

**The Role of Rating Agencies in the
Market for Charitable Contributions:
An Empirical Test**

By

Teresa P. Gordon

Professor of Accounting
University of Idaho
College of Business & Economics
Moscow, Idaho 83844-3161
(208) 885-8960
Fax: (208) 885-6296
E-mail: TGORDON@UIDAHO.EDU

Cathryn L. Knock

Graduate Student
University of Idaho
College of Business & Economics
Moscow, Idaho 83844-3161
(208) 885-6270
E-mail: cknock@vandals.uidaho.edu

and

Daniel G. Neely

Assistant Professor of Accounting
Sheldon B. Lubar School of Business
University of Wisconsin - Milwaukee
Milwaukee, Wisconsin 53211
(414) 229-4164
Fax: (414) 229-5999
E-mail: neely@uwm.edu

We express our appreciation to the editors, anonymous reviewers, and seminar participants at the 2008 Midyear Meeting of the American Accounting Association's Government and Nonprofit Section. The authors also acknowledge the financial support provided through the University of Idaho McNair Achievement Program.

**The Role of Rating Agencies in the Market for Charitable Contributions:
An Empirical Test**

ABSTRACT

Rating agencies presumably play the role of information intermediaries in the market for donations. These so-called watchdog organizations obtain and interpret accounting data and other information about charitable organizations and report ratings to help donors select among the many organizations soliciting contributions. In the age of the internet, information from Internal Revenue Service Form 990 returns prepared by tax-exempt organizations is more readily accessible than ever before. This study examines whether the zero- to four-star ratings provided by Charity Navigator have additional information content for donors. Charity Navigator was selected because its rating system relies almost exclusively on the 990 returns and presumably adds value by incorporating peer-group expectations for various ratios and by presenting straightforward and concise data. Using a random sample of 405 charities rated by Charity Navigator, our results suggest that rating changes do impact contributions. Positive rating changes were positively associated with an increase in contributions and organizations with a decline in rating were associated with decreased contributions. These effects were in addition to what would be predicted using an efficiency ratio commonly computed from Form 990 accounting data and other control variables.

**The Role of Rating Agencies in the Market for Charitable Contributions:
An Empirical Test**

1. Introduction

In obtaining contributions, charitable organizations compete with each other as well as alternate uses that potential donors have for their scarce resources. In an efficient market, donors would have access to sufficient information about potential charities to make wise giving decisions. In other words, they would choose not-for-profit organizations that efficiently and effectively addressed societal needs. Unfortunately, there are severe measurement challenges when it comes to evaluating the quality, value and effectiveness of charitable goods and services. In the long run, having revenues in excess of expenses is a condition necessary for organizational survival but the mere existence of a surplus tells a donor relatively little about effectiveness or efficiency of operations. Not-for-profit entities do segregate program expenses from those incurred for administrative activities and fundraising. This data make it possible to compute a surrogate that purports to measure efficiency: the ratio of program expenses to total expenses. A variation of this ratio is described as the cost to provide \$1 of charitable goods and services or price. Presumably, a rational donor would prefer a lower price to a higher price, assuming information is readily available and the amount of the anticipated contribution justified the effort required to access and interpret the information.

The information necessary for computing various financial ratios can be obtained from a tax-exempt organization's Form 990 information return filed annually with the Internal Revenue Service (IRS) and available through the World Wide Web. Given the intimidating nature of such returns, a number of rating agencies have arisen that analyze Form 990 returns as well as other data and provide donors with simple categorical evaluation scores. For example, the American

Institute of Philanthropy uses letter grades (A, B, C, etc.) while the Better Business Bureau's Wise Giving Alliance (give.org) tells donors whether or not a charity meets all of its standards. In this study, we examine the number of stars assigned by Charity Navigator to determine if such ratings have information content for donors.¹ We examine a random sample of 405 not-for-profit organizations to see whether increases or decreases in ratings are associated with increases or decreases in contributions received. We control for a traditional efficiency ratio (PRICE), expenditures on fundraising activities, organizational size, industry and year. The models tested include both a change specification and a levels specification.

Our results show that a change in rating is associated with a directionally consistent percentage change in contributions. In addition, the dollar amount of contributions in the current period is related to both the change in rating and the rating received in the prior period.

The results of this study should be of interest to policy makers concerned about the use of the Form 990 by donors and other stakeholders. Unlike the for-profit sector, audited financial statements of nonprofit organizations are generally private information but IRS returns are public information and therefore the most widely used source of financial data. Charity Navigator relies almost exclusively on the Form 990 data in its rating system. If the underlying data are misleading, reliance on either Form 990 or ratings derived from that data would potentially cause the misallocation of scarce donor resources.

¹ Lowell et al. (2005) identify the BBB Wise Giving Alliance, Charity Navigator, and the American Institute of Philanthropy as the three rating agencies that rate charities. We focus on the largest rating agency, Charity Navigator, which rates 10 times as many charities as either of the other organizations during our sample period and was listed by Badal (2007) as one of the best information sources on charities.

Several studies highlight inaccuracies in the financial information reported on the Form 990 (Gordon et al. 2007, Froelich et al. 2000, Fischer et al. 2002). However, the more important issue is related to the often poor cost accounting practices used to allocate expenses among overhead and program services. In at least some cases, it appears that charities deliberately misallocate expenses to make the organization more attractive to rating agencies, donors and regulators (Hager 2003a, pp. 50-51). Both administrative overhead (Krishnan et al. 2006) and fundraising costs (Keating et al. 2008) are often reported inaccurately on the 990 returns. A concern that donors may be relying too heavily on the Form 990 has been echoed by the Government Accounting Office, and the United States Senate Finance Committee (Lowell et al. 2005, p. 43).

The IRS has recently undertaken the task of overhauling Form 990 in an attempt to enhance transparency and accountability.² The returns that will be filed for years ending in 2008 will be substantially different in several ways but the changes to the first page are the most relevant for the public policy issues explored in this study. While the old form presented three lines for functional expenses (program, fundraising and management and general) on the first page, the original draft of the revised form would have gone a step further to show various ratios and percentages including the program expense to total expense ratio and fundraising expense as a percentage of contributions. The disclosure of ratios was universally opposed (IRS 2007, p. 4) and the final version removes even the totals for functional expenses from the first page in favor

² The 990 return had not been significantly revised since 1979. The IRS received over 650 comments about the discussion draft released in June 2007 (IRS 2007). Revisions were made and a new draft was issued in December 2007. The new form will be used for returns filed in 2009 for years beginning in 2008.

of expense categories like salaries and grants. Users of the new returns will have to go to the tenth page to find the information necessary to compute traditional ratios. This change could make charitable ratings even more attractive to donors who do not want to spend time searching for information on the new longer returns. Since the empirical evidence documented in this study suggests that donors are influenced by ratings, ratios and ratings based on flawed accounting data could change the way charitable contributions are allocated among not-for-profit entities.

The remainder of the paper is organized as follows. The next section reviews the existing literature and begins with a brief discussion of information desired or used by donors. Subsections present prior research using economic models of giving, an overview of not-for-profit rating systems, and the Charity Navigator system in particular. The next major section presents the hypotheses, methodology, and sample selection process. The results, limitations and conclusions round out the discussion.

2. Literature Review

There are currently over 850,000 public charities registered with the IRS and an estimated 370,000 churches and congregations that are not required to register. About 90 percent of U.S. households donate an average of \$1,623 to such entities annually (Vesterlund 2006, p. 568). The total contributions were nearly \$190 billion in 2004.³

³ For quick facts and figures about the not-for-profit sector, see the Urban Institute's National Center for Charitable Statistics (NCCS) at <http://nccs.urban.org/statistics/quickfacts.cfm> (accessed December 12, 2007).

Why do people give? Social exchange theory suggests that individuals give based on a reciprocal relationship where the donor gets something in return, such as status, recognition, or a good feeling from the giving (Gordon and Khumawala, 1999, p. 3). Religious and moral obligations such as helping the less fortunate are other factors that affect an individual's decision to engage in philanthropy (Gordon and Khumawala, 1999, p. 7). While requests via mail, telephone or broadcast media tend to trigger giving, major disasters such as September 11 and Hurricane Katrina may also prompt a spontaneous desire to help. Gordon and Khumawala (1999) provide a model to predict situations and circumstances that would motivate a donor to use financial data to select charities. In short, they argue that major or frequent donors could be expected to compare potential recipients, particularly in situations where the donor receives few tangible or intangible benefits from the charity. In contrast, donors motivated by status, reputation, or religious duty would be less likely to ask for or use financial information. Direct beneficiaries (listeners to public radio) and those desirous of "giving back" to organizations from which they received past benefits (universities, hospitals, etc.) would also feel little need for comparison shopping.

A variety of surveys indicate that donors appear to be concerned about the efficiency of not-for-profit organizations (Glaser 1994, p. 178). Efficiency is most often defined as the proportion of expenses used for mission-related program activities. When donors take time to research charitable organizations, they generally view charities that spend a large portion of their budget on programs as efficient and therefore a good choice for donations. A charity that spends

a large portion of its budget on administrative expenses and professional fundraisers is perceived as less efficient.⁴

The cost of \$1 worth of organizational output (often referred to as *price*) is defined as the reciprocal of program expenses over total expenses.⁵ This is a variation of a common ratio donors use when making decisions on a charity and its efficiency: they may calculate what percentage of expenses were devoted to mission rather than overhead. Other ratios include fundraising expense as a percentage of total expense, administrative expense as a percentage of total expense, and fundraising cost as a percentage of total contributions. Bennett and Savani (2003) found that attitudes about a charity's performance affected the ability of a charity to generate funds through donations, grants, etc. Specifically, a charity that is perceived as inefficient has a harder time increasing donations. They showed that if an organization provides donors with the proportion of fundraising expense, donors are better able to make educated

⁴ Tinkelman and Donabedian (2007) discuss an alternative four factor framework for evaluating the efficiency of not-for-profit organizations that does not rely on fundraising ratios although excessive fundraising costs would indirectly affect the program expenditure ratio (one of the four factors in the framework). The four factors combine to produce an accounting measure of efficiency. Unfortunately, the model requires statistics on units of service which are rarely available to donors.

⁵ In prior research, price has been defined in several ways. The initial paper (Weisbrod and Dominguez 1986) defined it as $(1 - \text{marginal income tax rate}) / (1 - \text{overhead costs} / \text{contributions})$. Since each individual faces the same tax bracket when deciding how much to donate, the marginal tax rate is generally omitted (Weisbrod and Dominguez 1986, pp. 88-89). In their analysis, both Weisbrod and Dominguez and Okten and Weisbrod (2002) actually omitted administrative costs from their computation of price (probably due to data set limitations). We follow an alternate variation used by Posnett and Sandler (1989) that divides overhead costs by total expenses instead of contributions and includes administrative costs as well as fundraising costs in computing overhead. The "formula" described in the narrative is a simplified version of the computation.

decisions. In a field-based study, Parsons (2007) also finds that a donor's exposure to positive accounting information in fundraising appeals can directly influence donations. In a laboratory setting involving a very small donation, 39 percent of donors were willing to view financial information to help them decide on the recipient (Buchheit and Parsons 2006, p. 683). In most cases, an asymmetry of information exists between donors and charities: the donor is usually not the recipient of the charitable goods or service and has little chance to determine if the quality of the output of the not-for-profit organization is satisfactory (Weisbrod & Dominguez 1986, p. 85).

Traditionally, donors had limited ways of obtaining financial information to make a wise decision on giving. A donor could request the financial statements of the organization or request a copy of the IRS Form 990. However, many organizations do not provide financial statements to donors so the 990 return is often the only available financial information. Prior to the enactment of the 1996 Taxpayer Bill of Rights 2 (TPBOR2), a donor had to go in person to the headquarters of the organization to get a copy of the Form 990 return. The enactment of TPBOR2 adds a requirement that a tax-exempt organization send a copy of the 990 to the requestor for a fee no higher than a reasonable charge for copying and mailing (TPBOR2 1996). Alternatively, the return can be made widely available through a web page.

2.1 Economic Models of Giving

A substantial body of research exists on the association of accounting measures with donations to not-for-profit organizations. Much of this research is at the aggregate level and uses information from Form 990 or equivalent returns filed with state agencies. An early study by Steinberg (1986a) models the donor's giving decision as a function of the change between current year and prior year fundraising expenses, administrative expenses, and service expenses.

Steinberg used a change specification because it is likely that the donation function varies across firms and years. His first difference model specification controls for firm specific effects such as ideology and location, while at the same time controlling for time specific effects such as the stage of the business cycle and the value of tax deductions provided to donors (Steinberg 1986a).

Despite the advantages of a change specification over a levels specification, the literature modeling the donor's giving decision has predominantly employed a log-linear levels specification. Weisbrod & Dominguez (1986) express the giving decision as a function of the prior year's fundraising expenses, price, the age of the organization, and the interaction of both age and fundraising expenses. The model they developed (below) assumes that variation in the level of contributions occurs only because of the donors' willingness to donate to a specific organization, otherwise known as the demand for the firm's output.

$$\ln DON_i = \beta_0 + \beta_1 \ln FUND_{-1i} + \beta_2 \ln PRICE_i + \beta_3 AGE_i + \beta_4 AGE_i \times \ln FUND_{-1i} + \mu_i \quad (1)$$

The dependent variable, $\ln DON$, is the natural logarithm of the dollar amount of contributions, gifts, and grants. The independent variables are $\ln FUND_{-1}$ which measures fundraising expenditures in the prior period, $\ln PRICE$ which is the natural logarithm of the cost of purchasing one dollar's worth of output, AGE which is the number of years the firm has existed as a not-for-profit, and finally the interaction between AGE and $FUND$ which attempts to account for the goodwill that is built over time. Variations of this model have been employed using IRS Form 990 data to estimate the responsiveness of donors to a number of economic variables (Tinkelman 1998, 1999, 2004; Okten and Weisbrod 2000). The coefficient of fundraising expenses is generally positive, suggesting that donations increase when the donors' cost of gathering information is reduced. This effect is counterbalanced by an indirect decrease in donations because donors disapprove of having their donations used for fundraising rather

than funding the programs of the charity. Accordingly, there is generally a negative coefficient on PRICE. AGE and related interaction terms have generally not been significant. Similar studies have been conducted in other countries including Canada (Callen 1994), the UK (Posnett and Sandler 1989, Khanna et al. 1995) and Singapore (Wong et al. 1998).

Only two prior studies of which we are aware have considered ratings as part of an economic model with donations received as the dependent variable. Both Tinkelman (1998) and Sloan (forthcoming) used the pass/fail ratings provided by the BBB Wise Giving Alliance or its predecessor organizations. Using data from 1991 and 1992, Tinkelman (1998) used a dummy variable coded in such a way that the coefficient would be negative if ratings impact donations. While the coefficients were negative his models, they were rarely significant. Price, fundraising expenses, total assets and age were generally significant in the models for total donations and individual donations. Sloan (forthcoming) looked at New York charities with BBB Wise Giving Alliance ratings in 1999 and 2000. Multiple dummy variables were used to code pass, fail, and undetermined ratings. Only the coefficient on the “pass rating” variable was statistically significant. As with the Tinkelman study, negative ratings did not seem to have a detectable impact on donations.

2.2 The Role of Information Intermediaries

Information intermediaries play an important role in digesting complex and voluminous information sets in order to provide a simplified metric that can be utilized by stakeholders in making their resource allocation decisions. Dichev & Piotroski (2001) find a negative abnormal return the year following a bond rating downgrade. After controlling for the prior rating level, bond rating upgrades are found to be associated with a positive subsequent return (Jorion and

Zhang 2007). In the market for municipal bonds, Harris and Piwowar (2006) find that an increase in credit risk (provided by the bond rating agencies) is associated with an increase in bond trading costs. Kisgen (2006) finds that firms will alter their capital structures in advance of a credit rating change.

Analysts also play an important role in the buy and selling of stocks. Malmendier and Shanthikumar (2007) find that small investors faithfully follow (buy when the analyst issues a buy recommendation, hold the stock when the analyst issues a hold recommendation) the recommendation of stock analyst regardless of potential bias. This finding is particularly interesting because a long line of academic studies have documented a persistent optimistic bias in analyst forecasts (Lin and McNichols 1998, Hong and Kubik 2003, Cowen et al. 2006). While a developed literature exists on the role of information intermediaries in the stock and bond markets, comparatively little is known about the role of information intermediaries in the market for charitable goods. The next subsection discusses the information intermediaries in the charitable goods market.

2.3 Rating Not-for-profit Organizations

Due to the lack of information available in the past and/or the difficulty in obtaining the information, donors often found it hard to make a decision about which organizations were worthy of their donations. The National Charities Information Bureau (NCIB) was the first U.S. rating agency. It was established in New York in 1918 to combat perceived abuses in fundraising for war relief agencies. The Better Business Bureau formally began rating charities in 1945 with its Philanthropy Advisory Service (PAS). NCIB and PAS merged in 2001 to form the BBB Wise Giving Alliance (give.org). This organization uses 20 standards that go beyond financial

efficiency and stability to include governance, performance measurement, and quality and accuracy of fundraising materials. The time-intensive evaluation process limits the number of organizations that can be rated. According to Lowell et al. (2005), the ratings at give.org are primarily useful for weeding out deceptive and poorly managed charities. There is no ranking between or differentiation among the 500 or so charities that do meet all standards. A direct competitor of the BBB Wise Giving Alliance is the American Institute of Philanthropy (AIP) which was established in 1992. This organization uses audited financial statements in addition to Form 990 returns to evaluate over 500 charities using a letter grade system (A through F). AIP makes various adjustments to reported financial data (for example, joint costs of fundraising appeals deemed inappropriate) and selected modification to numeric standards for particular types of organizations. Minimal information is available at its charitywatch.org website unless an individual becomes a member (\$40 per year for individuals). Charity Navigator was established in 2001 and now rates over 5,300 charities, far more than any other rating organization. It uses a methodology that draws information almost exclusively from Form 990 returns.⁶ BBB Wise Giving Alliance reports and Charity Navigator reports are available free on-line although they too solicit donor support for their own operations. All three services have seen exponential increases in “hits” particularly following major disasters like the tsunami of 2004 and Hurricane Katrina in 2005 (Lowell et al. 2005).⁷

⁶ According to its website, Charity Navigator had over four million users in 2007 and has been acclaimed by numerous publications as among the best or most useful websites.

⁷ In late 2000, a fourth specialized rating agency was launched. MinistryWatch.org provides donors information about the 400 largest Christian ministries in the U.S. It uses a five-star rating system for efficiency and gives letter grades (A to F) for transparency – how responsive the organization is to requests

All existing rating systems are flawed for several reasons. Most importantly, no one has found a way to rate charities with respect to the quality of services provided or the effectiveness of their approaches to solving societal problems. All the rating systems rely, to some extent, on financial ratios and other data derived from Form 990 returns or audited financial statements. However, using financial analysis alone fails to take into account qualitative factors like the progress an organization makes toward achieving its mission (Hager and Greenlee, 2004, p. 93). Tinkelman and Donabedian (2007) discuss the limitations of using ratio analysis to evaluate charities. Principally, they argue that “accounting ratios are incomplete performance measures” (p. 9). While almost all rating systems rely on various “efficiency ratios” like the program expense ratio, Tinkelman and Donabedian argue that organizational efficiency cannot be evaluated without assigning values to the services and goods provided by an organization (p. 6).

Another issue relates to economic concepts regarding the correct way to make decisions. Economists like Steinberg (1986b) call for the use of marginal rather than average costs. Typical ratios such as the cost to provide \$1 of program services or the cost to raise \$1 in donations provide average costs rather than the marginal costs upon which rational decisions should be based. In a recent empirical study, Tinkelman (2006, p. 461) reports that the average historical ratios do not provide a useful proxy for marginal fundraising ratios and thus supports Steinberg’s contention that small donors would be “better off ignoring information on fundraising share” (Steinberg 1986b, p. 357). Fundraising ratios also vary depending on the strategies and

for information. A report from the National Council of Nonprofit Associations and the National Human services Assembly details other types of rankings and accreditation efforts (NCNP 2005).

opportunities of particular charities (Baber et al. 2001).⁸ For example, it is costly to make appeals to widely-dispersed groups of small donors, particularly for less popular or more controversial missions. Thus it may be illogical to “punish” organizations with bad ratios,⁹ and rating systems that set limits on fundraising costs may, in the end, lead to accounting manipulations rather than reform.

Rating systems are also vulnerable to poor data and can only be as reliable and relevant as the underlying financial information that goes into the procedures used. There is evidence that charities may manipulate reported fundraising and administration expenses for both financial and tax reporting purposes. In fact, many organizations charge no expenses to fundraising (Hager and Greenlee 2004, p. 92). Accordingly, misinformation is a pervasive problem affecting anyone who uses Form 990 data directly or indirectly through reliance on ratings from Charity Navigator or other watchdog agencies. When rating agencies establish benchmarks, like a maximum for the cost to raise \$1 in donations, they increase pressure on not-for-profit organizations and create incentives for the distortion of financial statements in order to obtain better scores. This situation is equivalent to the problem of earnings management that occurs in the corporate world (Hager and Greenlee 2004, p. 93). As discussed in Section 2.1, a large body of empirical research shows that “financial ratios are deemed important by donors” even though the usage may be driven by

⁸ See also Tinkelman (2004). He reports the elasticity of fundraising falls between zero to one in a way that is consistent with a variety of managers’ fundraising strategies that range from the maximization of program services to the maximization of organization size. The average elasticity for charities that have fundraising costs ranged from a high of 0.44 (scientific research) to essentially zero (hospitals and higher education had insignificant coefficients – see his Table 3, Panel B, page 2188).

⁹ A series of Supreme Court decisions has struck down various laws intended to regulate fundraising activities or set limits on how much can be spent on fundraising, most recently with decisions in 2003. A short review is provided in Tinkelman (2006).

availability of financial data coupled with the lack of anything better. (Tinkelman and Donabedian 2007, p. 5).

2.4 Charity Navigator

For this study, we look specifically at ratings from the largest of the rating organizations: Charity Navigator. Charity Navigator focuses its efforts on charities that rely on public support and actively solicit donations from the general public.¹⁰ They exclude private foundations and organizations exempt from filing Form 990 (for example churches). Once charities are selected for inclusion in the database, Charity Navigator rates the organization using the seven performance categories shown on Table 1. The overview in Table 1 is a simplified description compiled from the extensive documentation found at the Charity Navigator website in mid-2007. In addition to the basics shown, Charity Navigator makes various adjustments to the percentage ranges for charities with special circumstances. For example, food banks receive large amounts of in-kind contributions and operate with limited working capital. Museums, on the other hand, incur substantial overhead expenses to conserve and maintain their collections. Charity Navigator updates its rating on the first of the month following a new 990 filing.¹¹

Insert Table 1 about here

¹⁰ Selection criteria used by Charity Navigator to choose which not-for-profit organizations to rate are discussed at more length in Section 3.3.

¹¹ A notable time lag in updating a rating may exist because the IRS frequently grants filing deadline extensions to tax-exempt organizations for up to 10 months after the end of the fiscal year.

3. Methodology

Given the existing literature, we know that there is a relationship between price, fundraising expenditures, and charitable donations. For those donors who want to make an informed giving decision without the effort of computing ratios themselves from publicly available 990 returns, rating agencies like Charity Navigator may be both useful and influential. Assuming an efficient market for donations, we anticipate that a change in Charity Navigator ratings would lead to changes in the allocation of donations among charitable organizations. This premise leads to our research hypotheses:

- H1: A positive/ (negative) change in rating by Charity Navigator is associated with a positive/ (negative) percentage change in contributions to a not-for-profit organization.
- H2: The level of current year contributions is a function of the current year change in Charity Navigator rating and the prior year rating of the organization.

3.1 Specification of Models

To test our hypotheses, we primarily use financial data and ratings obtained from the Charity Navigator website.¹² This data can be analyzed by two different specifications: the dependent variable can be examined as the change in contributions or the ending level of contributions. In a critique of the capital markets literature employing both cross-sectional change and levels specifications, Landsman & Magliolo (1988) list three major advantages of the change specification compared to the levels specification. First, a change specification may provide a more theoretically correct model for interpreting the research question of interest.

¹² Charity Navigator does not report direct public support on its website. This data was obtained from Form 990 returns posted at the [guidestar.org](http://www.guidestar.org) website.

Second, a change specification implicitly controls for size and thus mitigates the problem of heteroscedacity. Finally, a change specification controls for unobservable variables that remain constant over time and could influence the results.¹³ Since we are interested in the impact of a change in ratings on the change in donations and given the econometric advantages of a change specification, we employ a percentage change model in our analysis. A levels specification with controls for size provides sensitivity analysis and another window on the issue. Our levels analysis uses a log-linear model that is a variation on Weisbrod & Dominguez (1986) and our change model is intended to parallel our levels model rather than replicate change models used in earlier research by Steinberg (1986a) and Tinkelman (1999).

Specifically, we test the following change specification model:

$$\text{CONTCHG}_t = \beta_0 + \beta_1 \text{RATECHG}_t + \beta_2 \text{FRCHG}_t + \beta_3 \text{FRCHG}_{t-1} + \beta_4 \text{PRICECHG}_{t-1} + \mu_i \quad (3)$$

Where:

- CONTCHG_t = the percent change in the dollar amount of direct contributions and gifts received by the organization during the current year.
- RATECHG_t = takes the value of the rating change between the current year and the prior year (example: a one star decrease = -1, a two star increase = 2, etc.).
- FRCHG_t = the percent change in the firm's expenditures on fundraising in the current year.
- FRCHG_{t-1} = the percent change in the firm's expenditures on fundraising in the prior year.
- PRICECHG_{t-1} = the percent change in prior year PRICE [defined as $1 / \{1 - (\text{fundraising expense} + \text{administrative expense}) / \text{total expense}\}$].

¹³ In not-for-profit research on contributions, Steinberg (1986a) is the original proponent of change specifications. To our knowledge, only Tinkelman (1999) has attempted a replication of Steinberg's approach. He includes prior year change in price with Steinberg's variables (change in current and prior year fundraising, administrative and program expenses).

Our change specification is a departure from the Tinkelman (1999) specification in two notable ways. First, our main analysis does not control for lead and lag values of the change in administrative expenses and the change in program expenses. We do not believe there is a strong theoretical justification for including these variables in addition to the change in PRICE and therefore exclude them from the analysis. However, when these variables are included in the model the results are qualitatively similar (results available from the authors upon request). The second notable distinction is that our model considers the *percent* change in values not the *raw* change in values. Tinkelman (1999, p. 147) notes that the presence of extreme observations reduces the robustness of his model. The advantage of considering the percentage changes is that we are removing the influence of size on the statistical inferences we make. Therefore, our change analysis is performed on the *percent change* in the dependent and independent variables.

For the levels specification, we test a variation of the log-linear models used by Weisbrod and Dominguez (1986), Okten and Weisbrod (2000), and Tinkelman (1999):¹⁴

$$\ln\text{CONT}_t = \beta_0 + \beta_1 \text{RATECHG}_t + \beta_2 \text{RATE}_{t-1} + \beta_3 \ln\text{PRICE}_{t-1} + \beta_4 \ln\text{FREXP}_{t-1} + \beta_5 \ln\text{ASSETS}_{t-1} + \mu_i \quad (2)$$

Where:

$\ln\text{CONT}_t$ = the natural logarithm of the dollar amount of direct contributions and gifts received by the organization during the year.

RATECHG_t = the value of the rating change in the current year (example: a one star decrease = -1 and a two star increase = 2, etc.).

¹⁴ As noted earlier, PRICE was defined differently by Weisbrod and Dominguez (1986) and Okten and Weisbrod (2000) and their models have several additional independent variables including other types of revenue (to test for crowding-out effects), age and an interaction term between age and fundraising expenses. Tinkelman (1999) computes PRICE as we do but includes variables for other sources of revenues, age and assets (as a size variable) but omits the interaction term.

- $RATE_{t-1}$ = the number of stars received in the prior year.
 $lnPRICE_{t-1}$ = the natural logarithm of PRICE [defined as $1 / \{1 - (\text{fundraising expense} + \text{administrative expense}) / \text{total expense}\}$] during the year prior to the rating change.
 $lnFREXP_{t-1}$ = the natural logarithm of the firm's expenditures on fundraising in the prior year.
 $lnASSETS_{t-1}$ = the natural logarithm of total assets in the year prior to the rating change.

The dependent variable $lnCONT_t$ is contributions that result from factors including a change in Charity Navigator rating. It is also a proxy for the demand for the organization's charitable services.¹⁵ The rating change variable captures the change in an organization's Charity Navigator rating. We also control for the prior year rating of the charity to allow the impact of the rating change to vary by the beginning level of the rating. $LnFREXP_{t-1}$ captures the delayed effect that fundraising expenses have on donations. Fundraising expenses will typically drive future donations in the same way that advertising expenses increase future sales for business entities. The price offered by the organization, $lnPRICE_{t-1}$, is defined as the cost to a donor of purchasing one dollar's worth of the organization's output.¹⁶ Tinkelman (1999) considered size to be an indicator of "lower price sensitivity for smaller organizations, due to lesser accessibility and reliability of expense ratios for smaller organizations." Size may be less of a factor for donors who utilize Charity Navigator's ratings because the information is readily available and the charities selected for ratings are systematically larger. Nevertheless, we include size as a control variable in the analysis. Other control variables include industry and year. We

¹⁵ The economics-based literature makes the argument that donors are interested in purchasing charitable outputs, not in giving money per se. Therefore, contributions represent the demand for collective goods and, accordingly, donors desire information on price and quality. For example, see discussion in Okten and Weisbrod (2000, p. 257).

¹⁶ As discussed earlier, we follow the Posnett and Sandler (1989) computation of price which simplifies to the reciprocal of the program expense ratio or 1 divided by (program expenses/total expenses).

do not include alternate sources of revenue to test for any crowding-out effects¹⁷ because, by Charity Navigator selection criteria, the sample organizations rely primarily on public support.

Insert Table 2 about here

3.2 Sample Selection

To test our hypothesis, we obtained the names of all organizations listed on the Charity Navigator website as of June 20, 2007. From this list of 5,233 organizations, we selected a random sample of 525 organizations. The ratings and three years of financial data for these entities were gathered from the website. As shown in Table 2, Panel A, we were interested in organizations that had three years of sequential financial data and whose fiscal year end did not change. We also excluded organizations that reported zero fundraising expenses in at least one year (see Tinkelman 1999). As a result, the final sample size was reduced from 525 to 405 organizations with usable data. Table 2, Panel B reports the frequency for each of the Charity Navigator ratings for the most recent year along with statistics on the overall numeric ratings from which the decision as to number of stars depends (see Table 1). The zero-star category was the smallest (less than two percent); the three-star category was the largest and accounted for 35 percent of the overall sample.

¹⁷ The research studies described in Section 2.1 produced mixed results as to whether government funding or fees charged for program services cause donors to give less (the crowding-out effect). See also Kingma (1995).

3.3 Comparison with Population

The Charity Navigator selection process results in a population of rated charities that differs significantly from the population of all tax-exempt organizations. According to the Charity Navigator website, the charities selected for rating are all classified as 501(c)(3) tax-exempt entities, have at least four years of 990 returns available and have more than \$500,000 in public support.¹⁸ From this set of potential organizations, they eliminate charities that receive almost all funding from government grants or program service fees. They also eliminate charities that report zero fundraising expenses because that would indicate that they are not actively soliciting donations from the general public. Charity Navigator also makes an attempt to balance the mission and geographic distribution of entities selected for rating. As of June 2008, Charity Navigator reports that it is not adding any hospitals, hospital foundations, universities or colleges, land trusts, community foundations or PBS stations.

Insert Table 3 about here

Table 3 shows how our random sample and the Charity Navigator population compare with population data (generally from published sources). Panel A demonstrates how the selection criteria used by Charity Navigator affects size as measured by total expenses. The rated entities are substantially larger than the population. The smallest entities dominate both the Charity Navigator population and sample as well as the general population: organizations with less than \$3.5 million in expenses comprise 44 percent of the Charity Navigator population but 90 percent

¹⁸ These criteria automatically eliminate private foundations, religious entities that are exempt from filing Form 990, and 501(c)(4) organizations that spend substantial portions of their revenue on lobbying activities.

of all 501(c)(3) entities. As result of this extreme difference, the other two size categories are greatly over represented as compared to the general population with a third of Charity Navigator entities falling between \$3.5 million to \$13.5 million as compared with just six percent of the general population and 23 percent of Charity Navigator organizations have more than \$13.5 million as compared with just four percent of the general population.¹⁹

Table 3, Panel B shows that the random sample reasonably represents the various industry or mission groups used by Charity Navigator. We provide two general population comparisons. The first comparison is with the population of all tax-exempt entities filing with IRS in 2005. The second comparison is with data on how individuals allocate their giving among various causes. Nearly a third of all contributions went to religion-related entities in 2005 but these organizations are under-represented in the population of tax-exempt entities since they are exempt from filing. Charity Navigator apparently balances the selection of charities they rate to accommodate donor interest: religious entities that file Form 990 voluntarily comprise nearly seven percent of Charity Navigator rated entities even though they are less than one percent of the population of all tax-exempt filers. Another notable difference is the animal and environmental group which comprises 3.4 percent of all filers and receives 4.6 percent of all non-religious contributions. Over 13 percent of the Charity Navigator population falls into this

¹⁹ We were unable to compare functional expenses to the general population but our median 10.3 percent administrative cost ratio (Table 4, Panel B) is slightly lower than the 12.2 to 14 percent range reported by Pollak and Rooney (2003). The mean and median program expense ratio was almost exactly the same as reported by Krishnan et al. (2006, p. 407) for their final sample: our median was 80 percent as compared to their 81 percent and our mean was 79 percent as compared to their 77 percent. The elimination of not-for-profits reporting no fundraising expenses causes a large difference between sample and population: fundraising expenses divided by total expenses averaged nearly 10 percent for our sample as compared to just over one percent for the general population (derived from NCCS 2005 Core File).

category. The recent decision to exclude hospitals and higher education may explain the under-representation of health and education entities among the Charity Navigator population.

Table 3, Panels C and D compare revenue sources and growth rates for public support, respectively. As might be expected from the Charity Navigator selection criteria, our sample receives a much higher proportion (73 percent) of revenues from public support as compared to other charities (21.3 to 40.3 percent). According to the 2008 *Nonprofit Almanac*, support from households reached a high in 2000, declined in 2001, grew slightly in 2002 and 2003 and showed a steep increase in 2004 after which the growth rate appears to be similar to the 1995 to 2000 period (see Wing et al., 2008, p. 117). The data from our sample may reflect these trends for the first two years of available data. However, in the most recent data, the Charity Navigator rated organizations seem to have experienced a much higher growth rate in public support as compared to data on the population of all not-for-profits serving households. There may be a leverage effect: Charity Navigator charities receive a much higher than average proportion of revenues from contributions. Therefore, as the pool of contributions increases, they receive a larger share of the increase. The other potential explanation is that the Charity Navigator website has become increasingly well known since its début in 2001. As donors use its ratings to select charities, the rated agencies may have benefited from the additional exposure they receive as compared to the larger population of unrated charities.

4. Analysis and Results

Descriptive statistics for the accounting figures that are reported on the Charity Navigator website are presented in Table 4, Panel A. Our sample includes a broad assortment of organizations ranging from small to very large. End-of-the-year total assets, our proxy for size,

ranges from \$43 thousand to over \$7 billion with an average of \$120 million and a median of \$8 million. Revenues averaged \$46 million and ranged from \$478 thousand to over \$2.5 billion with the median at \$5.7 million.²⁰ Panel B of Table 4 shows several commonly used ratios that Charity Navigator reports as well as its numeric ratings. The charities in the sample reported that 79 percent of their expenses were dedicated toward delivering program services. The cost to raise one dollar of contributions ranged from less than a penny to 84 cents.²¹ PRICE, as stated previously, is defined as the cost to a donor of purchasing one dollar's worth of the organization's output. A lower price means donors are getting more for their dollar. In this study the minimum for PRICE rounded to \$1.00 and the average was \$1.34 with a median price of \$1.24. Unfortunately, the data suggests that it could cost the donor up to \$14.73 for every dollar's worth of mission-related output (see maximum on Table 4, Panel B). The numeric Charity Navigator efficiency score averaged 33 out of 40 points available and the capacity score averaged 19 points out of 30 available (see Table 1 for total possible points available and Table 4, Panel C for averages by industry). For all three of the numeric Charity Navigator scores, the means and medians are close to each other.

²⁰ The largest organizations were New York University (based on total revenues) and Duke University (based on total assets). Both universities had four star ratings. The smallest organization with respect to revenues was an environmental organization with a one star rating. The organization with the lowest reported assets was a public benefit organization with a zero star rating.

²¹ Charity Navigator computes the cost to raise \$1 in public support (both direct, indirect and government grants). The cost to raise \$1 in direct public support for our sample averaged \$0.18 for the most recent year with the median at \$0.12. The cost ranged from a low of less than a penny to a high of \$3.84.

Table 4, Panel C shows the sample organizations broken out by mission. Nine of ten major not-for-profit industry categories are represented in the sample. The industry with the most observations is human services (18.5 percent of sample) but education has the largest entities in terms of total assets, followed by environmental organizations (the smallest portion of the sample). Medians may be more informative given the diversity of organizations: the median education organization has \$53 million in assets followed by \$35 million for arts, culture and humanities organizations. This is far larger than the median religious organization which reports less than \$2 million in assets. A means test confirms that size varies significantly by industry. The numeric Charity Navigator scores are also reported by industry in Panel C. While the differences are statistically significant, the range is relatively modest. The low is for arts and culture organizations with a score of 48 (two stars) as compared to the high of 57 (3 stars) for international organizations.

4.1 Univariate Analysis

As a preliminary examination of the impact of rating changes, we compare the mean percentage change in contributions between the first and third years of available data in Table 5. When donors access the Charity Navigator website, they first see the number of stars and financial data for the most recent available year along with names and ratings of a selection of competing charities. If they are registered users, they can also see the ratings and financial data for two previous years (registration is free). Accordingly, donors may be influenced by both the number of stars currently achieved and the trend over the three-year period. An organization with improving ratings might be more favorably viewed than an organization that reports a declining trend in ratings. As shown in Table 5, both the level achieved (Panel A, zero to four stars) and

the patterns of rating changes (Panel B) show differential trends in percent change in contributions between the first and the third years. The four-star organizations had the highest mean and median growth in direct public support over the three year period studied. Organizations that had at least one increase in rating during the period also reported mean and median growth rates in excess of those received by the “no change” group. Those that reported at least one decrease in rating had mean and median growth rates in direct public support that were less than the “no change” group.²² We also tested to see if the percentage increase in direct public support varied by year or industry and found no significant difference in means (not reported in tabular form). Note, however, that size and Charity Navigator ratings did vary depending on industry (see Table 4, Panel C).

The association between change in contributions and rating changes is confirmed with the correlations between variables of interest as reported in Table 6, Panel A. The signed rating change variable is positively and significantly correlated with the percentage change in direct public support received in the current year (Pearson $r = 0.27$ and Spearman $r = 0.37$, both significant at the $p=.01$ level). Table 6, Panel B likewise shows that direct public support is positively and significantly correlated with the prior year rating (Pearson $r=0.16$ and Spearman $r=0.15$, both at the $p=0.01$ level).

The correlation matrices in Table 6, Panels A and B are also used to examine the potential for of multicollinearity in the regression models. In Panel A, the variables of interest in

²² On the “Historical Data” tab at Charity Navigator, total public support is labeled “contributions.” When we analyzed this figure (rather than just the direct public support component), the growth in total public support over the three-year period also differed significantly by star ratings and the pattern of rating changes that is substantially the same as reported in Table 5, Panels A and B for direct public support (direct contributions).

the primary model specification we employ are not highly correlated with the control variables introduced in the model. In Panel A, the largest Pearson (Spearman) correlation between independent variables is 0.25 (0.40) between change in fundraising expenses and change in PRICE. This relationship is anticipated because the price to provide \$1 in charitable goods and services increases as more of the charity's spending is devoted to fundraising activities.

The correlations for the log-linear levels specification show considerably more potential for multicollinearity problems since the dollar amounts tend to be highly and positively correlated with each other (Pearson correlation coefficients between total assets, contributions, and fundraising expense range from 0.49 to 0.71). For the independent variables of interest not measured in dollars, the largest Pearson (Spearman) correlation coefficient is -0.19 (-0.55) between PRICE and the star rating given by Charity Navigator.²³ This relationship is anticipated because three of the seven indicators used by Charity Navigator are dollar amounts that can be used to derive PRICE (see Table 1).

4.2 Multivariate Analysis

Table 7 (first column) displays the results for our basic change specification model described earlier. This model is statistically significant with adjusted R^2 of .08. The rating change variable has a coefficient of 0.39 with a t-statistic of 2.90 which is consistent with H1.

²³ Multicollinearity is generally not a concern unless the independent variables are extremely collinear with correlation coefficients of 0.80 or above (Kennedy 2003, p. 209). In addition, the highest variance inflation factor for any independent variable in the reported analysis is 2.78 which is well below ten, the level at which collinearity becomes a concern according to Kennedy (2003, p. 213).

Both of the changes in fundraising expense variables were positive and significant while the price variable was negative and significant. Note that price was not significant in earlier change models examined by Steinberg (1986a) and Tinkelman (1999).

We conjecture that the size of the organization might influence the relation between rating changes and changes in current year direct public support. We categorize organizations as small, medium, or large to correspond to Charity Navigator's size classifications.²⁴ Interestingly we find no direct impact on change in contributions across the size groups (second column of Table 7). However, the interaction term between rating change and medium-size charities is negative and significant: the coefficient is -0.26 with a corresponding t-statistic of -2.42).²⁵

The tenor of the results is qualitatively similar if we control for whether the organization is rated by another rating agency (third column of Table 7). Specifically, including a dummy variable for whether the organization is also rated by another rating agency²⁶ and interacting the dummy variable with the rating change variable results in a failure to reject the null that organizations rated by other rating agencies receive an equivalent amount of direct public support for a given rating change compared to organizations rated exclusively by Charity Navigator. To further examine whether the effects reported above result from ratings and

²⁴ Charity Navigator categorizes organizations as having expenses below \$3.5 million (our small group), between \$3.5 million and \$13.5 million (our medium group), and greater than \$13.5 million (our large group).

²⁵ As an alternative proxy for size, we consider the natural log of assets in lieu of the Charity Navigator size classifications for both the level and change analysis. The interaction term of the natural log of assets and the rating change variable is not statistically significant and the adjusted R^2 for the models is lower than is the case when we use the Charity Navigator size classifications (for both the level and change analysis). We therefore do not tabulate the results for the interaction of the natural log of assets and the rating change variable.

²⁶ The dummy variable takes the value of 1 if the organization was also rated by American Institute of Philanthropy (AIP) as of April/May 2007 or the Better Business Bureau Wise Giving Alliance (BBB) as of August 2005.

evaluations by other watchdog groups, we included a dummy variable (and interact the dummy variable with the rating change variable) for whether the organization was rated by either AIP or BBB or was affiliated with a national organization rated by either AIP or BBB. The results (not reported) are qualitatively similar to the results reported for organizations rated directly by AIP or BBB.

While the change specification controls for omitted variables that are static over time, the log-linear model is the specification that has dominated the economic literature on giving. Table 8 reports the results of the log-linear specification. The first column presents our basic levels model: all coefficients are significant and carry the expected sign and the adjusted R^2 is 0.66. Consistent with H2, we find that an increase or decrease in the Charity Navigator star rating is associated with a corresponding increase or decrease in the level of donations (the coefficient of $RATECHG_t$ is 0.23 with a t-statistic of 5.30). The baseline provided by the prior year rating also appears to be useful to donors (the coefficient on $RATE_{t-1}$ is 0.26 with a t-statistic of 6.44).

Interestingly, the levels analysis reveals a slightly different finding for the sensitivity of the main result to size. In contrast to the change analysis, the level of donations varies across the three size groups with the largest charities getting the biggest impact (coefficient of 1.58 with t-statistic at 11.35) followed by the medium-size charities (coefficient of 0.67 with t-statistic at 8.57). In addition, the interaction between medium-size organizations and the rating change variable is no longer statistically significant (second column of Table 8) although the interaction term for large organizations is marginally significant (coefficient of -0.16 with t-statistic at -

1.69).²⁷ The effect of having more than one organization rate the charity is examined in the model presented in the third column of Table 8. Unlike the change specification in Table 7, the coefficient on the dummy variable that indicates multiple ratings is positive and significant. However, there is no measurable change in adjusted R^2 as compared to the base model in the first column. In both the change and levels specifications, the relation between current year direct public support and the current year rating change does not appear to be sensitive to controlling for whether an organization is rated by more than one rating agency.

Overall, we find that a change in Charity Navigator ratings is associated with a directionally consistent change in donations. This result holds when we employ either a change specification or a levels specification with appropriate controls for prior year price, fundraising expenses, size, year, and industry. Our results are consistent with donor usage of the ratings provided by Charity Navigator, or information highly correlated with the ratings they provide.

4.3 Sensitivity Tests

Several sensitivity tests are run to ensure the robustness of our main findings. For our change analysis, it is possible that the current change in fundraising expense is endogenous. In other words, the organization could be spending more on fundraising because more donations are flowing into the organization. The results are qualitatively similar to those shown in Table 7 when we remove the current year change in fundraising expense. While the robustness of the main finding mitigates the concern that donors are responding to information correlated with the

²⁷ This result is not robust and becomes statistically insignificant when robust regressions are run to mitigate the influence of outliers. See footnote 28 for more detail on robust regressions.

rating change, we further test this proposition by controlling for the prior year change in contributions. The concern is that the Charity Navigator rating is partially driven by the prior year contribution change (primary revenue growth score, see Table 1) and that controlling for the prior year change in contributions might negate the main finding. For both the change and levels analysis, the results are qualitatively similar when the lag of contributions is included as an additional control variable.

Prior research used direct public support as the dependent variable in economic models of giving. However, Charity Navigator reports contributions from all sources (direct contributions, indirect contributions, and government grants) as their measure of contributions. To test if the results are sensitive to the definition of contributions, we replicate the analysis defining the dependent variable as total contributions as reported by Charity Navigator. The results are qualitatively similar.

To control for the fact that part of the variation in the change in contributions could have come from the prior year change in ratings, we separately run the analysis controlling for the prior year change in rating. Interestingly, we find that the prior year's change in rating does not help explain the current year's change in contributions (results not tabulated). This result supports the notion that donors are more concerned about current changes in ratings and do not significantly weigh prior year rating trends.

Finally, to test the robustness of our findings to influential outliers, we rerun the reported analysis with robust regressions. Controlling for influential outliers strengthens the main finding

that a change in rating is associated with a directionally consistent change in direct public support.²⁸

4.4 Limitations

As discussed in Section 2.3, the two major public policy issues related to all existing not-for-profit rating systems are (1) appropriateness of using accounting ratios for evaluating not-for-profit organizations and (2) reliability of data used in the analysis (Tinkelman and Donabedian 2007). Charity Navigator relies exclusively on accounting information to determine the ratings it assigns. If one accepts its arguments that this is the only practical way to evaluate large numbers of not-for-profit organizations, the principal limitation for this study is the possibility that the underlying data used by Charity Navigator is flawed. In addition to inadvertent errors in preparation and faulty accounting systems that generate incorrect data, charities may deliberately distort their cost accounting to present higher levels of program expenses by lowering reported fundraising and administrative costs. For example, accounting rules permit the allocation of certain joint costs between program services and fundraising and this is one way to reduce the two fundraising ratios used by Charity Navigator while also improving the program expense ratio.²⁹ The high incidence of not-for-profit organizations that report zero fundraising costs also

²⁸ Robust regressions are run in Stata using the `rreg` command. To mitigate the influence of outliers, the `rreg` command uses an iteratively reweighted least squares procedure ensuring that the median absolute deviation from the residual is no more than seven times the median residual. See the Stata manual for further detail.

²⁹ Some rating agencies (BBB Wise Giving Alliance and the AIP) “undo” the allocations as part of their evaluations but this does not seem to be part of the Charity Navigator rating system. Generally, it appears that individual donors may be unwilling, uninterested, or unable to do the same analysis (Khumawala et al. 2005).

suggests poor cost accounting practices.³⁰ These and other quality problems are discussed in documents published as part of the “Nonprofit Overhead Cost Project” (NCCS 2004). To the extent that the data used by Charity Navigator and other rating agencies is not correct, ratings will be distorted and less useful to donors. In other words, the more devious and sophisticated charities may position themselves to meet the target standards through manipulation or choice of fundraising and operating strategies and thereby siphon off more donations than they would otherwise receive.

Clearly, results reported here cannot be extrapolated to the majority of charities that are not rated because of the selection criteria used by Charity Navigator, as discussed at length in Section 3.3. In addition, our results may not hold for the rating systems used by other organizations. While Charity Navigator rates substantially more charities than anyone else, there is overlap and some charities are rated by more than one watchdog group. The Charity Navigator rating system is not directly comparable to the one used by AIP and it is possible that donors received mixed signals with respect to increases or decreases in rating levels. The BBB system takes a more in-depth look at governance and solicitation activities and therefore might not give a “meets all standards” rating to organizations that receive four stars from Charity

³⁰ In June 2008, the Charity Navigator website says it does not evaluate charities that have zero fundraising costs. However, we eliminated three organizations that had zero fundraising expenses in at least one year (see Table 2). The minimum fundraising expense for our sample was \$2 thousand (Table 4) which indicates that at least some organizations in the sample claim to spend next to nothing on solicitation activities. While some organizations may utilize volunteers to conduct fundraising activities, it is also possible that cost shifting occurred. For instance, Hager (2003b) points out that grant-writer salaries are often not included in fundraising expense but are instead incorrectly accounted for under program salaries.

Navigator. While we have attempted to control for the effect of multiple ratings, further research would be needed to fully analyze this issue.

A final set of limitations includes economy-wide factors and other events that might be different during the period examined than during other periods of time. For example, major events like natural disasters can focus charitable donations in new directions and possibly increased amounts while reported misbehavior by a few charities can have a negative effect on overall levels of giving.

5. Conclusion

The decision to donate is an important one: many donors want to make informed decisions about which organizations are worthy recipients. While no existing rating system has been able to go much beyond financial statement analysis, substantial not-for-profit resources have been expended to establish and sustain watchdog rating agencies like Charity Navigator. Accordingly, research aimed at understanding the impact of the ratings issued is useful for determining whether these organizations are making the market for donations more efficient.

Our findings indicate that contributions are sensitive to a change in Charity Navigator ratings. Both the level of contributions and the change in contributions vary with the size and direction of changes. An increase in the number of stars assigned is associated with higher percentage growth in contributions while a decrease in star rating is associated with lower growth. Likewise, both higher ratings and positive rating changes are associated with higher levels of future contributions while lower ratings and negative rating changes are associated with lower donations in the following year. Although the Charity Navigator ratings are based almost exclusively on publicly available information, this study suggests that the ratings provide

incremental information content. The website appears to facilitate decision-making by presenting concise data including comparisons with other charities with similar missions. We believe that watchdog organizations such as Charity Navigator can be beneficial for potential donors because of the ready availability and ease of use as compared to accessing a Form 990 and computing ratios for themselves. At this stage, it appears that enough donors use Form 990 and/or charity ratings to provide a reasonable level of market efficiency for at least the larger organizations that solicit contributions in the United States.

However, this study raises at least three public policy issues. First, can rating systems be enhanced beyond the existing focus on financial statement analysis? Although some rating agencies look at transparency, governance or fundraising practices, no one has found a way to measure and report on effectiveness and quality of services. If nothing else, user education is warranted so that donors will take a closer look at both a charity's mission and its services to judge for themselves whether the particular approaches employed are likely to achieve the intended objectives. Second, if existing ratings are useful to donors despite their shortcomings, what can be done to provide similar information for regional and local organizations not currently rated? Third, what can be done to improve the reliability of cost allocations among program, fundraising and other overhead expenses that lie at the heart of ratio analysis? Return preparers have been cautioned that they should make sure that the allocations reported on Form 990 are reasonable and well-documented (Wing et al. 2006). Without good data, donations may be disproportionately allocated to charities that know how to play the game through clever or deceitful accounting practices. Without widespread improvements, existing or expanded rating systems could be counterproductive to the achievement of the efficient allocation of scarce donations among charities.

References

- Baber, W. R., Roberts, A.A., Visvanathan, G., 2001. Charitable organizations' strategies and program-spending ratios. *Accounting Horizons* 15 (4), 329-343.
- Badal, J. 2007. Checking on charities. *The Wall Street Journal Online*. December 10th, Pg. R5.
- Bennett, R., Savani, S., 2003. Predicting the accuracy of public perceptions of charity performance. *Journal of Targeting, Measurement and Analysis for Marketing* 11 (4), 326-342.
- Buchheit, S., Parsons, L.M., 2006. An experimental investigation of accounting information's influence on the individual giving process. *Journal of Accounting and Public Policy* 25 (6), 666-686.
- Callen, J.L., 1994. Money donations, volunteering and organizational efficiency. *Journal of Productivity Analysis* 67 (3), 215-228.
- Cowen, A. Groyberg B., Healy P., 2006. Which types of analyst firms are more optimistic? *Journal of Accounting and Economics* 41, 119-146.
- Dichev, I.D., Piotroski J.D., 2001. The long-run stock returns following bond rating changes. *The Journal of Finance* LVI (1), 173-203.
- Fischer, M., Gordon T., Kraut M., 2002. An examination of differences between financial information provided in IRS Form 990 and audited financial statement data of U.S. private colleges and universities. *Academy of Accounting and Financial Studies Journal*, 6 (1), 87-104.
- Froelich, K.A., Knoepfle T.W., Pollak T.H., 2000. Financial measures in nonprofit organization research: Comparing IRS 990 return and audited financial statement data. *Nonprofit and Voluntary Sector Quarterly*, 29 (2), 232-254.
- Glaser, J.S., 1994. *The United Way Scandal - An Insider's Account of What Went Wrong and Why*. New York, John Wiley & Sons.
- Gordon, T.P., Khumawala, S.B., 1999. The demand for not-for-profit financial statements: A model for individual giving. *Journal of Accounting Literature* 18, 31-56.
- Gordon, T.P. Khumawala, S.B., Kraut, M.A. Meade, J.A., 2007. The quality and reliability of Form 990 data: Are users being misled, *Academy of Accounting and Financial Studies Journal*, 11 (Special Issue: Government and Not for Profit Issues), 27-49.
- Hager, M. A., 2003a. Current practices in allocation of fundraising expenditures. *New Directions for Philanthropic Fundraising* 41, 39-52.
- Hager, M.A., 2003b. Is grant proposal writing a fundraising expense? *Nonprofit Quarterly* 10(1), 24-28.
- Hager, M., Greenlee, J., 2004. How important is a nonprofit's bottom line? The uses and abuses of financial data. In *Search of the Nonprofit Sector*. Eds. Frumkin, P., Imber, J.B., New Brunswick, NJ, Transaction., 85-96.
- Harris, L.E., Piwoswar, M.S., 2006. Secondary trading costs in the municipal bond market. *Journal of Finance* LXI (3), 1361-1397.
- Hong, H., Kubik, J., 2003. Analyzing the analysts: Career concerns and biased earnings forecast. *Journal of Finance* LVIII (1), 313-351.

- IRS, 2007. Form 990 Redesign for Tax Year 2008 - Background Paper, December 20, 2007. Internal Revenue Service. http://www.irs.gov/pub/irs-tege/background_paper_form_990_redesign.pdf (accessed 3/5/08).
- Jorion, P., Zhang, G., 2007. Information effects of bond rating changes: The role of the rating prior to the announcement. *Journal of Fixed Income*, Spring, 45-59.
- Keating, E.K., Parsons, L.M., Roberts, A.A. 2008. Misreporting fundraising: how do nonprofit organizations account for telemarketing campaigns? *The Accounting Review*, 83 (2), 417-446.
- Kennedy, P., 2003. *A Guide to Econometrics*, 5th edition. Massachusetts Institute of Technology, The MIT Press.
- Khanna, J., Posnett, J., and Sandler, T. 1995. Charity donations in the UK: New evidence based on panel data. *Journal of Public Economics* 56, 257-272.
- Khumawala, D., Parsons, L., Gordon, T., 2005. Detecting earnings management in not-for-profit entities: An experiment. *Journal of Accounting, Auditing and Finance*, 20 (3), 287-309.
- Kingma, B.R., 1995. Do profits crowd out donations or vice versa? *Nonprofit Management & Leadership*, 6 (1), 21-37.
- Kisgen, D.J., 2006. Credit ratings and capital structure. *Journal of Finance* LXI (3), 1035-1072.
- Krishnan, R., Yetman, M.H., Yetman, R.J., 2006. Expense misreporting in nonprofit organizations. *The Accounting Review* 81(2), 399-420.
- Landsman W.R., Magliolo J., 1988. Cross-sectional capital market research and model specification. *The Accounting Review* 63 (4), 586-604.
- Lin, H., McNichols, M., 1998. Underwriting relationships, analysts' earnings forecasts and investment recommendations. *Journal of Accounting and Economics* 25, 101-127.
- Lowell, S., Trelstad, B., Meehan, B., 2005. The Ratings Game: Evaluating the three groups that rate the charities. *Stanford Social Innovation Review*. Summer, 38-45.
- Malmendier, U., Shanthikumar D., 2007. Are small investors naïve about incentives? *Journal of Financial Economics* 85, 457-489.
- National Center for Charitable Statistics (NCCS). 2004. Nonprofit Overhead Cost Project, Brief No. 4, The quality of financial reporting by nonprofits: findings and implication. Washington DC: Urban Institute. Accessed 25 June 2008 at <http://nccsdataweb.urban.org/FAQ/index.php?category=51>.
- NCNP and NHSA, 2005. Rating the Raters: An assessment of organizations and publications that rate/rank charitable nonprofit organizations. National Council of Nonprofit Associations and National Human Services Assembly. Accessed 3/5/2008 at http://www.nassembly.org/nassembly/documents/Rating_the_Raters_Final_3%20.pdf.
- Okten, C., Weisbrod, B.A., 2000. Determinants of donations in private nonprofit markets. *Journal of Public Economics* 75, 255-272.
- Parsons, L. M., 2007. The Impact of Financial Information and Voluntary Disclosures on Contributions to Not-For-Profit Organizations. *Behavioral Research in Accounting* 19, 179-196.
- Pollak, T.H., Rooney, P., 2003. Management and general expenses: The other half of overhead. *Nonprofit Quarterly* (Spring), 30-32.

- Posnett, J., Sandler, T., 1989. Demand for charity donations in private non-profit markets: The case of the U.K. *Journal of Public Economics* 40 (2), 187-200.
- Sloan, M.F., forthcoming. The effects of nonprofit accountability ratings on donor behavior. *Nonprofit and Voluntary Sector Quarterly*.
- Steinberg, R., 1986a. The revealed objective functions of nonprofit firms. *RAND Journal of Economics* 17 (4), 508-526.
- Steinberg, R., 1986b. Should donors care about fundraising? In *The Economics of Nonprofit Institutions: Studies in Structure and Policy*, edited by S. Rose-Ackerman, 347-364. New York, NY, Oxford University Press.
- Tinkelman, D. 1998. Differences in Sensitivity of Financial Statement Users to Joint Cost Allocations: The Case of Nonprofit Organizations. *Journal of Accounting, Auditing & Finance* 13 (4), 377-393.
- Tinkelman, D., 1999. Factors affecting the relation between donations to not-for-profit organizations and an efficiency ratio. *Research in Government and Nonprofit Accounting* 10, 135-161.
- Tinkelman, D., 2004. Using nonprofit organization-level financial data to infer managers' fund-raising strategies. *Journal of Public Economics* 88 (9/10), 2181-2192.
- Tinkelman, D., 2006. The decision-usefulness of nonprofit fundraising ratios: Some contrary evidence. *Journal of Accounting, Auditing & Finance* 21 (4), 441-462.
- Tinkelman, D., Donabedian, B. 2007. Street lamps, alleys, ratio analysis, and nonprofit organizations. *Nonprofit Management & Leadership* 18 (1), 5-18.
- Vesterlund, L., 2006. Why do people give? In W.W. Powell and R. Steinberg, eds, *The Non-Profit Sector: A Research Handbook*, 2nd Edition. New Haven & London, Yale University Press, pp. 568-587.
- Weisbrod, B. A., Dominguez, N.D., 1986. Demand for collective goods in private nonprofit markets: Can fundraising expenditures help? *Journal of Public Economics* 30 (1), 83-96.
- Wing, K., Gordon, T., Hager, M., Pollak, T., Rooney, P., 2006. Functional expense reporting for nonprofits: The profession's next scandal? *The CPA Journal*. 76 (8), 14-18.
- Wing, K.T., Pollak, T.H., Blackwood, A., 2008. *The Nonprofit Almanac 2008*. Washington DC, The Urban Institute Press.
- Wong, C. M., V. C. H. Chua, and S. Vasoo., 1998. Contributions to charitable organizations in a developing country: The case of Singapore. *International Journal of Social Economics* 25 (1), 25-42.

Table 1
Charity Navigator Ratings

Efficiency	Point Range	Methodology
Program Expense	0 – 10	10 * percentage to programs Less than 33% is rated as zero stars Must be > 75% to get maximum
Administrative Expense	0 – 10	Must be no more than 15% for maximum points
Fundraising Expense	0 – 10	Must be less than 10% for maximum points
Cost per \$1 of Contributions	0 – 10	Must be no more than 10¢ per dollar for maximum points
Capacity		Methodology
Primary Revenue Growth	0 – 10	(Raw score + 0.0372) * 100 Must be > 6.27% growth for maximum points
Program Expense Growth	0 – 10	Raw score * 100 Must be > 10% to get maximum points
Working Capital Ratio (in years)	0 – 10	Must be > than 1.0 years to get maximum points
Summation Scores		
Overall Rating	0 -- 70	4 Stars > 60 3 Stars 50 – 60 2 Stars 40 – 50 1 Stars 25 – 40 0 Stars < 25

This summary was compiled from information available in mid-2007 from <http://www.charitynavigator.org>

Table 2
Sample Selection and Ratings from Charity Navigator Website

Panel A – Sample Selection

Number of organizations at Charity Navigator Website ^a	5,233
Random sample selected	525
Less organizations for which:	
There was less than three years of sequential historical data	-102
There was a change in fiscal year end	-10
There was at least one year with zero reported fundraising expenses	-3
Unable to obtain Form 990 on Guidestar to verify direct public support	-5
Total organizations available for statistical analysis	405

Panel B – Number of Stars with Charity Navigator Numeric Score^b

Number of Stars	n	Percentage	Charity Navigator Overall Numeric Scores				
			Mean	Std. Deviation	Median	Minimum	Maximum
0 Stars	6	1.5%	17.26	7.83	18.87	2.50	24.43
1 Star	43	10.6%	36.52	4.17	37.57	25.00	49.85
2 Stars	120	29.6%	45.52	3.57	45.38	34.70	63.47
3 Stars	141	34.8%	55.52	3.26	55.72	50.29	68.16
4 Stars	95	23.5%	63.54	2.71	63.22	52.39	69.49
Total	405	100.0%	51.85	10.16	52.76	2.50	69.49

a The sample was selected from the Charity Navigator website on June 20, 2007.

b Star and numeric ratings are for the most recent year available at date sample was selected

Table 3
Comparison of Sample and Population Distributions

Panel A: Comparison by Size

	Organizations Rated by Charity Navigator		Public Charities Filing Returns with IRS in 2005 ^a
	Population	Sample	
Number of organizations	5,330	405	206,984
Expenses up to \$3.5 million	43.6%	39.8%	90.3%
Expenses \$3.5 to \$13.5 million	33.1%	33.3%	6.1%
Expenses over \$13.5 million	23.2%	26.9%	3.6%
	100.0%	100.0%	100.0%

Panel B: Comparison by Mission (Industry)

	Organizations Rated by Charity Navigator		Entities Filing Returns with IRS in 2005 ^b	Distribution of Private Contributions in 2005 ^c	
	Population	Sample		All Causes	Selected Causes.
Number of organizations	5,330	405	528,023		
Total private donations (in billions)				\$283.05	\$141.24
Animals or Environment	13.5%	16.3%	3.4%	2.30%	4.6%
Arts, Culture, and Humanities	12.6%	11.1%	8.2%	4.0%	8.0%
Education	10.3%	11.1%	14.8%	13.2%	26.5%
Health	11.1%	8.9%	9.6%	7.3%	14.6%
Human Services	20.3%	18.5%	28.7%	11.5%	23.0%
International	9.0%	8.1%	1.1%	4.4%	8.8%
Public & Societal Benefit	16.4%	16.8%	27.1%	7.2%	14.4%
Religion related, spiritual development	6.9%	8.9%	0.4%	32.7%	
Mutual benefit			6.5%		
Unknown, unallocated			0.2%	7.7%	
Gifts to foundations				9.7%	
	100.0%	100.0%	100.0%	100.0%	100.0%

a. We used the National Center for Charitable Statistics (NCCS) 2005 Core File to tabulate this data. While it contained 328,579 tax-exempt 501(c)(3) entities, only 206,984 filed returns in 2005.

b. Filing entities include only organizations that are required to file annually with the IRS and therefore this population excludes most churches and religious entities as well as tax-exempt organizations with less than \$25,000 in gross receipts. Data source: Wing et al. (2008). Charity Navigator only rates 501(c)(3) organizations which comprise 75.9% of the entities that filed in 2005.

c. These percentages are based on distribution of dollars donated to nonprofit organizations. The "selected causes" column excludes the religious entities rated by Charity Navigator and all the other nonrated categories for comparison purposes. Data source: Wing et al. (2008)

Table 3, continued

Panel C: Comparison by Sources of Revenue

Sources of Revenue (as a percentage of total revenues)	Charity Navigator Sample (most recent year)	All Reporting Public Charities (2005) ^d	Public Charities Excluding Hospitals and Higher Education
Number of organizations	405	310,683	n/a
Public support	72.9%	21.3%	40.3%
Fees for services and goods	15.1%	70.3%	53.6%
Investment and other income	12.0%	8.4%	6.1%
	100.0%	100.0%	100.0%

Panel D: Comparison by Increase in Public Support

Increase in public support	Charity Navigator Sample		All Nonprofits Serving Households ^e
	n	Mean	Mean
2002 to 2003	15	0.6%	1.4%
2003 to 2004	279	19.8%	11.6%
2004 to 2005	390	17.2%	7.3%
2005 to 2006	126	23.2%	4.2%

Notes

d. Sources of revenue with and without hospitals and universities are from Wing et al. (2008, p. 145)

e. Percentages are based on total transfers to nonprofit institutions serving households (Wing et al. 2008, p. 127).

The underlying data excludes transfers between nonprofits and may therefore not be precisely comparable to figures reported by charities in the Charity Navigator sample. All increases are based on nominal dollars without any adjustment for inflation.

Table 4
Descriptive Statistics – Most Recent Available Year

Panel A – Financial Statement Totals (in thousands of dollars)

n=405	Mean	Median	Standard Deviation	Minimum	Maximum
Total revenue	45,505	5,679	230,268	478	2,524,358
Total assets	119,631	8,077	608,234	43	7,113,264
Total public support	20,935	3,792	83,501	246	916,646
Program expenses	36,101	3,891	194,436	101	2,150,886
Fundraising expenses	2,975	424	13,844	2	172,482
Administrative expenses	1,319	386	3,938	2	55,758
Total Functional expenses ^a	40,433	5,140	208,117	341	2,345,698

Panel B – Ratios and Ratings

n=405	Mean	Median	Std. Deviation	Minimum	Maximum
Program percentage	79.0%	80.4%	12.1%	6.7%	99.8%
Administrative percentage	11.4%	10.3%	7.3%	0.1%	53.9%
Fundraising percentage	9.5%	7.4%	9.9%	0.0%	88.4%
Cost to raise \$1 of contributions ^b	\$0.13	\$0.09	\$0.12	\$0.00	\$0.84
Price (cost of \$1 of charitable services) ^c	\$1.34	\$1.24	\$0.79	\$1.00	\$14.73
Charity Navigator efficiency score	32.91	34.61	6.63	0.00	39.98
Charity Navigator capacity score	18.94	20.00	7.03	1.34	30.00
Charity Navigator overall numeric score ^d	51.85	52.76	10.16	2.50	69.49

a Total functional expense is the combination of program, administrative, and fundraising expenses and payments to affiliates.

b The Cost to raise \$1 is calculated as fundraising expense divided by public support.

c Price is computed as $[1/(1 - (\text{Fundraising expense divided by total expense}) - (\text{Administrative expense divided by total expense}))]$ or the reciprocal of the program expense divided by total expense.

d The Overall Charity Navigator numeric rating is the combination of the efficiency and capacity rating as shown on Table 1.

Table 4 (continued)

Panel C – Size and Charity Navigator Ratings by Industry

Industry^e	Sample		Assets		CN Numeric Score	
	<i>n</i>	<i>%</i>	(in \$1000s)		<i>Mean</i>	<i>Median</i>
			<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>
Arts, Culture, Humanities	45	11.1%	\$77,839	\$35,190	47.9	47.8
Animals	41	10.1%	19,140	4,146	53.7	53.1
Environment	25	6.2%	202,367	3,050	52.6	52.8
International	34	8.4%	21,623	4,464	57.3	62.4
Health	36	8.9%	14,593	6,008	49.8	49.2
Public Benefit	68	16.8%	51,177	8,297	49.7	50.8
Education	45	11.1%	698,633	52,924	54.9	55.8
Human Services	75	18.5%	36,045	7,856	51.9	54.2
Religion	36	8.9%	6,154	1,814	51.2	52.9
Total	405	100.0%	119,631	8,077	51.9	52.8

Means test (df=8)

F=6.68, p<.000

F=3.50, p<.001

e The National Taxonomy of Exempt Entities Core Classifications (NTEE-CC) divides the universe of nonprofit organizations into 26 major groups under ten broad categories of which nine categories are represented in the sample.

Table 5
Changes in Direct Public Support by Patterns of Rating Changes

Panel A – Change in Direct Contributions by Most Recent Charity Navigator Rating

Number of Stars	Percentage Change in Direct Contributions between First and Third Years					
	N	Mean	Median	Std. Deviation	Minimum	Maximum
0 Stars	6	13.3%	-19.8%	106.9%	-54.3%	225.9%
1 Star	43	1.0%	-1.7%	39.9%	-72.7%	93.0%
2 Stars	120	11.1%	6.0%	48.9%	-84.4%	178.3%
3 Stars	141	27.7%	10.8%	100.5%	-75.8%	906.6%
4 Stars	95	97.3%	51.0%	150.2%	-55.8%	824.6%
Total	405	36.1%	13.9%	104.8%	-84.4%	906.6%

Means test: $F=12.585$, $df=4$, $p<.0000$

Panel B - Change in Direct Contributions by Pattern of Rating Changes

Pattern of rating changes	Percent Change in Direct Contributions between First and Third Years					
	n	Mean	Median	Std. Deviation	Minimum	Maximum
Two decreases	17	1.9%	-11.2%	42.4%	-56.8%	80.1%
Decrease after no change	48	-7.2%	-10.5%	36.7%	-75.8%	93.0%
No change after decrease	39	-11.0%	-13.0%	45.7%	-74.3%	162.2%
Decrease after an increase	19	0.1%	6.0%	39.7%	-84.4%	67.8%
No change (same all 3 years)	127	37.1%	12.0%	82.3%	-72.2%	420.5%
Increase after decrease	53	40.1%	23.2%	101.9%	-70.4%	628.2%
No change after increase	37	59.7%	28.0%	118.7%	-43.3%	582.9%
Increase after no change	47	75.2%	30.4%	136.5%	-27.7%	824.6%
Two increases	18	153.9%	55.5%	232.7%	-7.7%	906.6%
	405	36.1%	13.9%	104.8%	-84.4%	906.6%

Means test: $F=7.208$, $df=8$, $p<.0000$

TABLE 6
Spearman and Pearson Correlation Coefficients

Panel A - Correlation Table for Change Analysis

	CONTCHG _t	RATECHG _t	FRCHG _t	FRCHG _{t-1}	PRICECHG _{t-1}
n ^a	810	810	810	405	405
CONTCHG _t	1.00	0.37 ***	0.14 ***	0.00	0.03
RATECHG _t	0.27 ***	1.00	-0.07 **	0.00	0.11 **
FRCHG _t	0.04	-0.07 **	1.00	-0.07	-0.00
FRCHG _{t-1}	0.04	0.08 *	-0.02	1.00	0.40 ***
PRICECHG _{t-1}	-0.01	0.09 *	0.23 ***	0.25 ***	1.00

Panel B - Correlation Table for Level Analysis

n=810 ^a	CONT _t	ASSET _{t-1}	PRICE _{t-1}	FREXP _{t-1}	RATECHG _t	RATE _{t-1}
CONT _t	1.00	0.64 ***	-0.19 ***	0.70 ***	0.08 **	0.15 ***
ASSET _{t-1}	0.49 ***	1.00	-0.08 **	0.65 ***	-0.01	0.16 ***
PRICE _{t-1}	-0.03	-0.02	1.00	0.21 ***	0.12 ***	-0.55 ***
FREXP _{t-1}	0.54 ***	0.71 ***	0.02	1.00	0.06	-0.14 ***
RATECHG _t	0.01	-0.00	-0.02	0.03	1.00	-0.44 ^b
RATE _{t-1}	0.16 ***	0.16 ***	-0.19 ***	0.03	-0.44 ^b	1.00

Notes:

Above the diagonal are Spearman correlations and below the diagonal are Pearson correlations.
***, **, * Statistically significant at the 0.01, 0.05, and 0.10 level (two-tailed), respectively.

a. The 810 observations are derived from two years of data for the sample organizations (405*2 = 810) but lagged variables reduce sample to 405 organizations.

b. The p-values are not reported for correlations between RATECHG_t and RATE_{t-1} due to the limited value range for RATE_{t-1} (0 to 4 stars) which then limits the magnitude of possible rating changes and may thus cause spurious correlations.

Variable definitions:

CONTCHG_t = the percent change in direct public support for current year

RATECHG_t = takes the value of the rating change (example: a one star decrease = -1, a two star increase = 2, etc.)

FRCHG_t = the percent change in fundraising expenses in the current year

FRCHG_{t-1} = the percent change in fundraising expenses in the prior year

PRICECHG_{t-1} = the percent change in price in the prior year, price is defined as 1/(Program Expense/Total Expense)

CONT_t = the current year direct public support

ASSET_{t-1} = the end of the year assets in the prior year

PRICE_{t-1} = prior year price -- defined as 1/(Program Expense/Total Expense)

FREXP_{t-1} = the fundraising expenses in the prior year

RATECHG_t = takes the value of the rating change (example: a one star decrease = -1, a two star increase = 2, etc.)

RATE_{t-1} = takes the value of the prior year rating (example: one star = 1, two star = 2, etc.)

TABLE 7
Regression Results for Models Predicting the Change in Current-Year Donations

Independent Variable	CONTCHG _t N = 405	CONTCHG _t N = 405	CONTCHG _t N = 405
RATECHG _t	0.39 ***	0.37 ***	0.39 ***
CNLARGE _t	<i>2.90</i>	<i>3.79</i>	<i>2.64</i>
RATECHG _t * CNLARGE _t		0.08 <i>0.54</i>	
CNMEDIUM _t		0.49 <i>0.87</i>	
RATECHG _t * CNMEDIUM _t		-0.06 <i>-0.99</i>	
MULTIRATED _t		-0.26 ** <i>-2.42</i>	-0.07 <i>-0.94</i>
RATECHG _t *MULTIRATED _t			0.06 <i>0.27</i>
FRCHG _t	0.11 *** <i>4.37</i>	0.11 *** <i>3.33</i>	0.11 *** <i>4.19</i>
FRCHG _{t-1}	0.02 *** <i>2.93</i>	0.02 ** <i>2.22</i>	0.02 *** <i>2.62</i>
PRICECHG _{t-1}	-0.54 ** <i>-2.04</i>	-0.34 <i>-1.63</i>	-0.54 ** <i>-2.02</i>
Adjusted R²	8%	12%	8%

Notes: t-statistics in italics below coefficients; standard errors are calculated with the Huber/White/sandwich estimator of variance; asterisks indicate level of significance (two-tailed test) with *** for 0.01 level, ** for 0.05 level and * for the 0.10 level; sample size is 405 unique observations because two years of data are needed to create lagged variables.

Variable definitions: CONTCHG_t = the percentage change in direct public support in the current year; RATECHG_t takes the signed value of the rating change during current year (example: a one star decrease = -1, a one star increase = 1, a two star increase = 2 etc.); CNLARGE_t = 1 if the organization has more than \$13.5 million in total expenses; CNMEDIUM_t = 1 if the organization has at least \$3.5 million in total expenses, but no more than \$13.5 million in total expenses; MULTIRATED_t = 1 if the organization was also rated by American Institute of Philanthropy or the Better Business Bureau Wise Giving Alliance (give.org); FRCHG_t = the percent change in fundraising expenses in the current year; FRCHG_{t-1} = the percent change in fundraising expenses in the prior year; PRICECHG_{t-1} = the prior year change in price which is defined as 1/(Program Expense/Total Expense).

TABLE 8
Regression Results for Models Predicting the Log of Current-Year Donations

Independent Variable	LnCONT _t N = 810	LnCONT _t N = 810	LnCONT _t N = 810
RATECHG _t	0.23 ***	0.28 ***	0.24 ***
CNLARGE _t	5.30	5.25	5.44
RATECHG _t * CNLARGE _t		1.58 ***	
CNMEDIUM _t		11.35	
RATECHG _t * CNMEDIUM _t		-0.16 *	
MULTIRATED _t		-1.69	
RATECHG _t * MULTIRATED _t		0.67 ***	
		8.57	
		-0.08	
		-1.25	
			0.37 **
			2.48
			0.00
			0.03
RATE _{t-1}	0.26 ***	0.28 ***	0.27 ***
LnASSETS _{t-1}	6.44	7.96	6.52
LnPRICE _{t-1}	0.25 ***		0.25 ***
LnFREXP _{t-1}	9.74		10.10
	-0.39 ***	-0.17 *	-0.39 ***
	-2.97	-1.89	-2.90
	0.47 ***	0.40 ***	0.44 ***
	14.91	10.97	12.83
Year Control	YES	YES	YES
Industry Control	YES	YES	YES
Adjusted R²	66%	70%	66%

Notes: t-statistics in italics below coefficients; standard errors are calculated with the Huber/White/sandwich estimator of variance; asterisks indicate level of significance (two-tailed tests) with *** for 0.01 level, ** for 0.05 level and * for the 0.10 level; sample size for the log linear analysis 810 observations (405 entities * 2 years).

Definition of variables: LnCONT_t = the natural log of current year direct public support; RATECHG_t = takes the signed value of the rating change during current year (example: a one star decrease = -1, a one star increase = 1, a two star increase = 2 etc.); CNLARGE_t = 1 if the organization has more than \$13.5 million in total expenses; CNMEDIUM_t = 1 if the organization has at least \$3.5 million in total expenses, but no more than \$13.5 million in total expenses; MULTIRATED_t = 1 if the organization was also rated by AIP or give.org. RATE_{t-1} = takes the value of the prior year rating (example: one star = 1, two stars = 2, etc.); LnASSETS_{t-1} = the natural log of total assets at end of prior year; LnPRICE_{t-1} = the natural log of prior year price which is defined as defined as 1/(Program Expense/Total Expense); LnFREXP_{t or t-1} = the natural log of the prior year fundraising expenses; Year Control = dummy variable for each fiscal year; Industry Control = dummy variable for each major NTEE-CC broad category represented by the sample (see Table 4 Panel C).