribution revenue	.155 *	-	.945 *	.482 *	.290 *	.238 *	-.214 *
Cash inflows from contributions ^b	.138 *	.951 *	-	.432 *	.267 *	.315 *	-.216 *
Pledges receivable	-.018 *	.429 *	.330 *	-	.115 *	.254 *	-.235 *
Grants receivable	.060 *	.322 *	.267 *	-.013 **	-	.163 *	0.000
Future support	-.039 *	.045 *	.140 *	.011	.149 *	-	-.091 *
Total expenses	.978 *	.098 *	.098 *	-.060 *	.045 *	-.031 *	-

N = 17,186

^a All observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b Cash Inflows From Contributions_t = Contribution Revenue_t + PLGE_{t-1} - PLGE_t + GRTREC_{t-1} - GRTREC_t - FUTSUP_{t-1} + FUTSUP_t

*p-value <.0001; **p-value <.091

Table 5
Univariate Pooled Cross-Sectional Regressions^{a,b}
(Full Sample)

**Panel A: Future Cash Inflows From Contributions (CIC_{t+1}) on
Current Contribution Revenue (R_t)**

$$CIC_{t+1} = \gamma_0 + \gamma_1 R_t + \varepsilon_{t+1}$$

Forecast Years	N	γ_0	γ_1	Adj. R ²
1991-1997	38,932	.028 (35.56)* [31.01]*	.788 (260.49)* [94.20]*	.635
1991-1995**	27,449	.027 (28.70)* [24.89]*	.797 (219.09)* [78.88]*	.636
1996-1997***	11,483	.030 (21.01)* [18.50]*	.768 (141.05)* [52.25]*	.634

**Panel B: Future Cash Inflows From Contributions (CIC_{t+1}) on
Current Cash Inflows From Contributions (CIC_t)**

$$CIC_{t+1} = \gamma_0 + \gamma_1 CIC_t + \varepsilon_{t+1}$$

Forecast Years	N	γ_0	γ_1	Adj. R ²
1991-1997	38,932	.028 (34.67)* [30.35]*	.783 (249.78)* [91.74]*	.616
1991-1995**	27,449	.026 (27.63)* [23.85]*	.784 (211.39)* [75.85]*	.620
1996-1997***	11,483	.032 (21.07)* [19.11]*	.781 (133.24)* [51.73]*	.607

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b(OLS) and [White's] t-statistics are in parentheses.

*Significant at p-value <.0001; **Pre-FASB Regulation; ***Post-FASB Regulation

Table 5 contd.
Univariate Pooled Cross-Sectional Regressions^a
(Full Sample)

Panel C: Non-Nested Model Selection Results Using
Vuong's (1989) Likelihood Ratio Test
Comparison of Model 1 v. Model 2^b

Forecast Years	N	Z-statistic ^c	Significance ^d
<i>Contribution revenue (R) v.</i>			
<i>cash inflows from contributions (CIC)</i>			
1991-1997	38,932	6.26	<.0001
1991-1995**	27,449	5.49	<.0001
1996-1997***	11,483	3.83	<.0001

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b H_0 = the competing models are equally close to the true data-generating process v. H_1 = one model is closer to the true data-generating process.

^cA Z-statistic that is positive and significant suggests that model 1 is closer to explaining the true data-generating process than model 2. A negative and significant Z-statistic suggests that the opposite is true.

^dReported significance levels are from a two-sided test.

Pre-FASB regulation;*Post-FASB regulation

Table 6
Univariate Annual Cross-Sectional Regressions^{a b c}
(Full Sample)

**Panel A: Future Cash Inflows From Contributions (CIC_{t+1}) on
Current Contribution Revenue (R_t)**

$$CIC_{t+1} = \gamma_0 + \gamma_1 R_t + \varepsilon_{t+1}$$

Forecast Year	N	γ_0	γ_1	Adj. R ²
<u>Pre-FASB regulation</u>				
1991	4,979	.031 (13.99)* [11.95]*	.790 (87.25)* [30.79]*	.601
1992	5,342	.027 (12.70)* [10.54]*	.808 (92.89)* [34.03]*	.618
1993	5,663	.029 (13.35)* [11.93]*	.810 (97.77)* [35.86]*	.628
1994	5,762	.023 (11.76)* [10.79]*	.831 (112.35)* [42.75]*	.687
1995	5,703	.024 (12.38)* [10.48]*	.747 (100.43)* [33.40]*	.639
<i>Pre-FASB regulation average</i>				.635
<u>Post-FASB regulation</u>				
1996	6,272	.032 (15.68)* [14.23]*	.787 (103.75)* [42.61]*	.632
1997	5,211	.029 (14.07)* [12.02]*	.744 (95.96)* [31.99]*	.639

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b (OLS) and [White's] t-statistics are in parentheses.

^c Replicating the regressions following Fama and MacBeth (1973) and Fama and French (2000) produced consistent results (untabulated).

*Significant at p-value <.0001

Table 6 contd.
Univariate Annual Cross-Sectional Regressions^{a b c}
(Full Sample)

**Panel B: Future Cash Inflows From Contributions (CIC_{t+1}) on
Current Cash Inflows From Contributions (CIC_t)**

$$CIC_{t+1} = \gamma_0 + \gamma_1 CIC_t + \varepsilon_{t+1}$$

Forecast Year	N	γ_0	γ_1	Adj. R ²
<u>Pre-FASB regulation</u>				
1991	4,979	.030 (13.22)* [11.40]*	.782 (84.84)* [30.51]*	.591
1992	5,342	.028 (12.47)* [10.52]*	.783 (88.59)* [32.89]*	.595
1993	5,663	.029 (12.95)* [11.46]*	.789 (92.60)* [33.81]*	.602
1994	5,762	.022 (11.27)* [10.18]*	.818 (109.54)* [41.07]*	.676
1995	5,703	.024 (11.91)* [9.86]*	.744 (97.89)* [31.83]*	.627
<i>Pre-FASB regulation average</i>				.618
<u>Post-FASB regulation</u>				
1996	6,272	.036 (16.90)* [16.00]*	.804 (94.92)* [40.75]*	.590
1997	5,211	.026 (12.63)* [10.94]*	.756 (95.37)* [33.21]*	.636

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b(OLS) and [White's] t-statistics are in parentheses.

^cReplicating the regressions following Fama and MacBeth (1973) and Fama and French (2000) produced consistent results (untabulated).

*Significant at p-value <.0001

Table 7
Multivariate Cross-Sectional Regressions^{a b c}
(Full Sample)

Future Cash Inflows From Contributions (CIC_{t+1}) on
Current Contribution Revenue (R_t) and Current Cash Inflows From
Contributions (CIC_t)

$$CIC_{t+1} = \gamma_0 + \gamma_1 R_t + \gamma_2 CIC_t + \varepsilon_{t+1}$$

Forecast Years	N	γ_0	γ_1	γ_2	Adj. R ²
Pooled (1991-1997)	38,932	.027 (34.05)* [29.60]*	.597 (48.70)* [21.19]*	.199 (16.06)* [7.08]*	.638
<u>Pre-FASB regulation</u>					
1991	4,979	.030 (13.63)* [11.62]*	.660 (13.28)* [8.93]*	.132 (2.66)+ [2.02]&	.605
1992	5,342	.027 (12.46)* [10.37]*	.722 (17.92)* [10.50]*	.086 (2.16)# [1.33]	.618
1993	5,663	.029 (13.29)* [11.93]*	.813 (19.78)* [9.34]*	-.004 (-.09) [-.04]	.628
1994	5,762	.022 (11.24)* [10.11]*	.591 (15.67)* [8.16]*	.243 (6.48)* [3.30]v	.689
1995	5,703	.023 (12.07)* [10.04]*	.604 (14.12)* [6.01]*	.146 (3.40)^ [1.43]	.640
<u>Post-FASB regulation</u>					
1996	6,272	.031 (15.04)* [13.70]*	.614 (28.27)* [14.29]*	.195 (8.48)* [4.28]*	.636
1997	5,211	.025 (12.39)* [10.82]*	.398 (16.15)* [6.29]*	.370 (14.75)* [5.77]*	.653

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b(OLS) and [White's] t-statistics are in parentheses.

^cReplicating the regressions following Fama and MacBeth (1973) and Fama and French (2000) produced consistent results (untabulated).

*Significant at p-value <.0001; ^significant at p-value <.0007; vsignificant at p-value <.001; ^significant at p-value <.0079; *significant at p-value <.0309; ^significant at p-value <.0434

Table 8
Univariate Pooled Pro-Forma Cross-Sectional Regressions^{a,b}
(Full Sample)

**Panel A: Future Cash Inflows From Contributions (CIC_{t+1}) on
Pro-Forma Current Contribution Revenue (PFR_t)**

$$CIC_{t+1} = \gamma_0 + \gamma_1 PFR_t + \varepsilon_{t+1}$$

Forecast Years	N	γ_0	γ_1	Adj. R ²
1991-1997	38,932	.029 (37.50)* [30.02]*	.787 (257.31)* [89.28]*	.630
1990-1995**	27,449	.028 (30.02)* [23.07]*	.788 (214.97)* [72.19]*	.627
1996-1997***	11,483	.033 (22.66)* [20.12]*	.785 (141.43)* [53.37]*	.635

**Panel B: Non-Nested Model Selection Results Using
Vuong's (1989) Likelihood Ratio Test
Comparison of Model 1 v. Model 2^c**

Forecast Years	N	Z-statistic ^d	Significance ^e
<i>Contribution revenue (R) v. pro-forma contribution revenue (PFR)</i>			
1991-1997	38,932	1.81	<.0710
1991-1995**	27,449	2.09	<.0362
1996-1997***	11,483	-.300	<.7635

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b $PFR_t = R_t + \text{Pledges Receivable}_{t-1} - \text{Pledges Receivable}_t$

^c H_0 = the competing models are equally close to the true data-generating process v. H_1 = one model is closer to the true data-generating process.

^dA Z-statistic that is positive and significant suggests that model 1 is closer to explaining the true data-generating process than model 2. A negative and significant Z-statistic suggests that the opposite is true.

^eReported significance levels are from a two-sided test.

*Significant at p-value <.0001; **Pre-FASB regulation; ***Post-FASB regulation

Table 8 contd.
Univariate Pooled Pro-Forma Cross-Sectional Regressions^a
(Full Sample)

Panel B contd.: Non-Nested Model Selection Results Using
Vuong's (1989) Likelihood Ratio Test
Comparison of Model 1 v. Model 2^b

Forecast Years	N	Z-statistic ^c	Significance ^d
<i>Pro-forma contribution revenue (PFR)^e v.</i>			
<i>cash inflows from contributions (CIC)</i>			
1991-1997	38,932	3.64	<.0003
1991-1995**	27,449	1.68	<.0922
1996-1997***	11,483	4.29	<.0001

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b H_0 = the competing models are equally close to the true data-generating process v. H_1 = one model is closer to the true data-generating process.

^c A Z-statistic that is positive and significant suggests that model 1 is closer to explaining the true data-generating process than model 2. A negative and significant Z-statistic suggests that the opposite is true.

^d Reported significance levels are from a two-sided test.

^e $PFR_t = R_t + \text{Pledges Receivable}_{t-1} - \text{Pledges Receivable}_t$

Pre-FASB regulation; *Post-FASB regulation

Table 9
Univariate Annual Pro-Forma Cross-Sectional Regressions^{a b c d}
(Full Sample)

Future Cash Inflows From Contributions (CIC_{t+1}) on
Pro-Forma Current Contribution Revenue (PFR_t)

$$CIC_{t+1} = \gamma_0 + \gamma_1 PFR_t + \varepsilon_{t+1}$$

Forecast Year	N	γ_0	γ_1	Adj. R ²
<u>Pre-FASB regulation</u>				
1991	4,979	.035 (15.53)* [8.89]*	.763 (82.95)* [22.82]*	.580
1992	5,342	.028 (12.98)* [10.74]*	.801 (91.00)* [33.55]*	.608
1993	5,663	.029 (13.56)* [12.19]*	.802 (97.29)* [35.91]*	.626
1994	5,762	.024 (12.38)* [11.09]*	.824 (110.69)* [40.94]*	.680
1995	5,703	.025 (12.76)* [10.20]*	.743 (99.43)* [31.11]*	.634
<i>Pre-FASB regulation average</i>				.626
<u>Post-FASB regulation</u>				
1996	6,272	.036 (17.74)* [16.04]*	.798 (102.29)* [41.96]*	.625
1997	5,211	.029 (14.19)* [12.35]*	.769 (98.55)* [33.79]*	.651

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b(OLS) and [White's] t-statistics are in parentheses.

^c $PFR_t = R_t + \text{Pledges Receivable}_{t-1} - \text{Pledges Receivable}_t$

^dReplicating the regressions following Fama and MacBeth (1973) and Fama and French (2000) produced consistent results (untabulated).

*Significant at p-value <.0001

Table 10
Multivariate Pro-Forma Cross-Sectional Regressions^{a b c d}
(Full Sample)

**Future Cash Inflows From Contributions (CIC_{t+1}) on Pro-Forma
Current Contribution Revenue (PFR_t) and Current Cash Inflows From
Contributions (CIC_t)**

$$CIC_{t+1} = \gamma_0 + \gamma_1 PFR_t + \gamma_2 CIC_t + \varepsilon_{t+1}$$

Forecast Years	N	γ_0	γ_1	γ_2	Adj. R ²
Pooled (1991-1997)	38,932	.028 (35.35)* [30.75]*	.558 (42.45)* [11.51]*	.237 (17.93)* [4.95]*	.633
<u>Pre-FASB regulation</u>					
1991	4,979	.030 (13.43)* [11.51]*	.300 (9.19)* [2.43]#	.490 (14.83)* [4.44]*	.598
1992	5,342	.027 (12.56)* [10.50]*	.620 (13.90)* [6.83]*	.183 (4.15)* [2.09]&	.609
1993	5,663	.029 (13.49)* [12.14]*	.805 (18.82)* [9.77]*	-.003 (-.07) [-.04]	.626
1994	5,762	.022 (11.49)* [10.35]*	.489 (12.76)* [5.07]*	.341 (8.92)* [3.57]^	.685
1995	5,703	.024 (12.32)* [10.17]*	.554 (11.34)* [4.10]*	.193 (3.93)* [1.47]	.635
<u>Post-FASB regulation</u>					
1996	6,272	.034 (16.75)* [15.41]*	.624 (25.68)* [11.50]*	.191 (7.59)* [3.41]∇	.629
1997	5,211	.027 (13.15)* [11.52]*	.539 (16.77)* [5.67]*	.235 (7.35)* [2.54]+	.654

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b(OLS) and [White's] t-statistics are in parentheses.

^cPFR_t = R_t + Pledges Receivable_{t-1} - Pledges Receivable_t.

^dReplicating the regressions following Fama and MacBeth (1973) and Fama and French (2000) produced consistent results (untabulated).

*Significant at p-value<.0001; ^significant at p-value<.0004; ∇significant at p-value<.0007; +significant at p-value <.0112; significant at p-value<.0149; †significant at p-value<.0364

Table 11
Univariate Pooled Cross-Sectional Regressions^{a b}
(Pre-Adopters)

**Panel A: Future Cash Inflows From Contributions (CIC_{t+1}) on
Current Contribution Revenue (R_t)**

$$CIC_{t+1} = \gamma_0 + \gamma_1 R_t + \varepsilon_{t+1}$$

Forecast Years	N	γ_0	γ_1	Adj. R ²
1991-1997	10,123	.029 (17.50)* [15.69]*	.826 (157.66)* [66.38]*	.711
1991-1995**	7,387	.031 (15.76)* [14.34]*	.824 (130.60)* [57.12]*	.698
1996-1997***	2,736	.023 (7.66)* [6.58]*	.833 (89.66)* [33.86]*	.746

**Panel B: Future Cash Inflows From Contributions (CIC_{t+1}) on
Current Cash Inflows From Contributions (CIC_t)**

$$CIC_{t+1} = \gamma_0 + \gamma_1 CIC_t + \varepsilon_{t+1}$$

Forecast Years	N	γ_0	γ_1	Adj. R ²
1991-1997	10,123	.032 (18.24)* [16.01]*	.821 (145.80)* [61.01]*	.677
1991-1995**	7,387	.032 (15.89)* [14.20]*	.810 (124.93)* [53.43]*	.678
1996-1997***	2,736	.029 (8.86)* [5.57]*	.857 (75.41)* [28.55]*	.675

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b (OLS) and [White's] t-statistics are in parentheses.

*Significant at p-value <.0001; **Pre-FASB Regulation; ***Post-FASB Regulation

Table 11 contd.
Univariate Pooled Cross-Sectional Regressions^{a b c}
(Pre-Adopters)

**Panel C: Future Cash Inflows From Contributions (CIC_{t+1}) on
Pro-Forma Current Contribution Revenue (PFR_t)**

$$CIC_{t+1} = \gamma_0 + \gamma_1 PFR_t + \varepsilon_{t+1}$$

Forecast Years	N	γ_0	γ_1	Adj. R ²
1991-1997	10,123	.034 (20.07)* [13.30]*	.810 (150.39)* [53.31]*	.691
1991-1995**	7,387	.038 (18.37)* [11.70]*	.796 (122.81)* [42.64]*	.671
1996-1997***	2,736	.024 (8.22)* [6.80]*	.849 (89.75)* [35.52]*	.747

**Panel D: Non-Nested Model Selection Results Using
Vuong's (1989) Likelihood Ratio Test
Comparison of Model 1 v. Model 2^d**

Forecast Years	N	Z-statistic ^e	Significance ^f
<i>Contribution revenue (R) v. cash inflows from contributions (CIC)</i>			
1991-1997	10,123	4.79	<.0001
1991-1995**	7,387	3.36	<.0008
1996-1997***	2,736	3.71	<.0002

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b(OLS) and [White's] t-statistics are in parentheses.

^cPFR_t = R_t + Pledges Receivable_{t-1} - Pledges Receivable_t

^dH₀ = the competing models are equally close to the true data-generating process v. H₁ = one model is closer to the true data-generating process.

^eA Z-statistic that is positive and significant suggests that model 1 is closer to explaining the true data-generating process than model 2. A negative and significant Z-statistic suggests that the opposite is true.

^fReported significance levels are from a two-sided test.

*Significant at p-value <.0001; **Pre-FASB Regulation; ***Post-FASB Regulation

Table 11 contd.
Univariate Pooled Cross-Sectional Regressions^a
(Pre-Adopters)

Panel D contd.: Non-Nested Model Selection Results Using
Vuong's (1989) Likelihood Ratio Test
Comparison of Model 1 v. Model 2^b

Forecast Years	N	Z-statistic ^c	Significance ^d
<i>Contribution revenue (R) v.</i> <i>pro-forma contribution revenue (PFR)^e</i>			
1991-1997	10,123	2.13	<.0329
1991-1995**	7,387	2.27	<.0235
1996-1997***	2,736	-.033	<.9740
<i>Pro-Forma contribution revenue (PFR) v.</i> <i>cash inflows from contributions (CIC)</i>			
1991-1997	10,123	1.31	<.1916
1991-1995**	7,387	-.64	<.5241
1996-1997***	2,736	3.88	<.0001

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b H_0 = the competing models are equally close to the true data-generating process v. H_1 = one model is closer to the true data-generating process.

^cA Z-statistic that is positive and significant suggests that model 1 is closer to explaining the true data-generating process than model 2. A negative and significant Z-statistic suggests that the opposite is true.

^d Reported significance levels are from a two-sided test.

^e $PFR_t = R_t + \text{Pledges Receivable}_{t,1} - \text{Pledges Receivable}_t$

Pre-FASB Regulation;*Post-FASB Regulation

Table 12
Univariate Annual Cross-Sectional Regressions^{a b c}
(Pre-Adopters)

**Panel A: Future Cash Inflows From Contributions (CIC_{t+1}) on
Current Contribution Revenue (R_t)**

$$CIC_{t+1} = \gamma_0 + \gamma_1 R_t + \varepsilon_{t+1}$$

Forecast Year	N	γ_0	γ_1	Adj. R ²
<u>Pre-FASB regulation</u>				
1991	1,367	.036 (7.34)* [6.91]*	.839 (51.88)* [25.00]*	.663
1992	1,468	.037 (7.71)* [6.89]*	.838 (55.35)* [25.67]*	.676
1993	1,553	.028 (6.69)* [6.22]*	.875 (65.41)* [29.47]*	.734
1994	1,579	.029 (7.40)* [6.71]*	.820 (66.78)* [27.29]*	.739
1995	1,420	.026 (6.38)* [5.44]*	.736 (55.24)* [20.52]*	.683
<i>Pre-FASB regulation average</i>				.700
<u>Post-FASB regulation</u>				
1996	1,496	.019 (4.55)* [4.26]*	.877 (66.96)* [33.30]*	.750
1997	1,240	.026 (6.44)* [4.91]*	.782 (60.39)* [18.88]*	.746

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b(OLS) and [White's] t-statistics are in parentheses.

^c Replicating the regressions following Fama and MacBeth (1973) and Fama and French (2000) produced consistent results (untabulated).

*Significant at p-value <.0001

Table 12 contd.
Univariate Annual Cross-Sectional Regressions^{a b c}
(Pre-Adopters)

**Panel B: Future Cash Inflows From Contributions (CIC_{t+1}) on
Current Cash Inflows From Contributions (CIC_t)**

$$CIC_{t+1} = \gamma_0 + \gamma_1 CIC_t + \varepsilon_{t+1}$$

Forecast Year	N	γ_0	γ_1	Adj. R ²
<u>Pre-FASB regulation</u>				
1991	1,367	.034 (6.78)* [6.49]*	.838 (50.72)* [25.18]*	.653
1992	1,468	.041 (8.08)* [7.15]*	.806 (51.53)* [23.17]*	.644
1993	1,553	.028 (6.35)* [6.01]*	.859 (62.28)* [28.78]*	.714
1994	1,579	.031 (7.76)* [6.89]*	.801 (64.28)* [25.75]*	.724
1995	1,420	.029 (6.76)* [5.42]*	.736 (52.41)* [18.23]*	.659
<i>Pre-FASB regulation average</i>				.679
<u>Post-FASB regulation</u>				
1996	1,496	.032 (6.40)* [6.61]*	.920 (50.84)* [27.64]*	.633
1997	1,240	.024 (5.81)* [4.08]*	.802 (61.11)* [18.26]*	.751

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b(OLS) and [White's] t-statistics are in parentheses.

^cReplicating the regressions following Fama and MacBeth (1973) and Fama and French (2000) produced consistent results (untabulated).

*Significant at p-value <.0001

Table 12 contd.
Univariate Annual Cross-Sectional Regressions^{a b c d}
(Pre-Adopters)

**Panel C: Future Cash Inflows From Contributions (CIC_{t+1}) on
Pro-Forma Current Contribution Revenue (PFR_t)**

$$CIC_{t+1} = \gamma_0 + \gamma_1 PFR_t + \varepsilon_{t+1}$$

Forecast Year	N	γ_0	γ_1	Adj. R ²
<u>Pre-FASB regulation</u>				
1991	1,367	.054 (10.02)* [4.28]*	.767 (44.78)* [11.42]*	.595
1992	1,468	.041 (8.29)* [7.20]*	.821 (52.68)* [24.34]*	.654
1993	1,553	.031 (7.25)* [6.60]*	.853 (63.93)* [28.23]*	.725
1994	1,579	.034 (8.57)* [7.22]*	.800 (63.48)* [24.55]*	.719
1995	1,420	.030 (7.19)* [4.97]*	.722 (53.14)* [16.25]*	.666
<i>Pre-FASB regulation average</i>				.672
<u>Post-FASB regulation</u>				
1996	1,496	.025 (5.65)* [5.14]*	.867 (62.09)* [30.63]*	.721
1997	1,240	.023 (6.19)* [4.58]*	.826 (67.31)* [21.00]*	.785

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b(OLS) and [White's] t-statistics are in parentheses.

^cPFR_t = R_t + Pledges Receivable_{t-1} - Pledges Receivable_t

^dReplicating the regressions following Fama and MacBeth (1973) and Fama and French (2000) produced consistent results (untabulated).

*Significant at p-value <.0001

Table 13
Multivariate Cross-Sectional Regressions^{a b c}
(Pre-Adopters)

**Panel A: Future Cash Inflows From Contributions (CIC_{t+1}) on
Current Contribution Revenue (R_t) and Current Cash
Inflows From Contributions (CIC_t)**

$$CIC_{t+1} = \gamma_0 + \gamma_1 R_t + \gamma_2 CIC_t + \varepsilon_{t+1}$$

Forecast Years	N	γ_0	γ_1	γ_2	Adj. R ²
Pooled (1991-1997)	10,123	.027 (16.60)* [14.79]*	.655 (35.58)* [17.36]*	.182 (9.73)* [4.80]*	.713
<u>Pre-FASB regulation</u>					
1991	1,367	.035 (7.01)* [6.63]*	.631 (6.81)* [5.00]*	.213 (2.28)# [1.89] ^u	.664
1992	1,468	.037 (7.63)* [6.81]*	.781 (12.07)* [7.60]*	.057 (0.90) [.57]	.676
1993	1,553	.027 (6.27)* [5.94]*	.659 (11.39)* [5.36]*	.221 (3.83)* [1.86]<	.736
1994	1,579	.028 (7.14)* [6.44]*	.560 (10.91)* [6.07]*	.264 (5.22)* [2.96]∇	.743
1995	1,420	.026 (6.29)* [5.22]*	.645 (10.31)* [4.48]*	.095 (1.50) [.63]	.683
<u>Post-FASB regulation</u>					
1996	1,496	.017 (3.97)* [4.03]*	.773 (26.80)* [15.74]*	.132 (4.00)* [2.24]&	.752
1997	1,240	.021 (5.36)* [4.07]*	.381 (9.96)* [2.80]+	.433 (11.09)* [3.08]^	.769

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b(OLS) and [White's] t-statistics are in parentheses.

^cReplicating the regressions following Fama and MacBeth (1973) and Fama and French (2000) produced consistent results (untabulated).

*Significant at p-value<.0001; ^significant at p-value<.002; ∇significant at p-value<.0031; *significant at p-value <.0051; *significant at p-value<.0227; *significant at p-value<.0249; *significant at p-value<.0592; <significant at p-value<.0624

Table 13 contd.
Multivariate Cross-Sectional Regressions^{a b c d}
(Pre-Adopters)

**Panel B: Future Cash Inflows From Contributions (CIC_{t+1}) on
Pro-Forma Current Contribution Revenue (PFR_t)
and Current Cash Inflows From Contributions (CIC_t)**

$$CIC_{t+1} = \gamma_0 + \gamma_1 PFR_t + \gamma_2 CIC_t + \varepsilon_{t+1}$$

Forecast Years	N	γ_0	γ_1	γ_2	Adj. R ²
Pooled (1991-1997)	10,123	.030 (17.89)* [15.55]*	.505 (27.32)* [6.76]*	.326 (17.19)* [4.38]*	.700
<u>Pre-FASB regulation</u>					
1991	1,367	.035 (6.84)* [6.54]*	.164 (3.94)* [3.42]*	.681 (15.75)* [13.33]*	.657
1992	1,468	.040 (7.99)* [7.08]*	.568 (7.36)* [2.93]&	.256 (3.35)✓ [1.34]	.657
1993	1,553	.028 (6.61)* [6.23]*	.571 (9.01)* [5.66]*	.293 (4.56)* [3.00]#	.728
1994	1,579	.030 (7.68)* [6.92]*	.362 (7.25)* [2.77]✓	.452 (9.08)* [3.61]^	.732
1995	1,420	.029 (6.86)* [5.27]*	.479 (6.01)* [1.84]	.253 (3.11)+ [1.02]	.668
<u>Post-FASB regulation</u>					
1996	1,496	.021 (4.74)* [4.73]*	.704 (22.57)* [9.56]*	.206 (5.83)* [2.40]<	.727
1997	1,240	.022 (5.93)* [4.37]*	.727 (14.24)* [10.17]*	.102 (2.01)° [1.56]	.786

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b(OLS) and [White's] t-statistics are in parentheses.

^cPFR_t = R_t + Pledges Receivable_{t-1} - Pledges Receivable_t.

^dReplicating the regressions following Fama and MacBeth (1973) and Fama and French (2000) produced consistent results (untabulated).

*Significant at p-value<.0001; ^significant at p-value<.0003; ^significant at p-value<.0008; *significant at p-value <.0019; *significant at p-value<.0027; *significant at p-value<.0034; °significant at p-value<.0056; <significant at p-value<.0164; °significant at p-value<.0448

Table 14
Univariate Pooled Cross-Sectional Regressions^{a b}
(Post-Adopters)

**Panel A: Future Cash Inflows From Contributions (CIC_{t+1}) on
Current Contribution Revenue (R_t)**

$$CIC_{t+1} = \gamma_0 + \gamma_1 R_t + \varepsilon_{t+1}$$

Forecast Years	N	γ_0	γ_1	Adj. R ²
1991-1997	28,809	.028 (31.31)* [26.93]*	.762 (202.81)* [68.99]*	.588
1991-1995**	20,062	.025 (24.39)* [20.62]*	.775 (170.12)* [55.92]*	.591
1996-1997***	8,747	.033 (19.72)* [17.40]*	.738 (110.55)* [40.12]*	.583

**Panel B: Future Cash Inflows From Contributions (CIC_{t+1}) on
Current Cash Inflows From Contributions (CIC_t)**

$$CIC_{t+1} = \gamma_0 + \gamma_1 CIC_t + \varepsilon_{t+1}$$

Forecast Years	N	γ_0	γ_1	Adj. R ²
1991-1997	28,809	.027 (29.93)* [26.01]*	.757 (197.59)* [68.33]*	.575
1991-1995**	20,062	.025 (23.12)* [19.50]*	.761 (164.74)* [54.36]*	.575
1996-1997***	8,747	.032 (19.23)* [17.71]*	.748 (109.00)* [41.74]*	.576

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b (OLS) and [White's] t-statistics are in parentheses.

*Significant at p-value <.0001; **Pre-FASB Regulation; ***Post-FASB Regulation

Table 14 contd.
Univariate Pooled Cross-Sectional Regressions^{a b c}
(Post-Adopters)

**Panel C: Future Cash Inflows From Contributions (CIC_{t+1}) on
Pro-Forma Current Contribution Revenue (PFR_t)**

$$CIC_{t+1} = \gamma_0 + \gamma_1 PFR_t + \varepsilon_{t+1}$$

Forecast Years	N	γ_0	γ_1	Adj. R ²
1996-1997 ^{d ***}	8,747	.035 (21.26)* [19.11]*	.756 (110.84)* [40.45]*	.584

**Panel D : Non-Nested Model Selection Results Using
Vuong's (1989) Likelihood Ratio Test
Comparison of Model 1 v. Model 2^e**

Forecast Years	N	Z-statistic ^f	Significance ^g
<i>Contribution revenue (R) v. cash inflows from contributions (CIC)</i>			
1991-1997	28,809	3.89	<.0001
1991-1995 ^{**}	20,062	4.27	<.0001
1996-1997 ^{***}	8,747	1.13	<.2573
<i>Contribution revenue (R) v. pro-forma contribution revenue (PFR)</i>			
1996-1997 ^{***}	8,747	-.363	<.7167

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either contribution revenue or cash inflows from contributions are excluded.

^b(OLS) and [White's] t-statistics are in parentheses.

^cPFR_t = R_t + Pledges Receivable_{t-1} - Pledges Receivable_t

^dSince pre-adopters are defined as organizations that have recognized pledges in any of the five years preceding 1995, there would be no difference between contribution revenue and pro-forma contribution revenue in the pre-FASB regulation period.

^eH₀ = the competing models are equally close to the true data-generating process v. H₁ = one model is closer to the true data-generating process.

^fA Z-statistic that is positive and significant suggests that model 1 is closer to explaining the true data-generating process than model 2. A negative and significant Z-statistic suggests that the opposite is true.

^gReported significance levels are from a two-sided test.

*Significant at p-value <.0001; **Pre-FASB Regulation; ***Post-FASB Regulation

Table 14 contd.
Univariate Pooled Cross-Sectional Regressions^{a b}
(Post-Adopters)

Panel D contd.: Non-Nested Model Selection Results Using
Vuong's (1989) Likelihood Ratio Test
Comparison of Model 1 v. Model 2^c

Forecast Years	N	Z-statistic ^d	Significance ^e
<i>Pro-forma contribution revenue (PFR)^f v.</i> <i>cash inflows from contributions (CIC)</i>			
1996-1997 ^{g***}	8,747	1.53	<.1264

^a All observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either contribution revenue or cash inflows from contributions are excluded.

^b (OLS) and [White's] t-statistics are in parentheses.

^c H_0 = the competing models are equally close to the true data-generating process v. H_1 = one model is closer to the true data-generating process.

^d A Z-statistic that is positive and significant suggests that model 1 is closer to explaining the true data-generating process than model 2. A negative and significant Z-statistic suggests that the opposite is true.

^e Reported significance levels are from a two-sided test.

^f $PFR_t = R_t + \text{Pledges Receivable}_{t-1} - \text{Pledges Receivable}_t$

^g Since pre-adopters are defined as organizations that have recognized pledges in any of the five years preceding 1995, there would be no difference between contribution revenue and pro-forma contribution revenue in the pre-FASB regulation period.

***Post-FASB Regulation

Table 15
Univariate Annual Cross-Sectional Regressions^{a b c}
(Post-Adopters)

**Panel A: Future Cash Inflows From Contributions (CIC_{t+1}) on
Current Contribution Revenue (R_t)**

$$CIC_{t+1} = \gamma_0 + \gamma_1 R_t + \varepsilon_{t+1}$$

Forecast Year	N	γ_0	γ_1	Adj. R ²
<u>Pre-FASB regulation</u>				
1991	3,612	.029 (12.40)* [9.96]*	.743 (66.01)* [19.87]*	.547
1992	3,874	.026 (10.63)* [8.37]*	.773 (70.14)* [22.94]*	.560
1993	4,110	.029 (11.82)* [10.40]*	.763 (71.89)* [24.20]*	.557
1994	4,183	.021 (9.33)* [8.56]*	.834 (88.71)* [32.22]*	.653
1995	4,283	.023 (10.63)* [8.98]*	.751 (82.96)* [26.18]*	.616
<i>Pre-FASB regulation average</i>				.587
<u>Post-FASB regulation</u>				
1996	4,776	.035 (15.23)* [13.52]*	.747 (80.92)* [31.39]*	.578
1997	3,971	.030 (12.59)* [11.04]*	.726 (75.57)* [25.41]*	.590

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b(OLS) and [White's] t-statistics are in parentheses.

^cReplicating the regressions following Fama and MacBeth (1973) and Fama and French (2000) produced consistent results (untabulated).

*Significant at p-value <.0001

Table 15 contd.
Univariate Annual Cross-Sectional Regressions^{a b c}
(Post-Adopters)

**Panel B: Future Cash Inflows From Contributions (CIC_{t+1}) on
Current Cash Inflows From Contributions (CIC_t)**

$$CIC_{t+1} = \gamma_0 + \gamma_1 CIC_t + \varepsilon_{t+1}$$

Forecast Year	N	γ_0	γ_1	Adj. R ²
<u>Pre-FASB regulation</u>				
1991	3,612	.029 (11.86)* [9.64]*	.731 (63.99)* [19.68]*	.531
1992	3,874	.024 (10.11)* [8.16]*	.751 (67.78)* [22.90]*	.543
1993	4,110	.030 (11.59)* [10.10]*	.740 (67.73)* [22.64]*	.528
1994	4,183	.020 (8.55)* [7.74]*	.824 (86.97)* [31.32]*	.644
1995	4,283	.022 (9.90)* [8.27]*	.745 (81.64)* [25.70]*	.601
<i>Pre-FASB regulation average</i>				.569
<u>Post-FASB regulation</u>				
1996	4,776	.037 (15.67)* [14.54]*	.760 (79.76)* [32.02]*	.571
1997	3,971	.027 (11.33)* [10.38]*	.733 (74.73)* [27.12]*	.585

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b(OLS) and [White's] t-statistics are in parentheses.

^cReplicating the regressions following Fama and MacBeth (1973) and Fama and French (2000) produced consistent results (untabulated).

*Significant at p-value <.0001

Table 15 contd.
Univariate Annual Cross-Sectional Regressions^{a b c}
(Post-Adopters)

Panel C: Future Cash Inflows From Contributions (CIC_{t+1}) on
Pro-Forma Current Contribution Revenue (PFR_t)

$$CIC_{t+1} = \gamma_0 + \gamma_1 PFR_t + \varepsilon_{t+1}$$

Forecast Year ^d	N	γ_0	γ_1	Adj. R ²
<u>Post-FASB regulation</u>				
1996	4,776	.040 (17.03)* [15.37]*	.768 (81.10)* [31.11]*	.579
1997	3,971	.030 (12.86)* [11.55]*	.742 (75.97)* [26.16]*	.592

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b(OLS) and [White's] t-statistics are in parentheses.

^c $PFR_t = R_t + \text{Pledges Receivable}_{t-1} - \text{Pledges Receivable}_t$

^dSince pre-adopters are defined as organizations that have recognized pledges in any of the five years preceding 1995, there would be no difference between contribution revenue and pro-forma contribution revenue in the pre-FASB period.

*Significant at p-value <.0001

Table 16
Multivariate Cross-Sectional Regressions^{a b c}
(Post-Adopters)

**Panel A: Future Cash Inflows From Contributions (CIC_{t+1}) on
Current Contribution Revenue (R_t) and Current Cash
Inflows From Contributions (CIC_t)**

$$CIC_{t+1} = \gamma_0 + \gamma_1 R_t + \gamma_2 CIC_t + \varepsilon_{t+1}$$

Forecast Years	N	γ_0	γ_1	γ_2	Adj. R ²
Pooled (1991-1997)	28,809	.027 (29.99)* [25.79]*	.542 (32.90)* [13.95]*	.227 (13.73)* [5.91]*	.591
<u>Pre-FASB regulation</u>					
1991	3,612	.029 (12.18)* [9.78]*	.657 (11.20)* [6.61]*	.088 (1.50) [1.04]	.547
1992	3,874	.025 (10.35)* [8.22]*	.659 (12.41)* [7.48]*	.115 (2.20)+ [1.46]	.560
1993	4,110	.030 (12.13)* [10.80]*	.964 (16.97)* [8.83]*	-.204 (-3.60)^ [-2.01]#	.558
1994	4,183	.020 (8.91)* [7.85]*	.619 (11.19)* [5.45]*	.218 (3.96)* [1.85]&	.654
1995	4,283	.023 (10.28)* [8.60]*	.569 (9.75)* [4.01]*	.184 (3.16)✓ [1.31]	.617
<u>Post-FASB regulation</u>					
1996	4,776	.034 (14.77)* [13.30]*	.433 (13.92)* [7.77]*	.337 (10.58)* [5.91]*	.588
1997	3,971	.027 (11.28)* [10.15]*	.406 (13.02)* [5.57]*	.341 (10.77)* [4.67]*	.601

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b(OLS) and [White's] t-statistics are in parentheses.

^cReplicating the regressions following Fama and MacBeth (1973) and Fama and French (2000) produced consistent results (untabulated).

*Significant at p-value<.0001; ^significant at p-value<.0003; ✓significant at p-value<.0016; &significant at p-value <.0282; #significant at p-value<.0445; &significant at p-value<.0644

Table 16 contd.
Multivariate Cross-Sectional Regressions^{a b c}
(Post-Adopters)

**Panel B: Future Cash Inflows From Contributions (CIC_{t+1}) on
Pro-Forma Current Contribution Revenue (PFR_t) and
Current Cash Inflows From Contributions (CIC_t)**

$$CIC_{t+1} = \gamma_0 + \gamma_1 PFR_t + \gamma_2 CIC_t + \varepsilon_{t+1}$$

Forecast Year ^d	N	γ_0	γ_1	γ_2	Adj. R ²
Pooled (1996-1997)	8,747	.033 (19.79)* [18.08]*	.469 (16.99)* [7.42]*	.295 (10.72)* [4.80]*	.590
<u>Post-FASB regulation</u>					
1996	4,776	.037 (16.02)* [10.66]*	.476 (12.49)* [4.12]*	.300 (7.90)* [2.69]^	.585
1997	3,971	.028 (11.77)* [14.76]*	.458 (11.51)* [6.83]*	.291 (7.35)* [4.45]*	.598

^aAll observations are deflated by beginning of year total assets. Observations falling in the top or bottom 1% of either total revenue, contribution revenue or cash inflows from contributions are excluded.

^b(OLS) and [White's] t-statistics are in parentheses.

^cPFR_t = R_t + Pledges Receivable_{t-1} - Pledges Receivable_t

^dSince pre-adopters are defined as organizations that have recognized pledges in any of the five years preceding 1995, there would be no difference between contribution revenue and pro-forma contribution revenue in the pre-FASB regulation period.

*Significant at p-value<.0001; ^significant at p-value<.0071

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