

# The Impact of Voluntarily Filing Form 990 on Donations, Government Grants, and Total Contributions

Wei Hsu

Brian P. McAllister

*University of Colorado Colorado Springs*

**ABSTRACT:** We examine whether voluntary IRS Form 990 filers attract higher donations, government grants, and total contributions. We define voluntary 990 filers as charities eligible to file a Form 990EZ but instead choose to file a more exhaustive 990. The 990 provides incremental financial information, including disclosures about functional expense classifications for administrative and fundraising, charity governing bodies and governance policies, and whether a charity has engaged in an audit. Our strongest evidence shows that total contributions are almost three times higher for charities that choose to voluntarily file a 990 instead of a 990EZ. We also provide limited evidence that voluntary 990 filers are positively associated both with donations and grants as compared to those mandated to file a 990. Our findings are consistent with signaling theory and show that disclosing additional information beyond what is required increases transparency and offers benefits to charities.

**Data Availability:** Data were collected from publicly available sources quoted in the text.

**JEL Classifications:** L31.

**Keywords:** charities; IRS Form 990; IRS Form 990EZ; donations; government grants; total contributions.

## I. INTRODUCTION

In 2021, U.S. charities received an estimated \$484.85 million in donations ([Giving USA 2022](#)). Charities rely on donations to fund their mission-driven activities and must compete with other charities for these donations. Because of this, charities must find ways to motivate donors to give to their specific organizations over others. One way to do this is to demonstrate and signal their accountability of contributed funds to potential and current donors.

---

Our paper benefited from helpful comments by session participants at the 2023 American Accounting Association Government and Nonprofit Section Midyear Meeting and the 2023 American Accounting Association Annual Meeting. The authors of this publication have no conflicts of interest related to this research.

Wei Hsu and Brian P. McAllister, University of Colorado Colorado Springs, Department of Accounting, Finance & Business Law, Colorado Springs, CO, USA.

Editor's note: Accepted by Editor Thomas E. Vermeer.

*Submitted: January 2023  
Accepted: March 2024  
Early Access: May 2024*

Prior research provides evidence that donors react positively to favorable efficiency ratios (Weisbrod and Dominguez 1986; Posnett and Sandler 1989; Tinkelman 1998; Okten and Weisbrod 2000; M. Yetman and R. Yetman 2012, 2013), good governance (Harris, Petrovits, and Yetman 2015), and other financial information. Although some donors (e.g., board members and major donors) are likely to obtain this financial information directly from charities (Callen, Klein, and Tinkelman 2003), most donors rely on publicly available disclosures reported on IRS Form 990 (Return of Organization Exempt from Income Tax). Donors may also obtain this information indirectly via charity watchdog agencies (e.g., Charity Navigator).

Larger charities are required to file a 990 annually with the IRS. However, the IRS offers relief to smaller charities (those with gross receipts and total assets below certain thresholds) by allowing them to file a shorter form of 990 called 990EZ. Most smaller charities take advantage of this relief and file a 990EZ. The 990EZ includes limited financial disclosures, including an income statement, a balance sheet, total program expenses, and information about the compensation of officers, directors, trustees, and key employees. Notably, the 990EZ excludes program, administrative, and fundraising expenses broken down by natural classification. As a result, donors and watchdog agencies cannot calculate administrative and fundraising efficiency ratios or assess joint cost allocations based on 990EZ disclosures alone. The 990EZ also excludes specific disclosures about charity governing bodies and governance policies, accounting methods used, and the presence of financial statement audits and Single Audits, as well as other financial information.

Our study examines how donors and grantors react to the voluntary filing of Form 990 by charities that are eligible to file a 990EZ. We hypothesize that some charities are motivated to voluntarily file a 990 to attract more donations (grants) from donors (grantors) for at least two reasons. First, charities might voluntarily file a 990 to provide enhanced financial disclosures to donors about functional expenses, governance, and other financial-related items to reduce information asymmetries (Parsons 2003, 2007; Blouin, Lee, and Erickson 2018). Second, charities might voluntarily file to signal accountability, competence, and legitimacy (Blouin et al. 2018) to show they can measure up to larger charities and separate themselves from other charities of similar size. Prior charity research (Behn, DeVries, and Lin 2010; Saxton, Neely, and Guo 2014; Blouin et al. 2018) indicates that donors are sensitive to some forms of voluntary disclosure of financial information.

We perform two main tests. For the first main test, our sample consists of 23,587 observations over the period of 2010 to 2017 and compares charities that file a 990 voluntarily with charities that are required to file a 990. We show voluntary 990 filers to be positively associated both with donations and government grants. Our results for donations hold whether a charity is a voluntary filer for one year or two consecutive years. For the second main test, our sample consists of 4,026 observations over the period of 2010 to 2017 and compares the same voluntary 990-filing charities from our main sample with charities that file a 990EZ. We believe our study is the first to examine 990EZ variables obtained from the IRS Statistics of Income (SOI) 990EZ database. The results for the second main test provide evidence that voluntary 990 filers are positively associated with total contributions (a combination of donations, government grants, and other contribution types). These results hold in specifications where a charity is a voluntary 990 filer for one year or two consecutive years and when using a 2SLS instrumental variable (IV) approach.

Our findings are mixed in supplemental analyses. For our entropy-balanced sample, the results for total contributions are robust and indicate that voluntary 990 filing results in a 274 percent increase in the level of total contributions as compared to other 990EZ filers. Entropy-balanced results for donations and government grants are not robust. For analysis that compares voluntary 990 filers to similar-sized 990 or 990EZ filers, the results are robust for donations and total contributions, but not for government grants.

Our results provide implications for practice, research, and regulation. First, smaller charities that are allowed to file a 990EZ should consider filing a 990 to better inform donors and signal accountability. Our findings indicate that charities that choose to voluntarily file a 990 potentially receive a significant boost in donations, government grants, and especially total contributions. Second, our results extend prior research on the voluntary disclosure of financial information by charities. Third, the IRS is likely to be interested in our findings, especially in terms of being better aware that the additional disclosures reported in the 990 are donor-relevant.

In the following sections, we provide a background on Forms 990 and 990EZ, voluntary disclosure of financial information by charities, and the hypotheses development. The next two sections present the samples, research design, and results for the two main tests. The last two sections present supplemental analyses and provide a conclusion to the paper.

## II. BACKGROUND AND HYPOTHESES DEVELOPMENT

### **Background on Forms 990 and 990EZ**

Audited financial statements are typically not available to the public, and charity annual reports, when available, generally report limited amounts of financial and governance information.<sup>1</sup> Burks (2018) provides evidence that suggests that donors are most reactive to financial information provided on the 990 because it is the most widely available public report. Although the primary purpose of the 990/990EZ is nonprofit tax compliance-related, the IRS is also aware that 990s often provide the only required public disclosure of financial and governance information to donors and other charity stakeholders. The 990 instructions (page 2) state that “members of the public rely on Form 990 or Form 990EZ as their primary or sole source of information about a particular organization. How the public perceives an organization in such cases can be determined by information presented on its return.” The availability of financial and governance information on the 990 and 990EZ presents an opportunity for charities to be more accountable and transparent to donors and other stakeholders.

The IRS requires tax-exempt public charities to file Form 990, *Return of Organization Exempt from Income Tax* annually. The IRS uses the 990 to regulate public charities and deter them from abusing their tax-exempt status. The current 990 consists of 12 parts and is 12 pages long.<sup>2</sup> The instructions for the 990 are 102 pages long. As applicable, charities are also required to file up to 15 supplemental schedules (Schedule A through Schedule O). Each of these schedules has its own set of instructions. The successful completion of a 990 involves considerable expertise and knowledge of nonprofit tax regulations.

Due to the onerous burden of filing a complete 990, the IRS provides relief to smaller public charities through Form 990EZ. The current 990EZ consists only of six parts and is four pages long.<sup>3</sup> The instructions for the 990EZ are 48 pages long, which is less than half of the length of the

<sup>1</sup> Saxton et al. (2014) report that 14.66 percent (3.91 percent) of their sample of 307 charities disclose their annual reports (audited financial statements) on their websites.

<sup>2</sup> The 12 parts of Form 990 are: Part I—Summary; Part II—Signature Block; Part III—Statement of Program Service Accomplishments; Part IV—Checklist of Required Schedules; Part V—Statements Regarding Other IRS Filings and Tax Compliance; Part VI—Governance, Management, and Disclosure; Part VII—Compensation of Officers, Directors, Trustees, Key Employees, Highest Compensated Employees, and Independent Contractors; Part VIII—Statement of Revenue; Part IX—Statement of Functional Expenses; Part X—Balance Sheet; Part XI—Reconciliation of Net Assets; and Part XII—Financial Statements and Reporting. The italicized Statements are those not required for Form 990EZ filers.

<sup>3</sup> The six parts of Form 990EZ are Part I—Revenue, Expense, and Changes in Net Assets or Fund Balances; Part II—Balance Sheets; Part III—Statement of Program Service Accomplishments; Part IV—List of Officers, Directors, Trustees, and Key Employees; Part V—Other Information; Part VI—Section 501(c)(3) Organizations Only.

full 990 instructions. Charities filing the 990EZ may also be required to file up to eight supplemental schedules (Schedules A, B, C, E, G, L, N, and O), which is seven fewer than required for the 990. In general, the reported disclosures available in the 990 incremental to the 990EZ are likely to be relevant to donors. Three parts of the 990 are likely to be the most relevant to donors: Part VI, Part IX, and Part XII.

Part VI Section A discloses information about a charity's governing body and management and includes questions about the number of board members, family and business relationships between board members, and significant diversions of assets (e.g., fraud). Part VI Section B discloses information about governance policies such as the presence of whistleblower policies and CEO compensation policies. Part VI Section C provides information about the public availability of a charity's 990. [Harris et al. \(2015\)](#) provide evidence that donors react to the reported disclosures in Part VI Sections A and B and reward charities that report good governance.

Part IX is also likely to be relevant to donors. Part IX presents the statement of functional expenses, which allocates total expenses between three categories, program, management and general (administrative), and fundraising. Total expenses are also presented by natural classification (e.g., compensation, fees for services, advertising, and promotion, etc.) in Part IX. Prior research (e.g., [Weisbrod and Dominguez 1986](#); [Posnett and Sandler 1989](#); [Tinkelman 1999](#); [Okten and Weisbrod 2000](#); [Yetman and Yetman 2012, 2013](#)) provides consistent evidence that donors react to efficiency measures. The calculation for these efficiency measures is possible only when expenses are disclosed based on their functional classification (i.e., program, administrative, fundraising). Therefore, donors and other stakeholders such as charity rating agencies can compute efficiency measures only for charities that file a 990. The calculation for administrative and fundraising efficiency measures is not possible based on the information provided on a 990EZ. As a result, charities may be particularly motivated to voluntarily file a 990 over a 990EZ if they want to publicize certain types of efficiency measures.

Part IX also discloses information about a charity's joint cost allocations between program and fundraising expenses. Joint costs are controversial because they provide a mechanism to move fundraising expenses into program expenses ([Tinkelman 1998](#); [Jones and Roberts 2006](#)). Donors prefer programs over fundraising activities, so charity managers may be motivated to misreport expenses incurred from fundraising as program expenses instead. As a result, disclosing information on the 990 about the use of joint cost allocations potentially makes donors more aware that this mechanism is present for a particular charity, therefore making the disclosure value-relevant to donors.

Finally, Part XII provides information about financial statements and reporting. The section includes questions about accounting methods (cash, accrual, other), the presence of a financial statement audit, and the presence of a Single Audit. The audit opinions issued each year (e.g., unmodified, modified, adverse) are not disclosed. Prior research suggests that donors are influenced by information regarding both financial statement audits ([Kitching 2009](#)) and Single Audits ([Petrovits, Shakespeare, and Shih 2011](#); [McAllister, Waymire, and Webb 2023](#)).

### **Voluntary Disclosure of Financial Information by Charities**

The IRS allows public charities to voluntarily choose to file Form 990 even if they meet the filing thresholds for filing a 990EZ. We argue that some charities might do this to attract more donations and grants. Voluntary reporting of the 990 potentially decreases information asymmetries between the charity and donors by providing additional information about governance, auditing outcomes, and revenues and expenses that are not in the 990EZ ([Parsons 2003](#); [Blouin et al. 2018](#)).

Voluntary disclosure of the 990 also has the potential to be useful as a signaling device. Signaling theory posits that parties with inside information will sometimes convey some information about themselves to others, often to differentiate themselves and increase their perceived value (Ross 1977). Drawing on Blouin et al. (2018), charities voluntarily filing 990 are likely attempting to differentiate themselves from similar-sized charities by signaling competence and legitimacy. Taken together, signaling is likely to be especially useful in fundraising environments where charities are attempting to be standouts to draw more donations.

Costly signaling is particularly persuasive as it is a more credible signal. Charities have the potential to incur considerable signaling costs by voluntarily choosing to file a 990 since it is a more complex tax return and requires significant nonprofit tax expertise. This is especially true for charities eligible to file a 990EZ since they are smaller and have fewer resources. In addition, prior research (Weisbrod and Dominguez 1986; Posnett and Sandler 1989; Tinkelman 1999; Okten and Weisbrod 2000; Yetman and Yetman 2012, 2013) finds that donors respond favorably to stronger efficiency measures and unfavorably to weaker efficiency measures. The functional expense information needed to calculate efficiency measures is only available on 990. As a result, voluntary 990 filing opens up charities to negative reactions from donors if their reported efficiency is weaker. Furthermore, prior research (Harris et al. 2015) finds that donors respond positively (negatively) to charities that report good (poor) governance mechanisms on their 990. Disclosures that are only reported on the 990 about family and business relationships between board members and significant diversions of assets have the potential to be negatively viewed by donors. Similarly, prior research (Tinkelman 1998; Jones and Roberts 2006) indicates that donors respond unfavorably to joint cost disclosures. Voluntary 990 filing opens charities up to negative donor reactions if their governance disclosures report unfavorable information or if joint cost allocations are reported.

Finally, voluntary 990 filing has the potential to result in broader donor and watchdog scrutiny overall. A few donors are likely to obtain financial information about charities directly from IRS filings, which are typically available on charity and charity-focused websites such as Guidestar or ProPublica. However, most donors who are interested in financial information about charities are likely to use summarized charity ratings (Gordon, Knock, and Neely 2009; Harris and Neely 2016) from rating agencies (e.g., Charity Navigator, CharityWatch). These rating agencies typically obtain some or all of their financial information directly from 990 filings, which means that most rating agencies only assess charities that file a 990. Charity Navigator's website states "We don't rate organizations exempt from filing the Form 990, private foundations, or organizations that file the Form 990EZ" (emphasis added).<sup>4</sup> As a result, charities are more exposed to scrutiny when filing a 990 versus a 990EZ.

Prior research on the efficacy of voluntary disclosure regarding charities is both limited and mixed. Behn et al. (2010) show that charities that receive more of their revenues from donations are more likely to provide audited financial statements voluntarily. Saxton et al. (2014) and Blouin et al. (2018) provide evidence that donations are positively associated with voluntary online financial disclosures. Saxton et al. (2014) find that annual report disclosure and the number of nonfinancial performance disclosures are both associated with higher donations, but the quantity of financial disclosure is not. Alternatively, Blouin et al. (2018) show a stronger association between donations and the program ratio when voluntarily disclosed online. Most appropriate to our setting, Blouin et al. (2018) find that voluntary disclosure of the 990 on not-for-profit websites is strongly correlated with donations.

<sup>4</sup> See <https://www.charitynavigator.org/index.cfm?bay=content.view&cpid=5593#ratingcriteria>

## Hypotheses Development

Prior research provides strong and consistent evidence that donors monitor charities and are influenced by financial information disclosed on 990s in the form of efficiency measures, good governance, and other disclosures indicating transparency and good management such as whether a financial statement audit is performed. In turn, donors reward higher-performing charities (i.e., ones with higher reported efficiency, governance, etc.) via higher donations. Information specifically included on the 990 but not on the 990EZ is likely to be information-relevant to many donors. Prior research shows that functional expense information used to calculate efficiency measures, governance information, and joint cost allocation disclosures are useful disclosures to donors. Donors also react to factors related to the presence of financial statement audits and Single Audits that are disclosed on the 990, but not on the 990EZ.

On the other hand, there are at least three reasons why donors might not respond to the incremental information provided on voluntarily filed 990s. First, some donors are motivated to contribute to charities out of spirituality or to receive a “warm glow” from giving (Andreoni 1990; Gordon and Khumawala 1999) regardless of charities’ financial performance or transparency, especially for donors of smaller charities who are giving because they believe in the cause or the mission of an up-and-coming organization. Second, it might be too costly to obtain and evaluate 990 information, especially for less sophisticated donors who are more likely to give to smaller charities that are eligible to file a 990EZ.<sup>5</sup> Relatedly, more sophisticated donors such as private foundations are likely to have access to private financial information provided directly from charities (Hedge, Nico, and Fox 2009; Allen and McAllister 2019), and thus might not care about the incremental information provided in voluntary 990 filings. Finally, smaller charities are likely to have less visibility and are less recognizable in the philanthropic marketplace for donations. In this case, donors may be less aware or even unaware of a smaller charity voluntarily filing a 990.

When charities voluntarily file a 990, they likely determine that the potential benefits of providing additional information about governance, auditing outcomes, and revenues and expenses outweigh the incremental tax preparation costs and increased scrutiny. We expect that donors overall are likely to respond to voluntarily filed 990s through higher donations. Charities that voluntarily file 990 are providing donors with useful information that is above and beyond the 990EZ, which has the potential to increase the monitoring ability of donors. Charities that are more focused on attracting donations from donors might consider the expanded disclosures offered in Form 990 as a fundraising tool to signal financial accountability to differentiate themselves from others. Based on this, we propose our first hypothesis:

**H1:** Filing Form 990 voluntarily is positively related to donations.

Relatedly, charities seeking government grants, especially from state and local government agencies, might also consider the expanded disclosures offered in Form 990 as beneficial in their grant-writing processes. Charities that are awarded federal grants are unlikely to require 990 reporting because once they get to a specific size (e.g., \$750,000 in federal expenditures currently), Single Audit requirements become effective. In these cases, the Single Audit requirements provide the federal government with accountability for their grants to charities. However, there are no Single Audit-like requirements for smaller federal grants and state and local government grants,

<sup>5</sup> Yetman and Yetman (2013) define donor sophistication as a combination of donors’ incentives to incur search costs involved with obtaining information and their ability to judge the quality of the information.

which means that some grantors are likely to require 990 reporting to award and monitor grants. Therefore, we propose our second hypothesis:

**H2:** Filing Form 990 voluntarily is positively related to government grants.

### III. MAIN TEST 1

#### Sample

Our first main sample includes the annual filings of Form 990 for the period of 2010 to 2017. We obtain 990 data from the IRS SOI files available on the Internal Revenue Service website. The SOI files are collected by the IRS based on a large sample of charities. Our sample selection begins with all 116,562 observations between 2009 and 2017. The 2009 data are used for lagged values only. The eligibility thresholds for filing a 990EZ in place of a 990 changed once during our sample period. There was one set of thresholds for 2009 and one set of thresholds for 2010 and after.<sup>6</sup>

The sample selection process is presented in Table 1, Panel A. We eliminate 23 observations with missing donations or government grant data. We also delete 878 observations with zero or negative total assets, total revenue, or gross receipts. Next, we remove 35,619 observations with missing data for the control variables. We then eliminate 48,096 observations with missing values for our lagged variables. We follow Petrovits et al. (2011) and exclude 1,503 observations that are identified as one of the following groups: religion-related, mutual benefit, or unknown/unclassified (National Taxonomy of Exempt Entities (NTEE) major groups X, Y, and Z). Finally, we remove 6,856 observations that are not classified as 501(c)(3) charitable organizations. Our final sample consists of 23,587 observations between 2010 and 2017.

Table 1, Panel B presents the number of voluntary and nonvoluntary filers included in the final sample by NTEE classification. Voluntary filers constitute 252 out of 23,587 charity years or 1.1 percent of our sample. There are 162 unique charities in our sample that are voluntary filers (un-tabulated). The highest percentage of voluntary filers come from human services (19.4 percent); education (15.5 percent); arts, culture, and humanities (9.9 percent); and recreation and sports (9.5 percent). Our sample of voluntary filers is underweighted in health care and education as compared to nonvoluntary filers.

#### Variable of Interest—Voluntary 990 Filer

Our explanatory variable is *Voluntary Filer*. *Voluntary Filer* is a binary variable that is equal to 1 if the charity chooses to file Form 990 even when it is eligible to file a shorter 990EZ, and 0 otherwise. For 2009, organizations with gross receipts less than \$500,000 and total assets under \$1,250,000 are eligible to file 990EZ. Since 2010, the IRS has allowed organizations with gross receipts of less than \$200,000 and total assets of less than \$500,000 at the end of their tax year to file a 990EZ instead of a 990. The *Voluntary Filer* variable is set to 1 only when charities choose to file a 990 instead, even though they meet both the gross receipts and total assets thresholds to file a 990EZ.

In untabulated analysis, we compare our sample percentage of voluntary 990 filers (1.1 percent) with the IRS Core files. The Core files include data for all charities that file a 990 or 990EZ

<sup>6</sup> For 2010 and later, organizations with gross receipts less than \$200,000 and total assets less than \$500,000 are eligible to file Form 990EZ. The threshold changed several times before 2010. In 2008 (and 2009), organizations with gross receipts less than \$1 million (\$500,000) and total assets less than \$2.5 million (\$1.25 million) were eligible to file Form 990EZ. Before 2008, the threshold amounts were \$100,000 for gross receipts and \$250,000 for total assets.

**TABLE 1**  
**Main Test 1: Sample Selection**

**Panel A: Sample Selection**

	<b>Number of Observations</b>
Starts with	116,562
Missing donations or government grants	(23)
Total assets, total revenues, or gross receipts less than or equal to 0	(878)
Missing control variables	(35,619)
Missing lagged values	(48,096)
Excludes nonprofits that are in the categories of religion-related, mutual benefit, or unknown/unclassified exempt entities (NTEE major groups X, Y, Z)	(1,503)
Excludes non-501(c)(3) organizations	(6,856)
Ends at	23,587

**Panel B: Distribution of Charity-Year Observations by NTEE Group**

<b>NTEE Code and Description</b>	<b>Voluntary Filer</b>		<b>Nonvoluntary Filer</b>	
A Arts, Culture & Humanities	25	9.9%	1,403	6.0%
B Education	39	15.5%	5,216	22.4%
C Environment	16	6.3%	444	1.9%
D Animal-Related	3	1.2%	237	1.0%
E Health Care	13	5.2%	6,365	27.3%
F Mental Health & Crisis Intervention	5	2.0%	566	2.4%
G Voluntary Health Associations & Medical Disciplines	5	2.0%	251	1.1%
H Medical Research	1	0.4%	325	1.4%
I Crime & Legal-Related	8	3.2%	130	0.6%
J Employment	3	1.2%	260	1.1%
K Food, Agriculture & Nutrition	1	0.4%	111	0.5%
L Housing & Shelter	17	6.7%	1,271	5.4%
M Public Safety, Disaster Preparedness & Relief	8	3.2%	112	0.5%
N Recreation & Sports	24	9.5%	283	1.2%
O Youth Development	5	2.0%	273	1.2%
P Human Services	49	19.4%	3,150	13.5%
Q International, Foreign Affairs & National Security	3	1.2%	361	1.5%
R Civil Rights, Social Action & Advocacy	5	2.0%	41	0.2%
S Community Improvement & Capacity Building	10	4.0%	499	2.1%
T Philanthropy, Voluntarism & Grantmaking Foundations	9	3.6%	1,560	6.7%
U Science & Technology	2	0.8%	214	0.9%
V Social Science	0	0.0%	66	0.3%
W Public & Societal Benefit	1	0.4%	197	0.8%
Total	252	100%	23,335	100%

Table 1 provides sample selection information for main test 1. Panel A presents the sample attrition to determine the number of charity-year observations included in the final sample. Panel B provides the number and percentage of charity years by NTEE classification.



(Feng, Ling, Neely, and Roberts 2014; Feng and Greenlee 2023).<sup>7</sup> In the Core files, we exclude observations with zero or negative gross receipts, total revenue, or total assets and observations without lagged values to provide a consistent comparison. In the Core files, about 12.7 percent of observations are voluntary 990 filers. We also use an alternative explanatory variable, *Voluntary Filer\_Consecutive*, to capture more sustained decisions by charities to voluntarily file Form 990. The variable is equal to 1 if a charity voluntarily chooses to file a 990 in two consecutive years during the sample period, and 0 otherwise. Consecutive voluntary filers make up 61 out of 23,587 charity years or 0.3 percent of our sample (untabulated). There are 25 unique charities in our sample that are consecutive voluntary filers (untabulated).

A limitation of our study relates to the sampling approach used by the IRS for compiling the SOI 990 data files. The sampling rates used by the IRS for the SOI 990 files range from 1 percent for small asset classes to 100 percent for large asset classes (Feng et al. 2014). Our sample of 252 voluntary 990 filers is based on charities eligible to file a 990EZ, which means they mainly derive from the smallest asset classes that are undersampled in the SOI 990 files. The use of the SOI 990 data files and the IRS' sampling approach limit our study in two ways: (1) voluntary 990 filers are underweighted in terms of health and education organizations, and (2) voluntary 990 filers represent a smaller percentage of our total sample (1.1 percent) relative to the percentage of voluntary 990 filers present in the SOI data files (12.7 percent). Both limitations reduce the generalizability of our results.

### Research Design

Our first main test examines the relationship between voluntary filer status and donations or government grants, respectively, using the ordinary least square (OLS) regression models below.

$$\begin{aligned} \text{Donations}_{i,t} = & \beta_0 + \beta_1 * \text{Voluntary Filer}_{i,t-1} + \beta_2 * \text{Government Grants}_{i,t-1} + \beta_3 * \text{Restricted Donations}_{i,t-1} \\ & + \beta_4 * \text{Program Service Revenue}_{i,t-1} + \beta_5 * \text{Other Revenue}_{i,t-1} + \beta_6 * \text{Program Ratio}_{i,t-1} \\ & + \beta_7 * \text{Fundraising Expense}_{i,t-1} + \beta_8 * \text{Governance Index}_{i,t-1} + \beta_9 * \text{Size}_{i,t-1} \\ & + \beta_{10} * \text{Age}_{i,t} + \text{NTEE Fixed Effects} + \text{Year Fixed Effects} + \varepsilon \end{aligned} \quad (1)$$

or

$$\begin{aligned} \text{Government Grants}_{i,t} = & \beta_0 + \beta_1 * \text{Voluntary Filer}_{i,t-1} + \beta_2 * \text{Donations}_{i,t-1} + \beta_3 * \text{Restricted Donations}_{i,t-1} \\ & + \beta_4 * \text{Program Service Revenue}_{i,t-1} + \beta_5 * \text{Other Revenue}_{i,t-1} \\ & + \beta_6 * \text{Program Ratio}_{i,t-1} + \beta_7 * \text{Fundraising Expense}_{i,t-1} \\ & + \beta_8 * \text{Governance Index}_{i,t-1} + \beta_9 * \text{Size}_{i,t-1} + \beta_{10} * \text{Age}_{i,t} \\ & + \text{NTEE Fixed Effects} + \text{Year Fixed Effects} + \varepsilon \end{aligned} \quad (2)$$

All independent variables except for *Age*, the NTEE indicator variables, and the Year dummy variables are lagged by one year. Our models include the NTEE classifications and year identifiers to account for industry and year fixed effects. We use the natural logarithm for all unscaled continuous variables. We also add 1 to all continuous variables before taking the natural logarithm since

<sup>7</sup> Our main tests are based on a sample of voluntary 990 filers derived from the IRS SOI 990 data files rather than the IRS Core 990 data files. The SOI data files include the financial statement data elements needed for a complete donation determinant model, whereas the Core data files exclude several key financial statement data elements required to calculate the essential control variables, such as government grants, federated campaign amounts to calculate donations, the program and administrative expenses to calculate the program ratio, and the necessary components to calculate a governance index. In addition, the SOI data files are considered the most reliable given the significant error-checking conducted by the SOI Division of the IRS (Feng et al. 2014; Feng and Greenlee 2023).

the logarithm of 0 cannot be computed. To mitigate the extreme influence of outliers, we Winsorize all the variables at the 1st and 99th percentile. All variables are defined in [Appendix A](#).

Our first dependent variable is *Donations*, which has been used consistently in prior research ([Tinkelman 2004](#); [Tinkelman and Mankaney 2007](#); [Petrovits et al. 2011](#); [Yetman and Yetman 2013](#); [Harris et al. 2015](#); [Harris and Neely 2016](#)) in donor response models. Consistent with [Harris and Neely \(2016\)](#), *Donations* are equal to the natural logarithm of 1 plus the total contribution revenue (line 1h) less revenue from federated campaigns (line 1c) less government grant revenue (line 1f), as reported in Form 990, Part VIII. Our second dependent variable is *Government Grants*, which is equal to the natural logarithm of 1 plus the government grant revenue (Part VIII, line 1f).

Our two models include several control variables commonly used in previous studies. We include government grants to account for potential crowding-in or crowd-out effects. Prior research ([Okten and Weisbrod 2000](#); [Brooks 2000](#); [Khanna and Sandler 2000](#); [Smith 2007](#)) is mixed on this. On the one hand, donors may view greater government grants as an endorsement of higher charity quality, which in turn has the potential to lead to more donations (i.e., crowding-in). Conversely, greater amounts of government grants received may be perceived by potential donors that a charity is in less need of financial support and thus has the potential to crowd out donations. Similarly, [Petrovits et al. \(2011\)](#) include program service revenue and other revenues in the donation demand model to further control for the potential crowding-in and crowding-out effect. We do not have a prediction for *Government Grants*, *Program Service Revenue*, or *Other Revenue* in terms of their association with donations as the evidence in the literature is mixed.

*Restricted Donations* are measured as the ratio of temporarily and permanently restricted net assets combined to total net assets. *Restricted Donations* are used as a proxy for donors' sophistication or scrutiny ([Yetman and Yetman 2013](#)). We expect a positive association between *Restricted Donations* and *Donations*. *Program Ratio* is a measure of efficiency and is equal to total program expenses divided by total expenses overall. Donors favor charities that are more efficiently operated. We expect a positive association between *Program Ratio* and *Donations*. *Fundraising Expense* is included as a control variable to capture the cost of fundraising activities. We expect that fundraising expenses are positively correlated with donations given that a higher level of fundraising is likely to translate into increased donations. *Governance Index5* is a measure to gauge the strength of governance and is expected to be positively associated with donations ([Boland, Harris, Petrovits, and Yetman 2020](#)). Charities with an audit committee, independent board of directors, CEO compensation review policy, no outsourcing of management duties, and more disclosure on their website are considered to have stronger governance. Finally, we account for size and age. *Size* is equal to the natural logarithm of 1 plus the total assets. *Age* is equal to the number of years a charity has been formed. We expect the size and age of nonprofits to be positively correlated with donations as charities that are larger and older are more established and well known, which in turn helps them get more donations.

## Results

[Table 2](#) presents the descriptive statistics for the variables included in the first main test. In Panel A, we provide raw values of all variables. We find that on average, both the donations and government grants for voluntary filers are significantly lower than those of nonvoluntary filers. Consistent with our expectations, voluntary filers are smaller and younger, generate less program service revenue and other revenue, and incur lower fundraising expenses than nonvoluntary filers. In Panel B, we provide the natural logarithm values of the variables in our regression analyses.

**TABLE 2**  
**Main Test 1: Descriptive Statistics**

Panel A: Raw Values Sample	Full Sample			990 Voluntary Filer			990 Nonvoluntary Filer		
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.
	<b>n = 23,587</b>			<b>n = 252</b>			<b>n = 23,335</b>		
Donations <sub>t</sub>	7,143,274	606,354	22,444,505	99,518	46,937	289,627	7,219,341	630,598	22,553,352
Government Grants <sub>t</sub>	3,394,641	0	15,713,508	123,065	0	1,476,718	3,429,972	0	15,793,690
Restricted Donations <sub>t-1</sub>	0.23	0.05	0.32	0.08	0.00	0.00	0.23	0.05	0.00
Program Service Revenue <sub>t-1</sub>	56,040,331	3,819,024	148,797,745	40,972	2,512	67,323	56,645,080	4,099,796	149,484,613
Other Revenue <sub>t-1</sub>	1,535,663	107,245	4,862,271	12,832	0	30,331	1,552,108	111,867	4,885,865
Program Ratio <sub>t-1</sub>	0.83	0.86	0.14	0.82	0.89	0.22	0.83	0.86	0.14
Fundraising Expense <sub>t-1</sub>	585,511	4,590	1,693,088	6,135	0	16,632	591,768	5,239	1,701,128
Governance Index <sub>t-1</sub>	4.44	5	0.83	3.08	3	0.91	4.45	5	0.82
Size <sub>t-1</sub>	153,150,395	44,569,100	351,979,274	207,025	89,882	232,474	154,802,065	45,973,403	353,513,826
Age <sub>t</sub>	51	38	40	24	18	25	51	39	40
Panel B: Logged Values Sample	Full Sample			990 Voluntary Filer			990 Nonvoluntary Filer		
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.
	<b>n = 23,587</b>			<b>n = 252</b>			<b>n = 23,335</b>		
Donations <sub>t</sub>	11.59	13.32	5.44	9.36	10.76	3.75	11.62	13.35	5.45
Government Grants <sub>t</sub>	5.85	0.00	6.85	3.61	0.00	5.20	5.88	0.00	6.86
Program Service Revenue <sub>t-1</sub>	12.62	15.16	6.75	5.73	7.83	5.38	12.70	15.23	6.73
Other Revenue <sub>t-1</sub>	9.60	11.58	5.52	4.26	0.00	4.75	9.66	11.63	5.50
Fundraising Expense <sub>t-1</sub>	6.50	8.43	6.40	2.95	0.00	4.30	6.53	8.56	6.40
Size <sub>t-1</sub>	17.27	17.61	2.07	11.85	11.41	0.80	17.33	17.64	2.00

Table 2 presents descriptive statistics for main test 1. Panel A presents descriptive statistics for raw values of the variables in our sample. Panel B presents descriptive statistics for the natural logarithm form of the variables when applicable. Voluntary filers are the charities that are eligible to file Form 990EZ based on the level of their total assets and gross receipts but choose to file Form 990 instead. Nonvoluntary filers are the charities that are required to file Form 990 based on the level of their total assets or gross receipts. All variables are defined in [Appendix A](#).

The means and medians of the logged variables as compared to the raw variables indicate a more comparable scale and the standard deviations of the logged variables are now smaller.

The correlations among the variables are displayed in Table 3. The correlation matrices include *Voluntary Filer*, *Donations*, *Government Grants*, and all the control variables for our first main tests. Almost all correlations presented are statistically significant, and most Pearson and Spearman correlations are similar in size and direction. *Voluntary Filer* is negatively correlated with donations and grants at the univariate level since voluntary filers are much smaller than non-voluntary filers, and smaller charities tend to receive fewer donations and grants due to the lack of resources and shorter track records. Consistent with our predictions, *Restricted Donations*, *Program Ratio*, *Fundraising Expense*, *Governance Index5*, *Size*, and *Age* are all positively correlated with donations and grants. Multivariate analysis is appropriate given the significant correlations between the dependent variables and the control variables. Multicollinearity is not a concern in our analyses.<sup>8</sup>

Table 4 presents the results of our donations model. The *Voluntary Filer* variable is positively and significantly associated with donations (coefficient = 1.682; t-statistic = 5.13). The coefficient for *Voluntary Filer* indicates that on average, voluntary 990 filing translates to approximately a 438 percent increase in donations compared to required 990 filers.<sup>9</sup> The benefit associated with voluntary 990 filing in terms of higher donations is substantial and economically significant. Similarly, the alternative proxy, *Voluntary Filer\_Consecutive* is also positively associated with *Donations* (coefficient = 1.865; t-statistic = 2.49), which is consistent with our main results. The coefficient for *Voluntary Filer\_Consecutive* indicates that voluntary 990 filing results in a 546 percent increase in the level of donations. This provides evidence that the benefit of higher donations is stronger when charities voluntarily file a 990 in consecutive years as compared to the required 990 filers.

The coefficients on the control variables are all consistent with expectations. Charities with greater restricted net assets receive more donations. Program service revenues show a crowding-out effect with donations whereas government grants and other revenues both show a crowding-in effect with donations. Greater fundraising expenses incurred by charities and stronger governance are also associated with more donations. Finally, donors contribute more to larger charities (*Size*) and charities that have a longer track record (*Age*).

Table 5 presents the results of our government grants model. Similar to our results for the donations model, *Voluntary Filer* is positively associated with government grants (coefficient = 0.815, t-statistic = 1.71). This indicates that voluntary 990 filing results in a 126 percent increase in the level of government grants as compared to the required 990 filers. The benefit associated with voluntary 990 filing in terms of higher government grants is economically significant, even though not as strong as the benefits in the form of more donations. *Voluntary Filer\_Consecutive* is not associated with government grants (coefficient = 1.097; t-statistic = 1.15). This insignificant finding suggests that governments are less sensitive to the benefits associated with sustained voluntary filing, possibly because government grants are not recurring like donations. Government grants are likely to be more sporadic, and as a result, grants may not react as strongly to sustained voluntary filing as compared to donors. This provides mixed evidence that the benefit of higher government grants is stronger when charities voluntarily file a 990 in consecutive years.

<sup>8</sup> We deploy variance inflation factors (VIF) to check for multicollinearity in our analyses for donations (mean = 1.40; maximum = 1.70) and government grants (mean = 1.48; maximum = 1.92). The low VIFs for our independent variables indicate that multicollinearity is not a concern.

<sup>9</sup> We compute the economic significance of  $x$ 's effect on  $y$  using the following equation:  $\% \Delta y = 100 (e^{\beta} - 1)$ . We expect donations to be higher for voluntary 990 filers by 100  $(e^{\beta} - 1)$  percent than for nonvoluntary filers.

**TABLE 3**  
**Main Test 1: Correlations Voluntary Filers and Nonvoluntary 990 Filers**

	<b>Donations<sub>t</sub></b>	<b>Government Grants<sub>t</sub></b>	<b>Voluntary Filer<sub>t-1</sub></b>	<b>Restricted Donations<sub>t-1</sub></b>	<b>Program Service Revenue<sub>t-1</sub></b>	<b>Other Revenue<sub>t-1</sub></b>	<b>Program Ratio<sub>t-1</sub></b>
<i>Donations<sub>t</sub></i>	1.000	0.206 <0.0001	-0.043 <0.0001	0.289 <0.0001	0.022 0.001	0.285 <0.0001	-0.054 <0.0001
<i>Government Grants<sub>t</sub></i>	0.219 <0.0001	1.000	-0.034 <0.0001	0.062 <0.0001	0.215 <0.0001	0.202 <0.0001	0.052 <0.0001
<i>Voluntary Filer<sub>t-1</sub></i>	-0.089 <0.0001	-0.039 <0.0001	1.000	-0.049 <0.0001	-0.106 <0.0001	-0.100 <0.0001	-0.009 0.177
<i>Restricted Donations<sub>t-1</sub></i>	0.512 <0.0001	0.144 <0.0001	-0.086 <0.0001	1.000	-0.194 <0.0001	0.025 0.000	-0.066 <0.0001
<i>Program Service Revenue<sub>t-1</sub></i>	0.066 <0.0001	0.218 <0.0001	-0.116 <0.0001	-0.098 <0.0001	1.000	0.325 <0.0001	0.127 <0.0001
<i>Other Revenue<sub>t-1</sub></i>	0.319 <0.0001	0.226 <0.0001	-0.104 <0.0001	0.130 <0.0001	0.479 <0.0001	1.000	-0.042 <0.0001
<i>Program Ratio<sub>t-1</sub></i>	-0.123 <0.0001	-0.014 0.037	0.022 0.001	-0.165 <0.0001	0.039 <0.0001	-0.120 <0.0001	1.000
<i>Fundraising Expense<sub>t-1</sub></i>	0.685 <0.0001	0.225 <0.0001	-0.064 <0.0001	0.514 <0.0001	0.045 <0.0001	0.270 <0.0001	-0.230 <0.0001
<i>Governance Index5<sub>t-1</sub></i>	0.366 <0.0001	0.224 <0.0001	-0.144 <0.0001	0.243 <0.0001	0.266 <0.0001	0.287 <0.0001	-0.155 <0.0001
<i>Size<sub>t-1</sub></i>	0.436 <0.0001	0.147 <0.0001	-0.174 <0.0001	0.182 <0.0001	0.509 <0.0001	0.508 <0.0001	0.016 0.014
<i>Age<sub>t</sub></i>	0.340 <0.0001	0.222 <0.0001	-0.088 <0.0001	0.306 <0.0001	0.361 <0.0001	0.385 <0.0001	-0.126 <0.0001
	<b>Fundraising Expense<sub>t-1</sub></b>	<b>Governance Index5<sub>t-1</sub></b>	<b>Size<sub>t-1</sub></b>	<b>Age<sub>t</sub></b>			
<i>Donations<sub>t</sub></i>	0.571 <0.0001	0.349 <0.0001	0.271 <0.0001	0.312 <0.0001			
<i>Government Grants<sub>t</sub></i>	0.191 <0.0001	0.213 <0.0001	0.136 <0.0001	0.236 <0.0001			

(continued on next page)

TABLE 3 (continued)

	<i>Fundraising Expense</i> <sub>t-1</sub>	<i>Governance Index5</i> <sub>t-1</sub>	<i>Size</i> <sub>t-1</sub>	<i>Age</i> <sub>t</sub>
<i>Voluntary Filer</i> <sub>t-1</sub>	-0.058 <0.0001	-0.169 <0.0001	-0.272 <0.0001	-0.069 <0.0001
<i>Restricted Donations</i> <sub>t-1</sub>	0.349 <0.0001	0.106 <0.0001	0.118 <0.0001	0.183 <0.0001
<i>Program Service Revenue</i> <sub>t-1</sub>	0.011 0.086	0.239 <0.0001	0.323 <0.0001	0.309 <0.0001
<i>Other Revenue</i> <sub>t-1</sub>	0.245 <0.0001	0.294 <0.0001	0.388 <0.0001	0.330 <0.0001
<i>Program Ratio</i> <sub>t-1</sub>	-0.123 <0.0001	-0.052 <0.0001	0.041 <0.0001	-0.008 0.248
<i>Fundraising Expense</i> <sub>t-1</sub>	1.000	0.354 <0.0001	0.2216 <0.0001	0.332 <0.0001
<i>Governance Index5</i> <sub>t-1</sub>	0.382 <0.0001	1.000	0.342 <0.0001	0.292 <0.0001
<i>Size</i> <sub>t-1</sub>	0.298 <0.0001	0.312 <0.0001	1.000	0.355 <0.0001
<i>Age</i> <sub>t</sub>	0.365 <0.0001	0.337 <0.0001	0.341 <0.0001	1.000

Table 3 presents correlations for main test 1. Pearson correlations appear above the diagonal, and Spearman correlations appear below. Italicized p-values appear below the correlations. All variables are defined in [Appendix A](#).

**TABLE 4**  
**Main Test 1: The Effect of Filing Form 990 Voluntarily on Donations**

<b>Variables</b>	<b>Dependent Variable:</b> <b><i>Donations<sub>t</sub></i></b>	
<i>Voluntary Filer<sub>t-1</sub></i>	1.682*** (5.13)	
<i>Voluntary Filer_Consecutive</i>		1.865*** (2.49)
<i>Government Grants<sub>t-1</sub></i>	0.062*** (10.86)	0.062*** (10.90)
<i>Restricted Donations<sub>t-1</sub></i>	1.528*** (9.89)	1.516*** (9.81)
<i>Program Service Revenue<sub>t-1</sub></i>	-0.041*** (-4.54)	-0.041*** (-4.57)
<i>Other Revenue<sub>t-1</sub></i>	0.087*** (8.94)	0.087*** (8.94)
<i>Program Ratio<sub>t-1</sub></i>	0.771*** (2.39)	0.769*** (2.39)
<i>Fundraising Expense<sub>t-1</sub></i>	0.344*** (39.92)	0.344*** (40.00)
<i>Governance Index<sub>5,t-1</sub></i>	0.691*** (11.00)	0.677*** (10.83)
<i>Size<sub>t-1</sub></i>	0.187*** (6.23)	0.170*** (5.80)
<i>Age<sub>t</sub></i>	0.008*** (8.46)	0.009*** (8.61)
Intercept	1.419*** (2.64)	1.813*** (3.50)
Year and NTEE fixed effect	Yes	Yes
Sample size	23,587	23,587
Adjusted R <sup>2</sup>	0.420	0.419

\*, \*\*, \*\*\* Indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Table 4 presents the results of the impact of filing Form 990 voluntarily on donations (main test 1). *Voluntary Filer* and *Voluntary Filer\_Consecutive* are the key variables of interest in the regressions. Year and industry/NTEE fixed effect are included in all regressions. The t-statistics reported in parentheses are based on two-tailed tests and standard errors are adjusted for the charity clustering effect.

All variables are defined in [Appendix A](#).

## IV. MAIN TEST 2

Our hypotheses are based on the idea that voluntary 990-filing charities are offering donors and grantors enhanced financial disclosures to reduce information asymmetries (Parsons 2003, 2007; Blouin et al. 2018) as well as signaling accountability, competence, and legitimacy (Blouin et al. 2018). Our first main test examines whether voluntary 990 filers have higher donations and

**TABLE 5**  
**Main Test 1: The Effect of Filing Form 990 Voluntarily on Government Grants**

<b>Variables</b>	<b>Dependent Variable: Government Grants<sub>t</sub></b>	
<i>Voluntary Filer<sub>t-1</sub></i>	0.815* (1.71)	
<i>Voluntary Filer_Consecutive</i>		1.097 (1.15)
<i>Donations<sub>t-1</sub></i>	0.146*** (11.25)	0.147*** (11.30)
<i>Restricted Donations<sub>t-1</sub></i>	0.177 (0.78)	0.171 (0.75)
<i>Program Service Revenue<sub>t-1</sub></i>	0.109*** (9.22)	0.109*** (9.22)
<i>Other Revenue<sub>t-1</sub></i>	0.097*** (7.89)	0.097*** (7.89)
<i>Program Ratio<sub>t-1</sub></i>	3.143*** (8.77)	3.141*** (8.69)
<i>Fundraising Expense<sub>t-1</sub></i>	0.073*** (5.64)	0.073*** (5.64)
<i>Governance Index<sub>5,t-1</sub></i>	0.720*** (9.14)	0.714*** (9.06)
<i>Size<sub>t-1</sub></i>	-0.066* (-1.71)	-0.074** (-1.96)
<i>Age<sub>t</sub></i>	0.021*** (11.69)	0.021*** (11.73)
Intercept	-3.145*** (-4.33)	-2.968*** (-4.22)
Year and NTEE fixed effect	Yes	Yes
Sample size	23,587	23,587
Adjusted R <sup>2</sup>	0.162	0.162

\*, \*\*, \*\*\* Indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Table 5 presents the results of the impact of filing Form 990 voluntarily on government grants (main test 1). *Voluntary Filer* and *Voluntary Filer\_Consecutive* are the key variables of interest in the regressions. Year and industry/NTEE fixed effect are included in all regressions. The t-statistics reported in parentheses are based on two-tailed tests and standard errors are adjusted for the charity clustering effect.

All variables are defined in [Appendix A](#).

government grants as compared to the charities required to file a 990. In our second main test, we revise our comparison sample and examine whether voluntary 990 filers have higher contributions relative to charities choosing to file a 990EZ. We believe that eligible 990EZ filers offer the more relevant comparison group since it provides the ability to determine whether 990EZ filers across the board benefit in terms of attracting higher donations when they voluntarily choose to file a 990.



## Sample

Our second main sample includes the annual filings of Form 990EZ for the period of 2010 to 2017. We obtain 990EZ data from the IRS SOI files available on the Internal Revenue Service website. Our sample selection begins with all 11,265 observations between 2009 and 2017. The 2009 data are used for lagged values only. We eliminate 164 observations with zero or negative total assets, total revenue, or gross receipts. Next, we remove 53 observations with missing data for the control variables. We then eliminate 4,066 observations with missing values for our lagged variables and exclude 990 observations that are identified as one of the following groups: religion-related, mutual benefit, or unknown/unclassified (NTEE major groups X, Y, and Z). Finally, we remove 2,218 observations that are not classified as 501(c)(3) charitable organizations. Our final sample consists of 4,026 observations between 2010 and 2017, including the 252 observations that comprise our voluntary 990 filer subsample. The sample selection process is presented in [Table 6](#), Panel A.

[Table 6](#), Panel B presents the number of 990EZ filers included in the final comparison sample by NTEE classification. The highest percentage of 990EZ filers come from education (23.6 percent); arts, culture, and humanities (14.2 percent); recreation and sports (13.9 percent); and human services (11.2 percent).

## Research Design

The second main test examines the relationship between voluntary filer status and total contributions using the OLS regression model below.

$$\begin{aligned} \text{Total Contributions}_{i,t} = & \beta_0 + \beta_1 * \text{Voluntary Filer}_{i,t-1} + \beta_2 * \text{Program Service Revenue}_{i,t-1} \\ & + \beta_3 * \text{Other Revenue}_{i,t-1} + \beta_4 * \text{Size}_{i,t-1} + \text{NTEE Fixed Effects} \\ & + \text{Year Fixed Effects} + \varepsilon \end{aligned} \quad (3)$$

Our dependent variable is *Total Contributions* and includes both donations and government grants revenue. The 990EZ tax form is limited because it reports *Total Contributions* as a single combined total for all contribution types whereas the 990 separates total contributions into donations, government grants, and other types. Our model includes three control variables: *Program Service Revenue*, *Other Revenue*, and *Size*. All three control variables are described earlier in the paper. Data limitations inherent to the 990EZ result in excluding the other control variables from our first main test, specifically *Restricted Donations*, *Program Ratio*, *Fundraising Expenses*, *Governance Index*<sup>5</sup>, and *Age*. All variables are defined in [Appendix A](#).

## Results

[Table 7](#) presents the descriptive statistics for the variables included in the second main sample. Panels A and B provide raw and logged values for all variables, respectively. The 990 voluntary filer subsample is composed of the same 252 observations used in our main sample and tests. The comparison sample consists of 4,026 total observations. Voluntary 990 filers constitute 6.3 percent of the sample. We find that contributions for voluntary filers are substantially higher than those of 990EZ filers. We also find that voluntary 990 filers report higher program service revenue, other revenue, and total assets. Finally, the means and medians of the logged variables indicate a more comparable scale and the standard deviations of the logged variables are smaller. Panel C presents the correlation matrices for *Voluntary Filer*, *Total Contributions*, and control variables for

**TABLE 6**  
**Main Test 2: Sample Selection**

**Panel A: Sample Selection**

	<b>Number of Observations</b>
Starts with	11,265
Total assets, total revenues, or gross receipts less than or equal to 0	(164)
Missing control variables	(53)
Missing lagged values	(4,066)
Excludes nonprofits that are in the categories of religion-related, mutual benefit, or unknown/unclassified exempt entities (NTEE major groups X, Y, Z)	(990)
Excludes nonprofits that are not 501(c)(3) organizations	(2,218)
Total EZ filer comparison group	3,774
Combines with 990 voluntary filers	252
Ends at	4,026

**Panel B: Distribution of Total EZ Filer Comparison Group by NTEE**  
**NTEE Code and Description**

<b>NTEE Code and Description</b>	<b>EZ Filer</b>	
A Arts, Culture & Humanities	537	14.2%
B Education	892	23.6%
C Environment	79	2.1%
D Animal-Related	103	2.7%
E Health Care	152	4.0%
F Mental Health & Crisis Intervention	83	2.2%
G Voluntary Health Associations & Medical Disciplines	60	1.6%
H Medical Research	28	0.7%
I Crime & Legal-Related	53	1.4%
J Employment	19	0.5%
K Food, Agriculture & Nutrition	63	1.7%
L Housing & Shelter	60	1.6%
M Public Safety, Disaster Preparedness & Relief	89	2.4%
N Recreation & Sports	525	13.9%
O Youth Development	115	3.0%
P Human Services	423	11.2%
Q International, Foreign Affairs & National Security	141	3.7%
R Civil Rights, Social Action & Advocacy	15	0.4%
S Community Improvement & Capacity Building	140	3.7%
T Philanthropy, Voluntarism & Grantmaking Foundations	131	3.5%
U Science & Technology	18	0.5%
V Social Science	7	0.2%
W Public & Societal Benefit	41	1.1%
Total	3,774	100%

Table 6 provides sample selection information for main test 2. Panel A presents the sample attrition to determine the number of charity-year observations included in the final sample. Panel B provides the number and percentage of charity years for 990EZ filers by NTEE classification.

**TABLE 7**  
**Main Test 2: Descriptive Statistics and Correlations**

**Panel A: Raw Values**

Sample	Full Sample n = 4,026			990 Voluntary Filer n = 252			990EZ Filer n = 3,774		
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.
<i>Total Contributions<sub>t</sub></i>	49,332	36,408	49,098	92,410	82,398	69,761	46,455	33,711	45,997
<i>Program Service Revenue<sub>t-1</sub></i>	24,894	0	39,606	36,471	2,512	50,795	24,121	0	38,630
<i>Other Revenue<sub>t-1</sub></i>	2,378	0	8,900	10,128	0	17,627	1,861	0	7,717
<i>Size<sub>t-1</sub></i>	92,158	56,143	100,885	156,005	89,882	153,184	87,895	54,571	94,900

**Panel B: Logarithm Values**

Sample	Full Sample n = 4,026			990 Voluntary Filer n = 252			990EZ Filer n = 3,774		
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.
<i>Total Contributions<sub>t</sub></i>	9.01	10.50	3.66	10.34	11.32	2.85	8.92	10.43	3.69
<i>Program Service Revenue<sub>t-1</sub></i>	4.90	0.00	5.24	5.71	7.83	5.36	4.84	0.00	5.23
<i>Other Revenue<sub>t-1</sub></i>	1.80	0.00	3.40	4.24	0.00	4.71	1.64	0.00	3.23
<i>Size<sub>t-1</sub></i>	10.81	10.94	1.26	11.29	11.41	1.37	10.78	10.91	1.25

**Panel C: Correlations for Voluntary Filers and 990EZ Filers**

	<u><i>Total Contributions<sub>t</sub></i></u>	<u><i>Voluntary Filer<sub>t-1</sub></i></u>	<u><i>Other Revenue<sub>t-1</sub></i></u>	<u><i>Size<sub>t-1</sub></i></u>
<i>Total Contributions<sub>t</sub></i>	1.000	0.095	0.011	0.101
<i>Voluntary Filer<sub>t-1</sub></i>	0.159	1.000	0.185	0.099
<i>Other Revenue<sub>t-1</sub></i>	<0.0001	<0.0001	1.000	<0.0001
<i>Size<sub>t-1</sub></i>	-0.064	0.163	0.147	1.000
	<0.0001	<0.0001	<0.0001	<0.0001
	0.078	0.101	0.147	1.000
	<0.0001	<0.0001	<0.0001	<0.0001

Table 7 presents descriptive statistics and correlations for main test 2. Panel A presents descriptive statistics for raw values of the variables in our sample. Panel B presents descriptive statistics for the natural logarithm form of the variables when applicable. Voluntary filers are the charities that are eligible to file Form 990EZ based on the level of their total assets and gross receipts but choose to file Form 990 instead. 990EZ filers are the charities that are eligible to file Form 990EZ based on the level of their total assets or gross receipts. Panel C presents correlations. Pearson correlations appear above the diagonal, and Spearman correlations appear below. Italicized p-values appear below the correlations.

All variables are defined in [Appendix A](#).

our second main test. As expected, *Voluntary Filer* is positively correlated with *Total Contributions*. VIFs are low for our independent variables (mean = 1.10; maximum = 1.12).

Table 8 presents the results of our total contributions model. Like our first main test results, we find that both *Voluntary Filer* (coefficient = 1.373; t-statistic = 5.23) and *Voluntary Filer\_Consecutive*

**TABLE 8**  
**Main Test 2: The Effect of Filing Form 990 Voluntarily on Total Contributions**

Variable	Dependent Variable: <i>Total Contributions<sub>t</sub></i>	
<i>Voluntary Filer<sub>t-1</sub></i>	1.373*** (5.23)	
<i>Voluntary Filer_Consecutive</i>		1.353*** (2.75)
<i>Program Service Revenue<sub>t-1</sub></i>	-0.135*** (-6.29)	-0.132*** (-6.15)
<i>Other Revenue<sub>t-1</sub></i>	0.006 (0.22)	0.017 (0.65)
<i>Size<sub>t-1</sub></i>	0.259*** (3.08)	0.274*** (3.26)
Intercept	7.710*** (7.80)	7.765*** (7.83)
Year and NTEE fixed effect	Yes	Yes
Sample size	4,026	4,026
Adjusted R <sup>2</sup>	0.146	0.141

\*, \*\*, \*\*\* Indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Table 8 presents the results of the impact of filing Form 990 voluntarily on total contributions (main test 2). *Voluntary Filer* and *Voluntary Filer\_Consecutive* are the key variables of interest in the regressions. Fewer variables are included in the model as Form 990EZ is shorter than Form 990 and reports fewer variables as a result. Year and industry/NTEE fixed effects are included in all regressions. The t-statistics reported in parentheses are based on two-tailed tests and standard errors are adjusted for the charity clustering effect.

All variables are defined in [Appendix A](#).

(coefficient = 1.353; t-statistic = 2.75) variables have a positive impact on total contributions. The coefficient for *Voluntary Filer* indicates that voluntary 990 filing results in a 295 percent increase in the level of total contributions as compared to eligible 990EZ filers. The benefit associated with voluntary 990 filing in terms of higher total contributions is again substantial and economically significant. The coefficient for *Voluntary Filer\_Consecutive* indicates that voluntary 990 filing results in a 287 percent increase in the level of total contributions, similar to the effect of *Voluntary Filer*.

The total contributions received by charities along with their decision to file a 990 voluntarily could potentially be affected by variables that are not included in our specified models (i.e., omitted variable bias). We address this endogeneity issue by employing a two-stage IV model with the voluntary filer and 990EZ filer subsamples.<sup>10</sup> An IV should satisfy two criteria: (1) it should be theoretically and empirically associated with the independent variable (relevance criterion), and (2) its effect on the dependent variable should only be channeled through the independent variable (exogeneity criterion). In the first stage, we perform a Probit analysis to predict which charities

<sup>10</sup> The 2SLS approach is not applicable to the nonvoluntary 990 filer subsample as observations in that subsample do not have a choice to file 990 voluntarily or nonvoluntarily. They are automatically classified as nonvoluntary filers because their gross receipts or total assets or both are above the threshold (i.e., required to file 990 instead of their own choice). Therefore, the first-stage determinant model does not apply to them. In contrast, for 990EZ and voluntary 990 filers, it is their choice to file either a 990EZ or 990.

choose to voluntarily file a 990 (value = 1) or a 990EZ (value = 0). We use *High Reporting Index* as the IV. Based on [Desai and Yetman \(2005, 2015\)](#), *High Reporting Index* is constructed with a set of state-law variables meant to enhance the reporting environment and mainly focused on laws that require additional charity disclosures (e.g., required reporting of articles of incorporation and bylaws, financial statements included).<sup>11</sup> We expect that charities operating in the states with high reporting indices are also in higher disclosure jurisdictions in general, and therefore are more likely to provide more financial information by voluntarily filing a 990. We also expect that total contributions are driven by factors other than state-level laws related to states' attorneys' general regulating charity reporting activities. Donors and grantors are likely to base their giving decisions primarily on mutual aid, spirituality, social rewards, and other internal motivations and/or external influences rather than on state-level reporting laws ([Gordon and Khumawala 1999](#)). Combined, *High Reporting Index* is an appropriate IV as it likely affects only voluntary filing but not total contributions directly (i.e., its effect on total contribution is likely only indirectly through voluntary filing).

The control variables in our first stage model are identified in prior research (specifically [Behn et al. 2010](#)) as proper determinants of nonprofit voluntary disclosure. These other variables include debt (*DebtRatio*), contribution intensity (*ContRatio*), officer and director compensation (*CompRatio*), educational charities (*Education*), and size. Charities with more debt are likely to be under more scrutiny from creditors as they exercise their monitoring due diligence and therefore more likely to respond favorably to requests for more information. In the same spirit, as the ratio of contributions to total revenues and the ratio of officer and director compensation to total expenses both increase, donors and regulators alike are likely to demand more transparency from charities to ensure that donations are used for the public good, leading to more voluntary disclosure from nonprofits. Educational institutions might be more transparent in financial reporting due to public record statutes and the presence of public funding. [Behn et al. \(2010\)](#) argue that "higher education nonprofit organizations are familiar with more scrutiny and, therefore, are more open with their financial information." We also include *Size* as our final control variable.

[Table 9](#), Panel A presents the results of the first-stage prediction model. The coefficient for *High Reporting Index* is positive and significantly associated with *Voluntary Filer* (coefficient = 0.140; z-statistic = 1.93). In addition, *DebtRatio*, *ContRatio*, and *Size* coefficients are also positive and significant. The Pseudo R<sup>2</sup> is 0.137, indicating that the first stage is a reasonable overall model to predict voluntary filing. The partial F-statistic (F-value = 13.88) is above the critical value of 8.96 based on [Larcker and Rusticus \(2010\)](#) for a one-instrument model. An F-value below the critical value implies that an instrument is weak. [Table 9](#), Panel B presents the second-stage results using the predicted *Voluntary Filer* variable. The coefficient for the predicted *Voluntary Filer* variable remains significant and positively related to total contributions, which is consistent with our earlier results. Overall, these findings lend further support to our hypothesis that filing a 990 voluntarily has a positive impact on total contributions.

## V. SUPPLEMENTAL ANALYSES

We perform two supplemental analyses. First, we address whether our main results could be driven by systematic differences between the voluntary 990 filers, nonvoluntary 990 filers, and

<sup>11</sup> The *High Reporting Index* variable (defined in [Appendix A](#)) in our study includes eight of the nine disclosure variables included in [Desai and Yetman \(2005, 2015\)](#). We exclude the "Fundraising Organizations Used" component in their measure of disclosure since it is likely to affect donations since utilizing a fundraising organization likely leads to more donations, which negates its viability as an IV (i.e., violation of the exogeneity criterion).

TABLE 9

## Main Test 2: The Effect of Filing Form 990 Voluntarily on Total Contributions—2SLS IV Approach

## Panel A: Stage 1

Variables	Dependent Variable: <i>Voluntary Filer</i>
<i>DebtRatio</i>	0.276*** (3.85)
<i>ContRatio</i>	0.371*** (3.90)
<i>CompRatio</i>	0.135 (0.59)
<i>Education</i>	-0.326 (-0.44)
<i>High Reporting Index</i>	0.140* (1.93)
<i>Size</i>	0.167*** (5.72)
Intercept	-3.165*** (-8.78)
Year and NTEE fixed effects	Yes
Sample size	4,012
Pseudo R <sup>2</sup>	0.137
Partial R <sup>2</sup>	0.017
Partial F-statistic	13.880

## Panel B: Stage 2

Variables	Dependent Variable: <i>Total Contributions</i>
<i>Voluntary Filer</i> (Instrumented)	21.338*** (8.21)
Control variables included	Yes
Year and NTEE fixed effects	Yes
Sample size	4,012
Adjusted R <sup>2</sup>	0.261

\*, \*\*, \*\*\* Indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Table 9 presents the results of the impact of filing Form 990 voluntarily on total contributions using a 2SLS IV approach (main test 2). Panel A presents the results of the first stage using a probit regression on voluntary filing. Panel B presents the results of the second stage using the instrumented voluntary filer variable (estimated value of voluntary filer variable) which is calculated from the probit model in the first stage. Year and industry/NTEE fixed effect are included in all regressions. The t-statistics reported in parentheses are based on two-tailed tests and standard errors are adjusted for the charity clustering effect.

All variables are defined in [Appendix A](#).

990EZ filers by using an entropy balancing approach. Using an entropy balancing approach provides additional assurance that the results are not driven by sample selection bias based on determinants other than the *Voluntary Filer* variable. One advantage of using the entropy balancing

**TABLE 10**  
**Variable Moment Conditions and Results—Entropy Balance Procedure**

**Panel A: Variable Moment Conditions—Comparison of Voluntary Filers to Nonvoluntary 990 Filers**

	Voluntary Filers			(Pre-Entropy Balance Procedure)			(Post-Entropy Balance Procedure)		
	Mean	Variance	Skewness	Mean	Variance	Skewness	Mean	Variance	Skewness
<i>Donations<sub>t-1</sub></i>	0.08	0.05	3.21	0.23	0.10	1.29	0.08	0.06	3.27
<i>Government Grants<sub>t-1</sub></i>	3.43	25.95	0.84	5.84	46.98	0.42	3.43	29.74	0.99
<i>Restricted Donations<sub>t-1</sub></i>	5.73	28.98	-0.06	12.70	45.24	-1.09	5.73	36.68	0.17
<i>Program Service Revenue<sub>t-1</sub></i>	4.26	22.52	0.32	9.66	30.26	-0.88	4.26	25.34	0.47
<i>Other Revenue<sub>t-1</sub></i>	0.82	0.05	-1.71	0.83	0.02	-2.57	0.82	0.05	-1.86
<i>Program Ratio<sub>t-1</sub></i>	2.96	18.52	0.84	6.53	41.02	0.05	2.96	19.79	0.93
<i>Fundraising Expense<sub>t-1</sub></i>	3.08	0.82	0.49	4.45	0.67	-1.42	3.08	0.84	0.45
<i>Governance Index<sub>5,t-1</sub></i>	11.85	0.65	1.02	17.33	4.00	-0.48	11.85	0.97	2.04
<i>Size<sub>t-1</sub></i>	24.29	615.90	3.30	51.00	1588.00	1.26	24.29	508.40	1.84
<i>Age<sub>t</sub></i>	3.43	25.95	0.84	5.84	46.98	0.42	3.43	29.74	0.99

**Panel B: Variable Moment Conditions—Comparison of Voluntary Filers to 990EZ**

	Voluntary Filers			(Pre-Entropy Balance Procedure)			(Post-Entropy Balance Procedure)		
	Mean	Variance	Skewness	Mean	Variance	Skewness	Mean	Variance	Skewness
<i>Program Service Revenue<sub>t-1</sub></i>	5.71	28.73	-0.06	4.84	27.32	0.20	5.71	27.08	-0.13
<i>Other Revenue<sub>t-1</sub></i>	4.24	22.14	0.31	1.64	10.42	1.66	4.23	18.37	0.20
<i>Size<sub>t-1</sub></i>	11.29	1.87	-0.73	10.77	1.56	-0.65	11.29	1.18	-0.74

(continued on next page)

TABLE 10 (continued)

## Panel C: Results After Applying the Entropy Balance Procedure

Variables	Dependent Variables		
	<i>Donations</i>	<i>Government Grants</i>	<i>Total Contributions</i>
<i>Voluntary Filer</i>	0.404 (1.24)	-0.616 (-1.46)	1.320*** (6.55)
Control variables included	Yes	Yes	Yes
Year and NTEE fixed effect	Yes	Yes	Yes
Sample size	23,587	23,587	4,026
R <sup>2</sup>	0.290	0.246	0.172

\*, \*\*, \*\*\* Indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Table 10 presents variable moment conditions and results after applying the entropy balance procedure. Panel A presents the values of mean, variance, and skewness of the voluntary filer subsample along with those for the nonvoluntary Form 990 filer subsample before and after the entropy. Panel B presents the values of mean, variance, and skewness of the voluntary filer subsample along with those for the 990EZ filer subsample before and after the entropy. Panel C presents the results after applying the entropy balance procedure to both the nonvoluntary 990 filer and 990EZ filer subsamples.

All variables are defined in [Appendix A](#).

approach is that it balances all observable covariates in our main models but does not reduce sample size ([Hainmueller 2012](#)).

[Table 10](#), Panel A presents the means, variance, and skewness of the observable covariates included in the first main sample comparing voluntary 990 filers to charities that are required to file a 990. Similarly, [Table 10](#), Panel B presents the means, variance, and skewness of the observable covariates included in the second main sample comparing voluntary 990 filers to 990EZ filers. Both panels present the observable covariates before (unweighted) and after (weighted) the entropy balancing procedure and show that the means of the weighted observable covariates are completely balanced. The variance and skewness measures are also better balanced after the entropy procedure.

[Table 10](#), Panel C presents the results for both main tests after applying the entropy balancing procedure based on convergence on the first moment (means). We find that the *Voluntary Filer* variable is positive and statistically significant (coefficient = 1.320, t-statistic = 6.55) in the total contributions model. The coefficient indicates that voluntary 990 filing results in a 274 percent increase in the level of total contributions as compared to 990EZ filers, which is also economically significant. The *Voluntary Filer* variable has a positive but insignificant coefficient (coefficient = 0.404, t-statistic = 1.24) in the donations model. The *Voluntary Filer* variable is statistically insignificant in the government grants model.

Second, we compare the voluntary 990 filer subsample ( $n = 252$ ) to similar-sized subsamples, either the bottom quartile of nonvoluntary 990 filers ( $n = 5,833$ ) or the top quartile of 990EZ filers ( $n = 800$ ), to further rule out the possibility that our results are driven by charity size. As presented in [Table 11](#), we find that the *Voluntary Filer* variables (coefficients = 0.819 and 1.302; t-statistics = 2.36 and 4.03, respectively) are significant in both the donations and total contributions models. The *Voluntary Filer* variable is insignificant in the grants model.



**TABLE 11**  
**Comparison of Voluntary 990 Filers to Similar-Sized Nonvoluntary 990 Filers or EZ Filers**

Variables	Dependent Variable		
	<i>Donations<sub>t</sub></i>	<i>Government Grants<sub>t</sub></i>	<i>Total Contributions<sub>t</sub></i>
<i>Voluntary Filer<sub>t-1</sub></i>	0.819** (2.36)	0.066 (0.13)	1.302*** (4.03)
Control variables included	Yes	Yes	Yes
Year and NTEE fixed effect	Yes	Yes	Yes
Sample size	6,085	6,085	1,052
Adjusted R <sup>2</sup>	0.413	0.119	0.149

\*, \*\*, \*\*\* Indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Table 11 presents the results of the impact of filing Form 990 voluntarily on donations, grants, and total contributions compared to similarly size nonvoluntary filers or EZ filers. We compare voluntary 990 filers to nonvoluntary 990 filers or charities that choose to file 990EZ that are similar in size. In the first two columns, we compare the voluntary filer subsample to the bottom quartile of the nonvoluntary filer subsample. In the third column, we compare the voluntary filer subsample to the top quartile of the EZ filer subsample. *Voluntary Filer* is the key variable of interest in the regressions. Control variables, year, and industry/ NTEE fixed effect are included in all regressions. The t-statistics reported in parentheses are based on two-tailed tests and standard errors are adjusted for the charity clustering effect.

All variables are defined in [Appendix A](#).

## VI. CONCLUSION

Our paper examines whether voluntary filers of Form 990 are rewarded through higher donations, government grants, and total contributions. We find both donations and government grants to be positively correlated with voluntary 990 filers when we measure voluntary filers over one year. Our results hold for donations but not for government grants when a voluntary 990 filer is measured over two consecutive years. Additionally, we compare voluntary 990 filers with charities opting to file a simpler 990EZ and find voluntary 990 filers have greater total contributions whether voluntary filing is measured over one or two years. All taken together, our study provides evidence that filing a 990 voluntarily has a positive effect on donations, government grants, and especially total contributions.

## REFERENCES

- Allen, A. C., and B. P. McAllister. 2019. How private foundation sophistication affects capital campaign grant decisions. *Journal of Governmental & Nonprofit Accounting* 8 (1): 1–20. <https://doi.org/10.2308/ogna-52553>
- Andreoni, J. 1990. Impure altruism and donations to public goods: A theory of warm-glow giving. *The Economic Journal* 100 (401): 464–477. <https://doi.org/10.2307/2234133>
- Behn, B. K., D. D. DeVries, and J. Lin. 2010. The determinants of transparency in nonprofit organizations: An explanatory study. *Advances in Accounting* 26 (1): 6–12. <https://doi.org/10.1016/j.adiac.2009.12.001>
- Blouin, M. C., R. L. Lee, and G. S. Erickson. 2018. The impact of online financial disclosure and donations in nonprofits. *Journal of Nonprofit & Public Sector Marketing* 30 (3): 251–266. <https://doi.org/10.1080/10495142.2018.1452819>
- Boland, C. M., E. E. Harris, C. M. Petrovits, and M. H. Yetman. 2020. Controlling for corporate governance in nonprofit research. *Journal of Governmental & Nonprofit Accounting* 9 (1): 1–44. <https://doi.org/10.2308/JOGNA-17-017>
- Brooks, A. C. 2000. Public subsidies and charitable giving: Crowding out, crowding in, or both? *Journal of Policy Analysis and Management* 19 (3): 451–464. [https://doi.org/10.1002/1520-6688\(200022\)19:3%3C451::AID-PAM5%3E3.0.CO;2-E](https://doi.org/10.1002/1520-6688(200022)19:3%3C451::AID-PAM5%3E3.0.CO;2-E)
- Burks, J. J. 2018. Reactions of nonprofit monitors to financial reporting problems. *Journal of Financial Reporting* 3 (1): 47–71. <https://doi.org/10.2308/jfir-52292>

- Callen, J. L., A. Klein, and D. Tinkelman. 2003. Board composition, committees, and organizational efficiency: The case of nonprofits. *Nonprofit and Voluntary Sector Quarterly* 32 (4): 493–520. <https://doi.org/10.1177/0899764003257462>
- Desai, M. A., and R. J. Yetman. 2005. Constraining managers without owners: Governance of the not-for-profit enterprise. National Bureau of Economic Research (NBER Working paper 11140). <https://www.nber.org/papers/w11140>
- Desai, M. A., and R. J. Yetman. 2015. Constraining managers without owners: Governance of the not-for-profit enterprise. *Journal of Governmental & Nonprofit Accounting* 4 (1): 53–72. <https://doi.org/10.2308/ogna-51138>
- Feng, N. C., and J. S. Greenlee. 2023. Empirical archival data sources and data issues for nonprofit accounting research. In *Research Handbook on Nonprofit Accounting*, 339–359. Cheltenham, U.K.: Edward Elgar Publishing. <https://doi.org/10.4337/9781800888289.00028>
- Feng, N. C., Q. Ling, D. G. Neely, and A. A. Roberts. 2014. Using archival data sources to conduct nonprofit accounting research. *Journal of Public Budgeting, Accounting & Financial Management* 26 (3): 458–493. <https://doi.org/10.1108/JPBAFM-26-03-2014-B004>
- Giving USA. 2022. Giving USA: Total U.S. charitable giving remained strong in 2021, reaching \$484.85 billion. [https://philanthropy.iupui.edu/news-events/news/\\_news/2022/giving-usa-total-us-charitable-giving-remained-strong-in-2021-reaching-48485-billion.html](https://philanthropy.iupui.edu/news-events/news/_news/2022/giving-usa-total-us-charitable-giving-remained-strong-in-2021-reaching-48485-billion.html)
- Gordon, T. P., and S. B. Khumawala. 1999. The demand for nonprofit financial statements: A model for individual giving. *Journal of Accounting Literature* 18: 31–56.
- Gordon, T. P., C. L. Knock, and D. G. Neely. 2009. The role of rating agencies in the market for charitable contributions: An empirical test. *Journal of Accounting and Public Policy* 28 (6): 469–484. <https://doi.org/10.1016/j.jaccpubpol.2009.08.001>
- Hainmueller, J. 2012. Entropy balancing for causal effects: A multivariate reweighting method to produce balanced samples in observational studies. *Political Analysis* 20 (1): 25–46. <https://doi.org/10.1093/pan/mpr025>
- Harris, E., C. M. Petrovits, and M. H. Yetman. 2015. The effect of nonprofit governance on donations: Evidence from the revised form 990. *The Accounting Review* 90 (2): 579–610. <https://doi.org/10.2308/accr-50874>
- Harris, E. E., and D. G. Neely. 2016. Multiple information signals in the market for charitable donations. *Contemporary Accounting Research* 33 (3): 989–1012. <https://doi.org/10.1111/1911-3846.12175>
- Hedge, K. K., E. Nico, and L. Fox. 2009. Advancing good governance: How grantmakers invest in the governance of nonprofit organizations. (March 1). <https://search.issuelab.org/resource/advancing-good-governance-how-grantmakers-invest-in-the-governance-of-nonprofit-organizations.html>
- Jones, C., and A. A. Roberts. 2006. Management of financial information in charitable organizations: The case of joint cost allocations. *The Accounting Review* 81 (1): 159–178. <https://doi.org/10.2308/accr.2006.81.1.159>
- Khanna, J., and T. Sandler. 2000. Partners in giving: The crowding-in effects of UK government grants. *European Economic Review* 44 (8): 1543–1556. [https://doi.org/10.1016/S0014-2921\(99\)00007-0](https://doi.org/10.1016/S0014-2921(99)00007-0)
- Kitching, K. 2009. Audit value and charitable organizations. *Journal of Accounting and Public Policy* 28 (6): 510–524. <https://doi.org/10.1016/j.jaccpubpol.2009.08.005>
- Larcker, D. F., and T. O. Rusticus. 2010. On the use of instrumental variables in accounting research. *Journal of Accounting and Economics* 49 (3): 186–205. <https://doi.org/10.1016/j.jacceco.2009.11.004>
- McAllister, B. P., T. R. Waymire, and T. Z. Webb. 2023. Peripheral benefit of single audit monitoring in attracting charitable donations. *Accounting Horizons* 1–25. <https://doi.org/10.2308/HORIZONS-2020-060>
- Okten, C., and B. Weisbrod. 2000. Determinants of donations in private nonprofit markets. *Journal of Public Economics* 75 (2): 255–272. [https://doi.org/10.1016/S0047-2727\(99\)00066-3](https://doi.org/10.1016/S0047-2727(99)00066-3)
- Parsons, L. M. 2003. Is accounting information from nonprofit organizations useful to donors? A review of charitable giving and value-relevance. *Journal of Accounting Literature* 22: 104–129. <https://www.proquest.com/openview/edbaef5a7619d22a7e98b833c98e7291/1?cbl=31366&pq-origsite=gscholar&parentSessionId=Y4PYey%2F9bPPuMIH%2F2kflAUSN%2ByTBKcG2d7aas9T1eGM%3D>
- Parsons, L. M. 2007. The impact of financial information and voluntary disclosures on contributions to not-for-profit organizations. *Behavioral Research in Accounting* 19 (1): 179–196. <https://doi.org/10.2308/bria.2007.19.1.179>
- Petrovits, C., C. Shakespeare, and A. Shih. 2011. The causes and consequences of internal control problems in nonprofit organizations. *The Accounting Review* 86 (1): 325–357. <https://doi.org/10.2308/accr.00000012>
- Posnett, J., and T. Sandler. 1989. Demand for charity donations in private non-profit markets: The case of the U.K. *Journal of Public Economics* 40 (2): 187–200. [https://doi.org/10.1016/0047-2727\(89\)90002-9](https://doi.org/10.1016/0047-2727(89)90002-9)
- Ross, S. A. 1977. The determination of financial structure: The incentive-signaling approach. *The Bell Journal of Economics* 8 (1): 23–40. <https://doi.org/10.2307/3003485>
- Saxton, G. D., D. G. Neely, and C. Guo. 2014. Web disclosure and the market for charitable contributions. *Journal of Accounting and Public Policy* 33 (2): 127–144. <https://doi.org/10.1016/j.jaccpubpol.2013.12.003>

- Smith, T. M. 2007. The impact of government funding on private contributions to nonprofit performing arts organizations. *Annals of Public and Cooperative Economics* 78 (1): 137–160. <https://doi.org/10.1111/j.1467-8292.2007.00329.x>
- 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. <https://doi.org/10.1177/0148558X9801300401>
- 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' fundraising strategies. *Journal of Public Economics* 88 (9–10): 2181–2192. <https://doi.org/10.1016/j.jpubeco.2003.12.003>
- Tinkelman, D., and K. Mankaney. 2007. When is administrative efficiency associated with charitable donations? *Nonprofit and Voluntary Sector Quarterly* 36 (1): 41–64. <https://doi.org/10.1177/0899764006293176>
- Weisbrod, B. A., and N. D. Dominguez. 1986. Demand for collective goods in private nonprofit markets: Can fundraising expenditures help overcome free-rider behavior? *Journal of Public Economics* 30 (1): 83–96. [https://doi.org/10.1016/0047-2727\(86\)90078-2](https://doi.org/10.1016/0047-2727(86)90078-2)
- Yetman, M. H., and R. J. Yetman. 2012. The effects of governance on the accuracy of charitable expenses reported by nonprofit organizations. *Contemporary Accounting Research* 29 (3): 738–767. <https://doi.org/10.1111/j.1911-3846.2011.01121.x>
- Yetman, M. H., and R. J. Yetman. 2013. Do donors discount low-quality accounting information? *The Accounting Review* 88 (3): 1041–1067. <https://doi.org/10.2308/accr-50367>

## APPENDIX A

### Variable Definitions

Variable	Description
<b>Main Test 1</b>	
<i>Donations</i>	Logarithm of 1 plus total contributions less federated campaigns less government grants from Part VIII on Form 990.
<i>Government Grants</i>	Logarithm of 1 plus government grants from Part VIII on Form 990.
<i>Total Contributions</i>	Logarithm of 1 plus contributions, gifts, grants, and similar amounts from Part VIII on Form 990; logarithm of 1 plus contributions, gifts, grants, and similar amounts from Part I on Form 990-EZ.
<i>Voluntary Filer</i>	Indicator variable with a value of 1 for organizations that choose to file Form 990 voluntarily even when they are eligible for filing Form 990-EZ based on their gross receipts or total assets; 0 otherwise. For the Year 2009, nonprofits with gross receipts under \$500,000 and total assets under \$1,250,000 can file Form 990-EZ. For the period after 2009, nonprofits with gross receipts under \$200,000 and total assets under \$500,000 can file Form 990-EZ.
<i>Voluntary Filer_Consecutive</i>	Indicator variable with a value of 1 for organizations that choose to file Form 990 voluntarily even when they are eligible for filing Form 990-EZ in both years $t-1$ and $t-2$ .
<i>Restricted Donations</i>	Net assets with donor restrictions scaled by the sum of net assets with and without donor restrictions from Part X on Form 990.
<i>Program Service Revenue</i>	Logarithm of 1 plus program service revenue from Part VIII on Form 990; logarithm of 1 plus program service revenue from Part I on Form 990-EZ.
<i>Other Revenue</i>	Logarithm of 1 plus other revenue from Part VIII on Form 990; logarithm of 1 plus other revenue from Part I on Form 990-EZ.
<i>Program Ratio</i>	Program expenses scaled by total expenses from Part IX on Form 990.

(continued on next page)

## APPENDIX A (continued)

Variable	Description
<i>Fundraising Expense</i>	Logarithm of 1 plus fundraising expenses from Part IX on Form 990; logarithm of 1 plus direct expenses from gaming and fundraising events in Part I on Form 990-EZ.
<i>Governance Index<sup>5</sup></i>	The sum of five binary governance indicators with a value ranging from 0 to 5. Audit Comm = 1 if the nonprofit has an audit committee, or = 0 if not; Independent Board = 1 if the nonprofit has at least five voting board members and the majority are independent, or = 0 if not; CEO salary = 1 if the nonprofit has a CEO salary review policy, or = 0 if not; No Outsource = 1 if no management function is delegated to an outside entity, or = 0 if it is delegated; Own Web = 1 if the nonprofit provides applicable forms on its website, or = 0 if not.
<i>Size</i>	Logarithm of 1 plus total assets from Part X on Form 990; logarithm of 1 plus total assets from Part II on Form 990-EZ.
<i>Age</i>	Number of years since the organization was formed.
<b>Main Test 2</b>	
<i>Total Contributions</i>	Logarithm of 1 plus contributions, gifts, grants, and similar amounts from Part I on Form 990-EZ.
<i>Program Service Revenue</i>	Logarithm of 1 plus program service revenue from Part I on Form 990-EZ.
<i>Other Revenue</i>	Logarithm of 1 plus other revenue from Part I on Form 990-EZ.
<i>Size</i>	Logarithm of 1 plus total assets from Part II on Form 990-EZ.
<b>2SLS Test</b>	
<i>DebtRatio</i>	The ratio of total liabilities to total assets.
<i>ContRatio</i>	The ratio of contribution to total revenues.
<i>CompRatio</i>	The ratio of total compensation of officers and directors to total revenues.
<i>Education</i>	Indicator variable with a value of 1 if the organization is classified as an education group based on the NTEE code.
<i>High Reporting Index</i>	Based on <a href="#">Desai and Yetman (2005, 2015)</a> , is an indicator variable and set to 1 if the state has a reporting index score equal to or greater than the median score of all 50 states plus the District of Columbia and is set to 0 if it has a score below the median. The reporting index score is the sum of eight binary disclosure components: (1) Registration Required, (2) Registration Renewal, (3) Financial Statement Audit, (4) Financial Statements Included, (5) Bylaws Included, (6) Articles of Incorporation Included, (7) Tax Exempt Determination Letter Included, and (8) Other State-Specific Information Included.