**THE CONTRIBUTIONS MARKETPLACE REVISITED.**

*The impact of rating agencies on contributions to nonprofits.*

Master thesis

Frank Garlich

Admn. No. 185124

University of Twente

School of Management and Governance

Business Administration

Finance track

1st supervisor: Xiaohong Huang

2nd supervisor: Raja Singaram

Enschede, 1st of July 2014.

**ABSTRACT**

This thesis set out to explore the effects of two ratings published by rating agency *Charity Navigator* on future donations to nonprofits, using multiple linear regression models. The dataset that has been used contains the most recent data used to date, netting a total of 1500 observations up to 2013 retrieved directly from *Charity Navigator*.

Results show that the new Accountability & Transparency metric as published by *Charity Navigator* has no significant impact on future donations from individuals. The websites' traditional metric - financial efficiency – does have a significant impact on future donations, with an increase of one star being met with an increase in donations between 2.6% and 7% on average. The thesis also highlights problems when trying to apply findings to, or model, smaller nonprofits.

**Table of Contents**

## 1. Introduction

*Text 2HELP*, these two self-explanatory words were the name of an American Red Cross program in 2008.[1] Giving to a nonprofit has arguably never been easier, be it online, or using your mobile phone. This is not surprising as charitable giving is simply big business: Giving USA (2012) estimates that total private domestic donations add up to 2% of the gross domestic product of the United States (being $298 billion in 2011).[2]

One thing is certain when it comes to the world of these nonprofits: there are no lack of options when deciding to donate to a nonprofit. Recent estimates put the number of nonprofits in the United States just above 1 million, and this number is not even the highest it has ever been.[3] But what do people do with all these options, what do they value? Why do people chose to donate to X, but not to Y? Models aiming to explain the outcome of this process are often referred to as *economic models of giving*.

This thesis is about a small part of this large and complicated human decision-making process; it analyzes the impact of two metrics created by the online nonprofit rating agency *Charity Navigator* on future donations. This leads to the following research question:

*"What is the impact of financial efficiency- and accountability & transparency ratings published by Charity Navigator on future donations to American nonprofits, made by the general public?"*

The impact of Charity Navigator's financial efficiency rating on private (non-government) donations has been studied before by Gordon, Knock & Neely (2009). They found the impact to be significant, however Charity Navigator now provides more information than before (e.g. the accountability & transparency rating), possibly lessening the impact of the original financial efficiency rating. Additionally, various studies have argued that accountability & transparency is also valued by donors, however nobody has evaluated the impact of this metric from a rating agency. This thesis aims to fill this gap.

This thesis is structured as follows: the literature review will begin with explaining the definition of a nonprofit and its common financials, followed by the theoretical framework and empirical results from various studies. The second part of this thesis will contain an empirical analysis studying the effects of the financial rating, as well as the effect of a nonprofits' accountability & transparency rating, on future donations from individuals.

[1] For more details, see http://www.mobilemarketer.com/cms/news/messaging/1648.html
[2] For more details, see Giving USA 2012. The Annual Report on Philanthropy for the Year 2011.
[3] For more details, see http://www.thenonprofittimes.com/news-articles/number-of-nonprofits-down-filing-with-irs-up/

## 2. Literature Review

The literature review is structured as follows: I begin with explaining the basic financials of a nonprofit, and the definition of a nonprofit. The second subchapter will cover the theoretical basis of this thesis, followed by the last chapter that summarizing relevant findings of previous studies.

### 2.1 Financials of a nonprofit

As this thesis surrounds many financial variables of nonprofits, it's important to first establish a common understanding of some general principles. The definition on a nonprofit is rather wide in scope: it simply means an organization that is not designed to make a profit. In the United States a nonprofit typically means an organization classified as a 501(c) by the Internal Revenue Service (IRS). This classification contains 29 sub codes, with the most commonly used one being 501(c)(3). This classification belongs to nonprofits that are involved in religion, education, science, child- and animal-protection, etc., leading many people to refer to this group as *charities*.[4] Due to this broad scope the objectives of 501(c)(3) organizations differ wildly, the only thing they have in common is that shareholders – if any – are not allowed to receive any earnings. The important perk of being a 501(c)(3) organization is that usually people can deduct donations from their federal income tax, and the organizations themselves are exempt from some taxes as well.[5]

Like most published papers surrounding nonprofits, this thesis limits itself to organizations classified as a 501(c)(3). The cornerstone of many analysis surrounding nonprofits often lies in the IRS Form 990: a tax-return form that has to be filed by organizations classified as a 501(c)(3), which are open to public inspection.

The Form 990 itself is rather extensive and has recently been restructured: in 2008 the IRS conducted a major overhaul; adding a governance questionnaire among many other things.[6] One relevant change is that the IRS quit using the terms *direct* and *indirect support*, which were used a lot in published papers to differentiate between the types of revenues. Table 1 shows a basic outline of the expenses and revenues of a typical nonprofit.

**Table 1**

Revenues & Expenses on the IRS Form 990

| Revenues | Expenses |
|---|---|
| *Direct support* | Program Service |
| Membership dues | Management and General |
| Fundraising | Fundraising |
| Other contributions | |
| *Indirect Support* | |
| Federated campaigns | |
| Contributions (related organisations) | |
| *Other* | |
| Government grants | |
| Program Service Revenue | |
| Gaming, rents, investments etc. | |

*Direct support*: the sum of membership dues, fundraising and other contributions (often individual donations), is the most commonly studied dependent variable. Authors aim to find variables influencing the next-year direct support, for example the amount of fundraising expenses or the relative amount of management & general expenses. Nevertheless, depending on the type of nonprofit other revenue streams can be important too. Some nonprofits have the ability to attract more grants

[4] For more details, see http://www.irs.gov/Charities-&-Non-Profits/Charitable-Organizations/Exemption-Requirements-Section-501(c)(3)-Organizations

[5] For more details, see the U.S. Code, 26, § 170.

[6] For more details, see http://www.irs.gov/pub/irs-tege/summary_form_990_redesign_process.pdf

than others (e.g. universities), and some will be able to attract more revenue from related organizations (e.g. foundations). Another major revenue stream is the Program Service Revenue. This can be a lot of things; such as tuition for college students and admission to a museum.[7]

The expenses side consists of three types. Program Service Expenses are the sum of expenses of what a nonprofit is actually doing (the cause). Management & General, often referred to as administrative expenses and expressed in a percentage of total expenses, is the part of the overhead. The other type of overhead are the fundraising expenses.

### 2.2 Theory behind Economic Models of Giving

Models that study factors impacting donations are often referred to as *economic models of giving*, a term that can be traced back to the early nineties. There is no exact definition of what *economic models of giving* are, however the underlying question of most of these models is the same: what makes people (or institutions) donate to a specific nonprofit? Findings of these models can typically be applied by nonprofit managers when trying to enhance their revenue. Due to the broad scope of these models there is no common theory, there are however common traits, assumptions and variables.

It is first and foremost important to consider the large amount of people that donate, estimated at 83% of all American adults in 2013.[8] Everyone will have their own decision making process when selecting a nonprofit to donate to. This has spawned much exploratory research, in the form of surveys and interviews regarding motivation, as well as the aforementioned *economic models of giving*. A common trait for these models is that they apply lagged variables where for example the impact of financial efficiency in the year 2010 is tested on the results (direct support, grants, etc.) of 2011. The dependent variable of these models is usually the amount of *direct support* (donations from individuals).

Originally scholars solely focused on the impact of efficiency metrics (e.g. Weisbrod & Dominguez, 1986). Throughout the years many variables have been identified that show a significant impact on future donations, be it from individuals, the government or foundations. As this thesis sets out to investigate the impact of financial efficiency ratings, and accountability & transparency ratings as published by *Charity Navigator,* the theoretical framework is limited solely to these two items.

As said, traditionally the focus of scholars has been on financial efficiency. The reasoning behind this is simple: it is relatively easy for anyone to compare two financial statements, and this measure of performance is one of the few objective ones and therefore likely to be used. A nonprofit that spends the highest percentage of total expenses on their cause, is the most financially efficient. However in reality it is said to be far from this simple. A qualitative study by Cunningham & Ricks (2004) provides insight on this issue. The wealthy philanthropists they interviewed said that they don't value metrics highly, and in fact did not even believe there was a real difference in performance of nonprofits. Moreover, they stated that they simply don't have time to evaluate performance and that financial metrics should not be a goal for nonprofits.

They were not alone on this: a study done by Iwaarden, Wiele, Williams & Moxham (2009) asked Dutch people what they valued most in their selection process. They found that overhead is not seen as a very important criterion, outscored by the activities of a nonprofit, as well as their reporting, projects and effectiveness. They were not the only one to find that transparency is valued. A survey by *Media Trust* in 2001 found that British citizens also wanted more insight in nonprofit performance, be it financial or otherwise, and would appreciate league tables ranking the nonprofits.[9] Another survey

[7] For more details, see http://www.guidestar.org/rxa/news/articles/2001-older/understanding-the-irs-form-990.aspx
[8] For more details, see http://www.gallup.com/poll/166250/americans-practice-charitable-giving-volunteerism.aspx
[9] For more details, see http://www.theguardian.com/society/2001/oct/10/voluntarysector.guardiansocietysupplement

conducted by the federated campaign *United Way* also found that a lack of transparency is a major reason for distrust among donors.[10]

But it's important to not underestimate the value of efficiency ratios as many publications have found a significant impact of these ratios on donations. An experiment conducted by Bowman (2006) shows that donations are influenced by changes in overhead, however also finds that the impact is limited and easily exaggerated. On the receiving end, the nonprofits themselves seem to be fairly convinced of the importance of these ratios. They're going as far as underfunding their overhead, with one of the main reasons cited being that there is external pressure to keep administrative costs low (Rooney & Frederick, 2007).

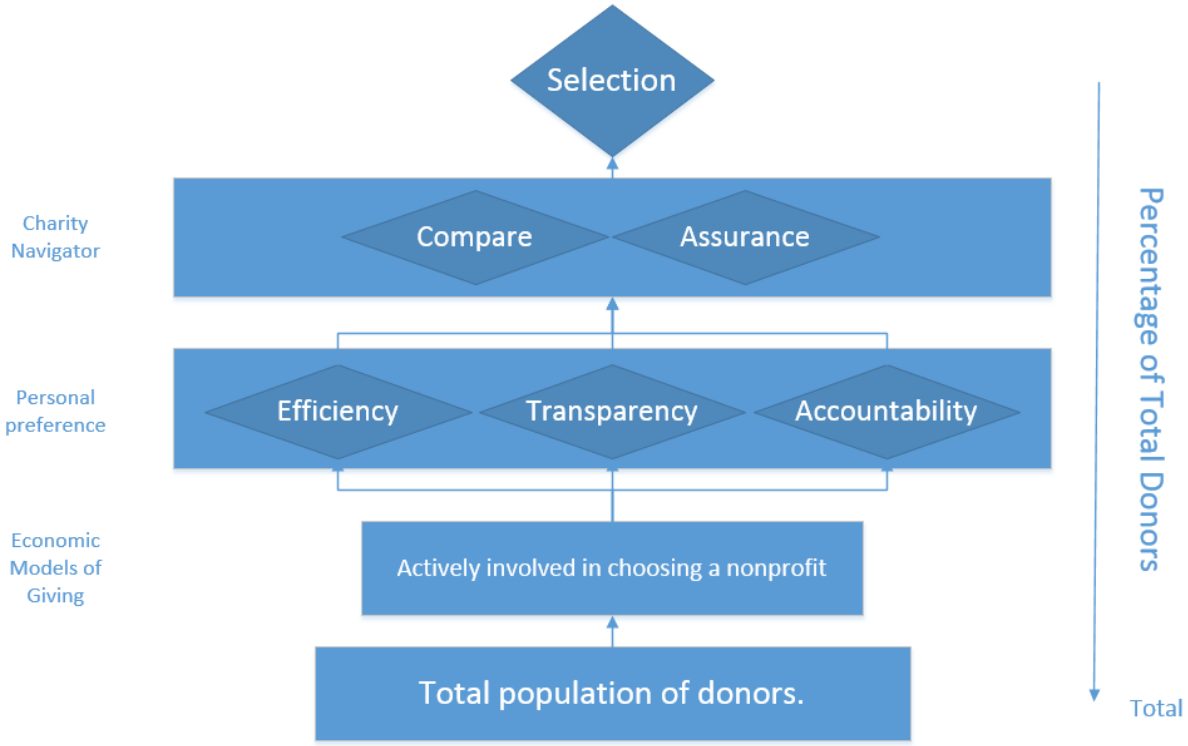
The reasoning behind the demand for transparency and some extend of financial efficiency probably partly lies in the bad memories people have from reading the news. Hardly a year goes by without another scandal involving nonprofits not doing what they're claiming to be doing, or what they're supposed to be doing. People now may want assurance that they're donating to the right nonprofit, be it in the form of a watchdog, a rating agency or their own inspection of public forms. If they care about one aspect in particular, they may even want to compare different nonprofits. This also signals the major assumption economic models of giving usually rely on: donors are actively involved choosing a nonprofit, weighing their options. Gordon & Khumawala (1999) state that this group likely consists of donors that are not a direct beneficiary of a specific nonprofit, as well as frequent donors. Another major assumption is that donors actually have up-to-date information (e.g. the Form 990) to base their decision on, otherwise the models are likely not to work (Bowman, 2006).

We learned from the interviews by Cunningham & Ricks (2004) that weighing options is far from easy. But now, 10 years later we can compare nonprofits with ease on some aspects using websites such as *Charity Navigator*. In the beginning they only offered financial efficiency ratings on a four-star scale, but have since expanded with accountability & transparency ratings as well as results reporting. Their goal is to provide visitors with objective information that will help them find the right nonprofit.

Combined this leads to the theoretical framework as shown below in figure 1. This thesis sets out to test whether or not this process actually has a significant influence on the end-result for a nonprofit: the total amount of direct support. While we can learn from various surveys that donors value transparency and efficiency to a certain extent, we do not know with certainty if they actually take it into account when donating.

[10] For more details, see http://businessjournaldaily.com/united-way-ceo-seeks-greater-accountability-nonprofits-2004-11-23

**Figure 1: Theoretical Framework**




### 2.3 Findings of published models

This subchapter will cover relevant findings of published models. It has been divided in three parts: financial efficiency, accountability & transparency, followed by rating agencies.

#### 2.3.1 Financial efficiency

Weisbrod & Dominguez (1986) laid the groundwork for what has become referred to as *economic models of giving* in the nonprofit sector; models predicting future donations to nonprofits using lagged (financial) variables. Their model found that the efficiency metric *PRICE* - the cost of purchasing one dollar worth of output - had a significant impact on public contributions, as well as fundraising expenses (*FR*) and the years the nonprofit has existed (*AGE*). Although later publications found AGE to have a negative impact (e.g. Jacobs & Marudas, 2009); showing that newer nonprofits raise (slightly) more when all other factors are controlled for. This may be because newer nonprofits are more likely to be in an expanding stage.

Since Weisbrod & Dominguez' paper many more organizational characteristics have been identified that show a significant impact on future donations. Posnett & Sandler (1989) were quick to expand the original model by introducing the efficiency metric *ADMIN*; the administrative expenditures in a given year, often expressed as a percentage of total expenses.

Using a large sample of 2,359 nonprofits Frumkin & Kim (2001) tested the effects of lagged program expenses (*PROG*), total revenue (*TOTREV*), fundraising expenses (*FR*), government support (*GOV*) and administrative efficiency (*ADMIN*) on direct contributions. They split their sample into ten groups using the nonprofits' National Taxonomy of Exempt Entities (NTEE) classifications. In their model fundraising expenses consistently impacted future donations, while administrative expenses did not.

A broad review of many studies focusing on financial efficiency has been made by Tinkelman & Mankaney (2006). They state that the impact of financial efficiency largely depends on the type of nonprofit. Nonprofits that are in the startup phase, or nonprofits that are simply not relying on donations, can make up a large amount of some datasets. Also the quality of information provided on the Form 990 is found to be lacking (Gordon, Khumawala, Kraut & Meade, 2007). These factors could all potentially lessen the impact of financial efficiency metrics in economic models. All factors combined this leads to the first hypothesis:

Hypothesis 1: *There is a positive relationship between a nonprofits' financial rating and the total amount of direct support in the following year.*

### 2.3.2 Accountability & Transparency

More recent publications surrounding *economic models of giving* shift the focus from organizational efficiency to organizational practices such as disclosure, CEO compensation and auditing. I search for these publications by using the 'cited by' function on Google Scholar on popular articles (e.g. Frumkin & Kim, 2001). Overall, the amount of research that has been conducted regarding the impact of accountability & transparency on financial performance is limited.

Saxton, Neely & Guo (2010) found a positive relationship between the Web-based disclosure of foundations and future donations, with the disclosure of financial information being valued more than performance information (i.e. an organizations' mission, plans and goals). Nearly the opposite was found in a survey study by Iwaarden, Wiele, Williams & Moxham (2009), where Dutch donors signaled a greater interest in a nonprofits' reporting, projects and effectiveness than its overhead.

Kitching (2009) investigated the effect of having a Big 5 auditor on future donations using a sample of 295 nonprofits. She finds that having a Big 5 auditor has a significant positive impact on donations, as well as a strengthening effect when a nonprofit reports good *PRICE* ratios, and is audited by a reputable firm. This suggests that donors find information audited by a big firm to be more informative.

A study by Zainon, Atan, Wah & Ahmad (2012) approached disclosure from another angle using content analysis. Their dependent variable is the amount of disclosure, which they tested using a dataset of 65 annual returns in Malaysia. They found that having an independent audit influences the amount of disclosure. The literature combined leads to the second hypothesis.

Hypothesis 2: *There is a positive relationship between a nonprofits' initial accountability & transparency rating and the total amount of direct support in the following year.*

### 2.3.3 Rating agencies

The first nonprofit rating agency was founded in 1918 with the goal to prevent abuse of war relief agencies (Gordon, Knock & Neely, 2009). Nowadays there are multiple rating agencies, such as the American Institute of Philanthropy, BBB Wise Giving Alliance and Charity Navigator (Lowell, Trelstad & Meehan, 2005). Charity Navigator started out online in 2001 by rating nonprofits on a four-star scale based on financial efficiency, and have since continuously expanded the number of covered nonprofits and metrics.

Up until now only Gordon, Knock & Neely (2009) have studied the impact of Charity Navigator's ratings on future donations. Their sample consists of 405 American nonprofits rated by Charity Navigator, with results up to June 2007. They found that an upgrade in (financial rating) stars is met with an increase in direct support (28% on average), consistently significant at the 1% level. At the time they constructed their dataset, the accountability & transparency metric was not yet implemented by Charity Navigator.

The final hypothesis regards the effects of the exposure of a rating agency onto a nonprofits' direct support. I hypothesize that the relative value of exposure is higher for smaller nonprofits, as Charity Navigator's website basically provides these relatively unknown nonprofits with free nationwide advertisement. Smaller nonprofits themselves are said to be frustrated that Charity Navigator refuses to rate them (when requirements are not met), stating potential donors ask them why they aren't listed.[11] And while not directly related; a study by Stuart, Hoang & Hybels (1999) found that young biotech companies benefit from having prominent associates (endorsements). A high rating from Charity Navigator can be seen as an endorsement from a prominent agency, providing assurance to potential donors.

The relative added value for larger nonprofits may be considerably less, simply because they have more means to inform potential donors about their cause (e.g. TV-advertising, tele-marketing), partly due to economies of scale effects. Therefore it's likely that the percentage of total donations that originates from Charity Navigator is larger for smaller nonprofits. In turn, this should make the effect of ratings (the coefficients) bigger for smaller nonprofits.

Hypothesis 3: *The effect of financial ratings, and the financial rating change, on a nonprofits' total amount of received individual contributions in the following year, is bigger for smaller nonprofits.*

[11] For more details, see http://seattletimes.com/html/localnews/2022261919_sarah15columnxml.html

## 3. Method

This chapter will cover the methodology and sampling. I begin by explaining the models that will be used and the reasoning behind the selected variables. The second subchapter will contain a brief discussion regarding statistical phenomena that are relevant when using ordinary least squares (OLS) regressions. The final subchapter will explain the sample size and procedure.

### 3.1 Models

The analysis in this paper is largely based on the work of Gordon, Knock & Neely (2009) who also conducted a study on the effects of Charity Navigator's ratings. To do this, they used the following regression model: [12]

$$\ln CONT_t = b_0 + b_1 FINRATECHG_{i,t} + b_2 FINRATE i_{,t-1} + b_3 \ln FR_{i,t-1} + b_4 \ln PRICE_{i,t-1} + b_5 \ln TOTASS_{i,t-1} + b_6 YEAR + b_7 NTEE\text{-}CC + \mu_i$$

The dependent variable is DsCON; the natural log (ln) of *direct support* in a given year. They measured Charity Navigator's impact using *FINRATE* (the financial stars in a given year) as well as *FINRATECHG* (the year-over-year change in stars). The methodology Charity Navigator uses to calculate the amount of stars can be seen in appendix A.

They also use some common variables, such as *FR*, the natural log of fundraising expenses; a well-established significant factor which can be compared to advertising expenses for a for-profit organization. *PRICE* is the efficiency metric measuring the percentage of expenses going to the program[13], and *TOTASS* are the total assets (a proxy of size). Like previous studies, industry is classified using National Taxonomy of Exempt Entities (*NTEE*) Core Codes (*CC*), which allocates each nonprofit into at least one of ten major groups. These groups can be found in table 2.[14]

**Table 2**

National Taxonomy of Exempt Entities Core Codes (NTEE-CC)

| | |
|---|---|
| 1. Arts, Culture and Humanities | 6. International, Foreign Affairs |
| 2. Education | 7. Public, Societal Benefit |
| 3. Environment & Animals | 8. Religion Related |
| 4. Health | 9. Mutual/Membership Benefit |
| 5. Human Services | 10. Unknown, Unclassified |

I made a small number of changes to the model used by Gordon, Knock & Neely (2009). First and foremost: Charity Navigator's new Accountability & Transparency metric has been added as *TRANSRATE*: the lagged amount of stars in a given year (see appendix A for Charity Navigator's methodology). The second change is the size proxy. Tinkelman (1998) was the first to introduce Total Assets as a size proxy. Not only is it found to be directly related to the amount of next years' donations, it's also found to be impacting the financial efficiency of a nonprofit (Kahler & Sargeant, 2002). A recent publication by Marudas & Jacobs (2008) offers two other options to proxy size: Total Revenue (*TOTREV*) and Program Service Revenue (*PREV*). *TOTREV* is found to be a more accurate proxy of a nonprofits' capital needs, and thus arguably size. In order to be consistent with the current literature I have chosen to use both size proxies (not simultaneously).

I've also added *Y*: a proxy of wealth introduced by Marudas (2004). This variable shows how long a nonprofit can survive without income (with removed fundraising expenses), or in other words; how long a nonprofit can survive through burning its net assets (assets – liabilities). Interpretations of this variable differ. For example the US watchdog agency AIP deducts points if a nonprofit can cover at least 5 years of expenses, claiming these nonprofits are 'least needy'.[15] Charity Navigator reasons the

[12] Some variable names were changed to be consistent with the rest of this thesis.
[13] PRICE is defined as Total Expenses / Program Expenses
[14] For more details, see http://nccs.urban.org/classification/NTEE.cfm
[15] For more details, see AIP's website http://www.charitywatch.org/criteria.html

other way around; they suggest that higher wealth is preferred as it gives the nonprofits more options to expand and improve their programs.[16] Plus there is likely to be a reason these nonprofits are wealthier to begin with. Regardless of the logic behind the variable, multiple studies have found it to be statistically significant in a negative way with donations, especially when the size proxy total assets is used (for example Marudas, Hahn & Jacobs, 2012). The variable assists the model in predicting the actual capital needs, especially when a nonprofit is very wealthy in terms of assets.

The two common efficiency metrics *ADMIN* (administrative expenses in terms of total expenses) and *PRICE* are added to serve as control variables. As this thesis sets out to test the impact of rating agencies themselves it's useful to control for some aspects the ratings aim to accomplish: measuring financial performance. If *FINRATE* and its change is significantly positive while *ADMIN* and/or *PRICE* is controlled for, as well as *Y*, one can state with reasonable certainty that there is an impact originating from Charity Navigator's ratings, and not just a group of people that use calculate their own efficiency ratios. An important side note is that *ADMIN* and *PRICE* are not both being used in the same regression, as Jacobs & Marudas (2009) suggested that this introduces perfect multicollinearity when the Fundraising Expenses (FR) are also present. This is the case because all three variables are (indirectly) derived from the total expenses.[17]

The two final control variables are year and *NTEE-CC*. Year is implemented to control for macro-economic changes and *NTEE-CC* to control for possible popularity changes in the different cause-types. This all leads to the following regression model:

$$\ln CONT_t = b_0 + b_1 FINRATE_{i,t-1} + b_2 FINRATECHG_{i,t} + b_3 TRANSRATE_{i,t-1} + b_4 \ln FR_{i,t-1} + b_5 \ln PRICE_{i,t-1} \text{ (or } b_6 \ln ADMIN_{i,t-1}) + b_7 \ln TOTASS_{i,t-1} \text{ (or } b_8 \ln TOTREV_{i,t-1}) + b_9 \ln Y_{i,t-1} + b_{10} YEAR + b_{11} NTEE\text{-}CC + \mu_i$$

With (expected sign based on previous literature)

| | |
|---|---|
| lnCONT | The natural log of direct contributions. |
| FINRATE (+) | The amount of Financial Rating stars. |
| FINRATECHG (+) | The change in Financial Rating stars between the current year and the previous year. |
| TRANSRATE (?) | The amount of Accountability & Transparency rating stars. [18] |
| lnFR (+) | The natural log of Fundraising expenses. |
| lnPRICE (-) | The natural log of Total Functional Expenses / Program Expenses. Lower indicates higher efficiency. |
| lnADMIN (-) | The natural log of Administrative Expenses / Total Functional Expenses. Lower indicates higher efficiency. |
| lnTOTASS (+) | The natural log of Total Assets. |
| lnTOTREV (+) | The natural log of (Primary Revenue + Contributions + Program Service Revenue + Membership dues + Other Revenue). |
| lnY (-) | The natural log of Net Assets / (Total Expenses – Fundraising Expenses). Higher indicates wealthier. |
| Dummy variables | |
| YEAR | The financial year of the observation. |
| NTEE-CC | The National Taxonomy of Exempt Entities Core Classification of a nonprofit. |

[16] For more details, see http://www.charitynavigator.org/index.cfm?bay=content.view&cpid=35

[17] For more details, see Jacobs & Marudas (2009), p. 51

[18] The code used to create the dataset ensures that the Accountability & Transparency rating was visible on Charity Navigator at least 9 months prior to the end of the financial year. This is assumed be sufficient lag.

In order to test hypothesis three: the impact of size on the effect of financial ratings, a few modifications to the model are required. I first create three groups loosely based on quartiles to ensure both the small and the large group are of sufficient size. The threshold for the small nonprofit group is set at $2.5M in total revenues, and the larger group starts at $15M in total revenues. The variable total revenues is recoded into three dummies (small, medium and large), allowing me to see the effects of variables on a specific size group. Two interaction terms will be placed in the model in order to test if there is a significant difference in the coefficients: the dummy of the large group, and the small group, both interacting with FINRATECHG (or FINRATE). This approach is similar to the one used by Gordon, Knock & Neely (2009). The model is as follows:

$\ln CONT_t = b_0 + b_1 FINRATE_{i,t-1} + b_2 FINRATECHG_{i,t} + b_2 FINRATECHG_{i,t} * b_3 SMALL_{i,t-1} + b_3 SMALL_{i,t-1} + b_2 FINRATECHG_{i,t} * b_4 LARGE_{i,t-1} + b_4 LARGE_{i,t-1} + b_5 \ln FR_{i,t-1} + b_6 \ln PRICE_{i,t-1}$ (or $b_7 \ln ADMIN_{i,t-1}$) + $b_8 \ln TOTASS_{i,t-1}$ (or $b_9 \ln TOTREV_{i,t-1}$) + $b_{10} \ln Y_{i,t-1} + b_{11} YEAR + b_{12} NTEE\text{-}CC + \mu_i$

Hypothesis three can be accepted if these interactions are found to be significant.

### 3.1.1 Coefficient interpretation

The models feature two types of independent variables, *level* (linear) and *log* (indicated with ln). The reported coefficients are to be interpreted differently, based on the type of variable. In the models used in this thesis the dependent variable is always logarithmic.

Log-level can be interpreted using two methods, the accurate method is shown in equation 1. For example, if β1 is 0.4, we expect Y to gain 49% if X increases by 1. The second method is to just simply multiply the beta by 100 in order to get the percentage increase for Y. While easier, this method becomes more inaccurate as the beta goes up.[19] The interpretation of log-log regressions is simple (equation 2); if X is changed by one percent, Y is expected to change by β1 percent.

Log-Level: $\%\Delta y = 100\ (e^{\beta 1} - 1)$ **(1)**

Log-Log: $\%\Delta y = \beta 1 \%\Delta x$ **(2)**

### 3.2 Statistical tests

I will run two tests on the models to ensure there are no complications that can occur when using ordinary least squares regressions. First I check for heteroskedasticity. Heteroskedasticity is the absence of homoskedasticity, which means that the variance is equal for all values of X. As a linear regression model assumes homoskedasticity and therefore it may give erroneous results if heteroskedasticity is present, such as an overestimation of the goodness-of-fit. I check for this using *HETTEST* in STATA, which is based on the commonly used Breusch-Pagan / Cook-Weisberg test.

The second test will check for multicollinearity. Multicollinearity occurs when two or more independent variables are highly correlated. Due to this the variables will behave erratically in the models when variables are added or dropped, as well as possibly influence the models explanatory power $R^2$ (Mela & Kopalle, 2002). As individual variables are the level of analysis in this study, it is important that there is no multicollinearity present. I check for this using variance inflation factors (*VIF*). This test gives outputs for each variable, and values over 5 signal a possible multicollinearity problem.

[19] For more details, see http://www.cazaar.com/ta/econ113/interpreting-beta

### 3.3 Sample

The sample used for the empirical analysis consists of a random selection (N=1000) of all nonprofits being rated by Charity Navigator in January of 2014 (N=7050). The original plan was to draw a sample of 10% of the population, which would have been comparable to other studies (e.g. Gordon, Knock & Neely, 2009). However it turned out a surprising number of cases ended up being rejected, therefore I increased the total number of cases to an arbitrary 1000. Due to the large amount of work involved in adding a single nonprofit, reaching 705 selected cases (10% of the population) ended up not being a viable option. This chapter covers the steps and challenges in the data collection process in a chronological way, as well as some important data characteristics.

Charity Navigator is an independent American nonprofit that rates a wide variety of nonprofits, but they also quite a few inclusion rules.[20] Nonprofits must have 501(c)(3) status, depend on donations from individual givers, file the full form 990, have over one million dollars in revenue and private foundations (e.g. the Bill & Melinda Gates Foundation) are excluded. Nonprofits that report $0 in fundraising expenses are excluded as well, as Charity Navigator is only interested in *'charities that actively solicit donations from the general public'*. As some of their variables require multiple historical years to be computed, Charity Navigator requires a minimum amount of 7 Form 990s.

To start I compiled a list containing all nonprofits that are in Charity Navigator's database, which I subsequently randomized using Excel. Upon collecting the actual data it turned out 14 cases were not retrievable with the search process. Among these cases were some that merged into another organization, as well as some defunct ones. Another type of irretrievable nonprofits were those marked by the site with a *donor advisory*. Charity Navigator posts donor advisories when they identify serious problems with a nonprofit. These reasons can range anywhere from a lawsuit to inaccuracies in the Form 990.[21] When a donor advisory is placed the latest rating is no longer visible, which makes it impossible to measure the impact of ratings. Therefore all cases (a total of 15) that had a donor advisory were rejected.

While the models only require two consecutive years to function, I rejected nonprofits that were covered for less than 4 consecutive years. This is due to the large amount of work of adding a single nonprofit, while more years per nonprofit provided relatively little extra work. I do not believe that this choice introduces any material selection bias. In total this measure led to 254 exclusions.

The second most common exclusion reason is the lack of the full year financial results over 2012, which are required to calculate the effect of the Accountability & Transparency ratings that were first published in 2011. A small part of the nonprofits end the financial year before June; these were excluded in order to preserve enough lag for the Accountability & Transparency ratings to have a chance to reflect, which I set at 9 months for practical reasons.

In order for the models to function correctly the financial year-end could not change (e.g. from August to June), if this was changed I would've had to estimate the dependent variable for the twelve month period. This is rather difficult in practice, as for example Google Trends data suggests people are more interested in donating during the final months of the year. Seven nonprofits were dismissed for this reason.

[20] For more details, see http://www.charitynavigator.org/index.cfm?bay=content.view&cpid=32
[21] For more details, see http://www.charitynavigator.org/index.cfm?bay=content.view&cpid=1072

Charity Navigator provides datasheets for each nonprofit, containing all variables they used to compute the ratings in a given year (e.g. total assets, administrative expenses), as well as the ratings themselves. These were transformed to raw tables using Adobe Acrobat. For some reason the software occasionally failed to detect the table-structure of the datasheet. As it's very impractical to copy a datasheet manually, plus the chance on human error, 38 nonprofits were rejected after automatic conversion failed.

The dependent variable – direct support - used in this study is not available on the datasheets provided by Charity Navigator. These in turn had to be retrieved from the Foundation Center or GuideStar.[22] These two databases allow visitors to view recent Form 990s for free. The oldest records these two sites supply is FYE 2009, which resulted in all observations retrieved from Charity Navigator before 2009 being removed, as the dependent variable could be not added. Also some Form 990s could not be found, which led to five exclusions.

Some nonprofits claimed on their Form 990 that they receive all donations through federated campaigns such as the United Way. As federated campaigns are not part of the direct support these cases (4) were rejected. The final step was ensuring integrity of the computed variables. Fifteen nonprofits were dropped in this step as the amount of net assets was negative in consecutive years. A negative amount of net assets made it impossible for two independent variables to function as intended. The final exclusion was a sole case that got dismissed for severely distorting the behavior of one variable, this will be further explained in the univariate analysis. An overview of all exclusion reasons and frequencies are available in table 3.

**Table 3**

Sample selection procedure & results (chronological)

| | Number of nonprofits |
|---|---|
| Charity Navigator – Total nonprofits measured | 7050 |
| Random sample | 1000 |
| | |
| Exclusion reasons | |
| Retrieval errors | -14 |
| Donor Advisory | -15 |
| Insufficient (consecutive) years available | -254 |
| No FYE 2012 (evaluation) | -152 |
| FYE 2012 ended before June | -29 |
| Change in fiscal year end | -7 |
| Data conversion error(s) | -38 |
| Unable to obtain Form 990 | -5 |
| Claims to receive all donations through Federated Campaigns | -4 |
| Has negative net assets in consecutive years | -15 |
| Outlier issue | -1 |
| | |
| Final sample | 465 |

Notes: The table is shown in chronological order of the data collection process. Data collection was done during the period January-February 2014. Retrieval errors are caused by renamed, merged or defunct nonprofits. Donor advisories placed by Charity Navigator signal serious (legal) issues surrounding the nonprofit. Insufficient (consecutive) years available means there are less than four consecutive years available, with evaluations by Charity Navigator in separate years. No FYE 2012 means the full-year report of 2012 is not available, or has not yet been evaluated. Change in fiscal year ends are excluded due to fluctuations in donations caused by the one-time change in reporting month. Data conversion errors are from the Adobe Acrobat XI PDF-to-Excel conversion process. Being unable to obtain Form 990 means one or more forms were not retrievable from neither the Foundation Center nor GuideStar. One nonprofit got removed for distorting the data (outlier), more on this specific case in the univariate analysis.

[22] The websites of these institutions are http://www.foundationcenter.org and http://www.guidestar.org, respectively.

## 4. Analysis

The analysis chapter is structured as follows: I begin with the univariate analysis, which provides descriptives of the dataset. The second part will contain the multivariate analysis, which will test the hypotheses.

### 4.1 Univariate analysis

**Table 4**

Descriptive statistics and frequencies.

| Unique Nonprofits Frequency | | Year Frequency | |
|---|---|---|---|
| 1 Consecutive Year | 2 | FYE 2013 | 9 |
| 2 Consecutive Years | 8 | FYE 2012 | 465 |
| 3 Consecutive Years | 333 | FYE 2011 | 463 |
| 4 Consecutive Years | 122 | FYE 2010 | 452 |
| | | FYE 2009 | 115 |
| Total Unique Nonprofits | 465 | Total Years | 1500 |

| Charity Navigator Upgrade/Downgrade | Frequency |
|---|---|
| -3 Financial Rating Stars | 1 |
| -2 Financial Rating Stars | 20 |
| -1 Financial Rating Stars | 294 |
| No Change in Financial Rating Stars | 915 |
| +1 Financial Rating Stars | 243 |
| +2 Financial Rating Stars | 28 |
| +3 Financial Rating Stars | 2 |
| +4 Financial Rating Stars | 2 |

| Metric | Average | Median | Min | Max |
|---|---|---|---|---|
| Direct Support (*CON*) | $13.6M | $3.7M | $0.001M | $597M |
| Financial Rating Stars (*FINRATE*) | 2.91 | 3 | 0 | 4 |
| Accountability & Transparency (*TRANSRATE*) | 3.45 | 4 | 0 | 4 |
| Tax-Exempt Ruling Year (*AGE*) | 1974 | 1978 | 1926 | 2007 |
| Fundraising Expenses (*FR*) | $1.6M | $0.5M | $0.002M | $58M |
| *PRICE* | 1.29 | 1.22 | 1.00 | 12.91 |
| *ADMIN* | 0.10 | 0.09 | 0.00 | 0.41 |
| Total Revenue *(TOTREV)* | $37M | $6.3M | -$4M | $3500M |
| Total Assets (*TOTASS*) | $12M | $9.6M | $0.036M | $1600M |
| Wealth (*Y*) | 2.32 | 1.33 | 0.00 | 35 |

The descriptive statistics of the dataset are visible in table 4. The dataset ended up being very diverse in term of direct support, with the smallest nonprofit raising just $17,000 and the largest over half a billion. Looking at the ratings from Charity Navigator we see that nonprofits tend to score much higher on the Accountability & Transparency rating than the Financial Rating. In fact, the average Accountability & Transparency rating is 3.45, very close to the maximum possible (4), which is also the median. The financial rating itself shows a perhaps surprising number of movements, in roughly 30% of all evaluations by Charity Navigator the financial rating of a nonprofit ended up being either upgraded or downgraded.

One of the two efficiency metrics in the models is *PRICE*. The original descriptives (not printed here) show that one nonprofit managed to get a PRICE ratio of 220 due to spending an obscene amount of money on fundraising (up to 98% of total expenses), which they actually did repeatedly. Purchasing one dollar of cause-related output for this nonprofit would've cost $220 in 2008. While there is no reason to doubt their financial statements, the nonprofit in question was removed from the dataset as it was severely distorting the behavior of PRICE in the model. With ratios this high, PRICE effectively becomes a proxy of fundraising expenses (*FR*). This case is the only one that has been removed for outlier reasons. The other efficiency metric is *ADMIN*, this control variable shows no outliers. On average 10% of the total expenses is spent on administration and only 8% of the sample spent more than 20%.

The biggest nonprofit in the sample is the Massachusetts Institute of Technology (MIT) with nearly 16 billion dollars in assets (*TOTASS*). Not surprisingly, they also had the highest yearly revenue ($3.5B). Three observations actually showed negative total revenues, these were double checked. Why this happened is unclear as the IRS code used to describe the loss was 900099; a code that is to be used when all other activity-describing codes do not apply.

The nonprofits in the sample are found to be heavily relying on direct support, averaging 85.7% of the total revenues (median 97%). This is in line with expectations, as Charity Navigator aims to rate nonprofits that primarily rely on direct support.

Last but not least; the nonprofits are moderately wealthy. On average the nonprofits in the sample could survive 2.32 years without donations (*Y*). Some were not as fortunate; roughly 30% of the nonprofits wouldn't be able to survive a single year.

## 4.2 Multivariate analysis

**Table 5**

Cross-Sectional Results – Direct Support

$\ln CONT_t = b_0 + b_1 FINRATE_{i,t-1} + b_2 FINRATECHG_{i,t} + b_3 TRANSRATE_{i,t-1} + b_4 \ln FR_{i,t-1} + b_5 \ln PRICE_{i,t-1}$ (or $b_6 \ln ADMIN_{i,t-1}$) + $b_7 \ln TOTASS_{i,t-1}$ (or $b_8 \ln TOTREV_{i,t-1}$) + $b_9 \ln Y_{i,t-1} + b_{10} YEAR + b_{11} NTEE\text{-}CC + \mu_i$

| Dependent variable | $\ln CONT_t$ | $\ln CONT_t$ | $\ln CONT_t$ | $\ln CONT_t$ | $\ln CONT_t$ | $\ln CONT_t$ | $\ln CONT_t$ | $\ln CONT_t$ |
|---|---|---|---|---|---|---|---|---|
| (model number) | N = *1497* (1) | N = *468* (2) | N = *1497* (3) | N = *468* (4) | N = *1500* (5) | N = *468* (6) | N = *1500* (7) | N = *468* (8) |
| Size Control | **TOTREV** | **TOTREV** | **TOTREV** | **TOTREV** | **TOTASS** | **TOTASS** | **TOTASS** | **TOTASS** |
| FINRATE | 0.074 *** | 0.065 *** | 0.053 *** | 0.039 ** | 0.095 *** | 0.099 *** | 0.066 *** | 0.064 *** |
| *t* stat. | *6.55* | *3.19* | *5.51* | *2.06* | *8.35* | *4.53* | *6.55* | *3.15* |
| FINRATECHG | 0.047 *** | 0.026 | 0.035 *** | 0.012 | 0.068 *** | 0.054 ** | 0.046 *** | 0.033 |
| *t* stat. | *3.65* | *1.21* | *3.02* | *0.57* | *5.15* | *2.32* | *3.69* | *1.49* |
| TRANSRATE | | 0.005 | | 0.002 | | 0.002 | | -0.002 |
| *t* stat. | | *0.25* | | *0.11* | | *0.07* | | *-0.09* |
| FR | 0.232 *** | 0.204 *** | 0.258 *** | 0.198 *** | 0.395 *** | 0.370 *** | 0.363 *** | 0.332 *** |
| *t* stat. | *8.95* | *4.32* | *12.10* | *4.97* | *14.74* | *7.70* | *17.13* | *8.50* |
| PRICE | -0.011 | -0.061 | | | -0.284 * | -0.187 | | |
| *t* stat. | *-0.08* | *-0.25* | | | *-1.84* | *-0.67* | | |
| ADMIN | | | -0.259 *** | -0.236 *** | | | -0.354 *** | -0.317 *** |
| *t* stat. | | | *-9.97* | *-4.64* | | | *-13.10* | *-5.85* |
| TOTASS | | | | | 0.436 *** | 0.477 *** | 0.438 *** | 0.488 *** |
| *t* stat. | | | | | *16.99* | *10.43* | *20.56* | *12.59* |
| TOTREV | 0.652 *** | 0.696 *** | 0.597 *** | 0.679 *** | | | | |
| *t stat.* | *24.58* | *14.52* | *25.78* | *15.85* | | | | |
| Y | -0.001 | -0.005 | 0.025 * | 0.029 | -0.285 *** | -0.380 *** | -0.032 *** | -0.341 *** |
| *t* stat. | *-0.48* | *-0.17* | *1.65* | *1.07* | *-14.50* | *-8.38* | *-14.29* | *-8.26* |
| Year Control | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| NTEE-CC Control | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.75 | 0.76 | 0.77 | 0.77 | 0.71 | 0.72 | 0.74 | 0.74 |

* 0.1 level of significance (two-tailed), ** 0.05 level of significance (two-tailed), *** 0.01 level of significance (two-tailed). Grey box placed to enhance readability. N-count of even number models is considerably lower as these only include years where lagged Accountability & Transparency ratings were available (financial full year results of 2012-2013).

The results of the various regression models are visible in table 5. Model numbers 1 to 4 use total revenue as a size proxy, while 5 to 8 use the traditional total assets. Models with even numbers contain the Accountability & Transparency rating, which are only available for FYE 2012 and FYE 2013, thus resulting in a much lower amount of observations (*n=468*). All models were individually checked for heteroskedasticity using the Breusch-Pagan / Cook-Weisberg test. This test was not significant at the 10 percent level in any of the models, thus we can conclude that there is no sign of heteroskedasticity. Variance inflation factors (VIF) are used to check for multicollinearity. None of these values were above 5, therefore it is unlikely that there is excessive multicollinearity.

Across all models we see the Financial Rating from Charity Navigator (FINRATE) has a positive, significant impact. The change in this rating is measured with FINRATECHG and performs well in the large multi-year models, however with a much lower coefficient than Gordon, Knock & Neely (2009) found. An increase of one star would be met with an increase in donations between 2.6% and 7%, depending on the model that is used. In general the hypothesis 1 can be accepted: the data suggests that there is a significant positive relationship between a nonprofits' (change in) financial rating and its individual donations in the following year.

The new accountability & transparency rating (TRANSRATE) did not perform as well, and in fact had no significant impact at all. Multiple things can be the cause of this. Perhaps the sample size is too small, resulting in a lack of variance, as the majority of nonprofits in the sample had all four stars (median of 4). Another explanation is that people simply don't value this metric. Regardless of the reason, hypothesis two cannot be accepted: the accountability & transparency ratings have no significant impact on individual donations to a nonprofit in the following year.

A couple of interesting things can be seen with the behavior of the control variables. Most notably the efficiency metric PRICE did not do well in the model where total revenue (TOTREV) is used, consistent with the findings of Marudas & Jacobs (2008). The other efficiency metric, ADMIN, did perform as expected, just as the size proxies.

*Y* turned out to be only of importance when total assets is used, similar to the findings of Marudas & Jacobs (2008). Despite *Y* improving models that use total assets, models that use total revenue consistently have more explanatory power ($R^2$). The amount of fundraising expenses is shown to be a major factor: when the fundraising expense are increased by one percent, the total donations increase by 0.294% on average.

I also noticed some possibly interesting correlations of coefficients; further investigation shows that the financial rating is correlating in a significant positive way with total revenues (size), when all other factors are controlled for. This finding is similar to Kähler & Sargeant (2002), who found that larger nonprofits are more efficient. A likely underlying reason for this is that larger nonprofits enjoy economies of scale effects, while smaller ones do not. While it is unlikely Charity Navigator intended this, it does effectively mean that on average, larger nonprofits score higher on the financial rating scale.

### 4.2.1 Model sensitivity to nonprofit size

It's interesting to see if the effect of ratings differ between the sizes of nonprofits. This may be the case as the relative value of (positive) exposure is bigger for smaller nonprofits. Hypothesis 3 covers this topic: *The effect of financial ratings, and the financial rating change, on a nonprofits' total amount of received individual contributions in the following year, is bigger for smaller nonprofits.* As there are no established definitions for small, medium or large nonprofits arbitrary thresholds are set based on quartiles.

The results (see table 6) show that model 3 (from table 5) has relatively little accuracy for small nonprofits (<$2.5M in total revenues, $R^2$ 0.22) compared to large ones (>$15M in total revenues, $R^2$ 0.73). I hypothesize a possible reason for this is that small nonprofits simply just want to be small. A one-way ANOVA between the groups and the long-term program expenses growth partly confirms this; small nonprofits showed half the growth of the big group, with the middle group sitting in between. When comparing the small nonprofits to *AGE* (the years since a nonprofit received tax-exempt status), I find that the small-nonprofit group is actually slightly older than the medium group. This seems to confirm my suspicion that some small nonprofits may prefer to remain small. If this is in fact true, this certainly doesn't help with the accuracy of a linear model that doesn't account for this, and may be a reason to why the explanatory power is so low for the small nonprofits group.

I also ran model 5 (PRICE with total assets) on these groups (full results available upon request). The pattern is the same: the model has little explanatory power for smaller nonprofits. It turns out control variable PRICE is only significant for the large group (*t=-3.93*). As noted earlier in the univariate analysis, one nonprofit was removed due to being an extreme outlier for PRICE. The efficiency metric PRICE is heavily influenced by fundraising expenses (FR) and administrative expenses (ADMIN). It's well established that increasing fundraising expenses leads to more donations in the subsequent year, however especially for smaller nonprofits increasing these expenses will also lead to relatively lower administrative expenses and naturally a lower percentage of expenses will go towards the cause (PRICE).

This relationship manifests itself in two ways. If PRICE is placed in a model without FR it will act as a proxy of FR, and turn positive ($p<0.01$). More problematic is that the influence of FR on PRICE becomes bigger as nonprofit size declines. For small nonprofits FR explains roughly 30% of the variance in PRICE, while for the sample as a whole this is only 6.7% (*t=10.50*). This correlation shows that PRICE is not a good efficiency (control) variable when studying smaller nonprofits.

ADMIN performs better in this regard, showing no significant influence of FR (*t=-1.59*, $R^2$ 0.00). However ADMIN's coefficient was positive and significant for the smaller group, which doesn't make a lot of sense considering this implies inefficiency is somehow valued by donors. This further shows that applying traditional economic models of giving variables to smaller nonprofits is difficult.

Despite of the models' low explanatory power it appears to be advantageous for small nonprofits to score well on the financial rating from Charity Navigator, with FINRATE and FINRATECHG both being significant at the 1% level. A regression model with interaction variables is used to determine whether or not the difference in rating effects between the small and large group is significant (full results available upon request). It turns out it isn't for FINRATECHG, while in some models it was for FINRATE. All things considered there is not enough evidence to say that smaller nonprofits benefit more from ratings than larger ones, thus hypothesis three cannot be accepted. TRANSRATE: the Accountability & Transparency rating included in models four and eight (table 5), was again not significant in any of the models.

**Table 6**
Cross-Sectional Results – Size - Direct Support

$\ln CONT_t = b_0 + b_1 FINRATE_{i,t-1} + b_2 FINRATECHG_{i,t} + b_3 \ln FR_{i,t-1} + b_4 \ln ADMIN_{i,t-1} + b_5 \ln TOTREV_{i,t-1} + b_6 \ln Y_{i,t-1} + b_7 YEAR + b_8 NTEE\text{-}CC + \mu_i$

| Dependent variable | $\ln CONT_t$ | $\ln CONT_t$ | $\ln CONT_t$ |
|---|---|---|---|
| (Group) | N = *343* (Small) | N = *760* (Medium) | N = *392* (Large) |
| FINRATE | 0.058 *** | 0.042 *** | 0.115 *** |
| *t* stat. | *3.48* | *3.20* | *5.18* |
| FINRATECHG | 0.060 *** | 0.022 | 0.057 ** |
| *t* stat. | *3.05* | *1.35* | *2.23* |
| FR | 0.092 ** | 0.254 *** | 0.446 *** |
| *t* stat. | *2.17* | *8.03* | *10.98* |
| ADMIN | 0.169 ** | -0.217 *** | -0.412 *** |
| *t* stat. | *2.51* | *-5.53* | *-9.35* |
| TOTREV | 0.558 *** | 0.633 *** | 0.446 *** |
| *t* stat. | *6.40* | *11.25* | *9.32* |
| Y | 0.037 ** | 0.019 | 0.068 ** |
| *t* stat. | *1.14* | *0.85* | *2.06* |
| Year Control | Yes | Yes | Yes |
| NTEE-CC Control | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.22 | 0.38 | 0.73 |

Notes: Small nonprofits < $2.5M, medium nonprofits $2.5M > < $15M, large nonprofits $15M > in total revenue.

* 0.1 level of significance (two-tailed), ** 0.05 level of significance (two-tailed), *** 0.01 level of significance (two-tailed).

## 5. Research limitations

This research is subject to a couple of limitations. As written in the sample chapter, the dataset is constructed in a way to be suitable to investigate the effects of rating agency *Charity Navigator* on future donations made by the general public. While the models presented also show statistical evidence that direct efficiency metrics (ADMIN and PRICE) influence individual contributions, these variables are only added to serve as control variables for the financial ratings and should be treated as such. As the total nonprofit landscape is said to include more than 1 million nonprofits, this dataset is very unlikely to be representative for the entire nonprofit population.

The unlikeliness of this dataset being representative for the full nonprofit population is further strengthened by the listing procedure of Charity Navigator, as explained in the sample chapter. This effectively means that none of the findings should be applied to very small, new nonprofits, nonprofits without 501(c)(3) status, and certainly not to nonprofits that do not actively fundraise.

## 6. Conclusions

This thesis set out to explore the impact of two ratings published by Charity Navigator on future donations to nonprofits by individuals, better known as *direct support*. This has been accomplished using various regression models, applied to data up to 2013 from 465 different nonprofits (501(c)(3)).

The rating agency Charity Navigator rates a nonprofit using two separate metrics; Accountability & Transparency and Financial (efficiency). Consistent with the findings of Gordon, Knock & Neely (2009) the financial rating of a nonprofit is found to significantly impact future donations at the 1% level. A rating upgrade is typically met with an increase in donations between 2.7 and 7% (depending on the model). The effect of financial rating changes is found to be significant and roughly equal for both larger and smaller nonprofits. I also find that Charity Navigator's Financial rating-system arguably favors larger nonprofits: the amount of total revenues (a proxy of size) is positively related to the amount of financial-rating stars, when all other factors are controlled for. This may occur as larger nonprofits can enjoy economies of scale benefits.

This study finds no evidence that Charity Navigator's new metric Accountability & Transparency has a significant impact on future donations. This insignificance suggests that people don't value this metric when choosing a nonprofit to donate to. Another possible reason for this is the limited variance within the metric: the median amount of stars for the Accountability & Transparency metric is the maximum amount of stars possible (4).

As expected from findings of previous authors fundraising expenses have a big impact on the amount of individual donations in a given year, as well as the size control (be it total assets or total revenues). The size proxy total revenue is found to be more accurate than total assets, in line with the findings of Marudas & Jacobs (2008). Two well-known efficiency metrics act as control variables in this study; PRICE (the cost to purchase one dollar of cause-related output) and ADMIN (administrative expenses in terms of total expenses). An important finding with PRICE is that it is not only sensitive to the size proxy that's being used, as found by Marudas & Jacobs (2008), it also does not function correctly when applied to smaller nonprofits. The influence of fundraising expenses on PRICE increases as nonprofit size declines, up to the point where FR explains 30% of the variance in PRICE.

The models as a whole do not have a lot of explanatory power on future donations to smaller nonprofits. A probable explanation for this is that people aiming to donate to an efficient nonprofit are more likely to donate to a larger one to begin with, as larger nonprofits are significantly more efficient in the sample. Another possible explanation is that smaller nonprofits may simply prefer to remain small; showing lower long-term revenue growth despite being older and smaller to begin with. Due to these indications, users of economic models of giving should be cautious when applying findings of models to smaller nonprofits.

The implications of the models are clear, executives of nonprofits have a choice when it comes to managing their direct contributions revenue. On one hand, the opinion of a rating agency such as Charity Navigator seems to be valued by a significant group of donors. On the other hand; the effect of fundraising is very strong. It is up to managers to decide which route to take, or to meet in the middle.

## 7. Future research recommendations

Last year the IRS has begun digitizing all processed tax-exempt nonprofit (501(c)) tax returns and making select lines available in an easy-to-use, downloadable dataset.[23] These files for 2012 alone contain more than half a million filings. *ProPublica* was quick to build a web-interface to make all this data explorable, for free. Sadly the dataset the IRS created misses some critical values to study common variables in models of giving, however it certainly is a step in the right direction.

More exciting is that the Form 990s themselves are also free to download. These in turn are being digitized into a searchable format by open projects, such as *citizenaudit.org*. Cooperating with projects like these could easily result in models studying the impact of efficiency metrics on more than 100,000 recent observations. Soon there probably won't even be a need to draw a sample when attempting to study direct efficiency metrics.

Dependent variable wise it may be interesting to study the effects on separate NTEE-CC groups. So far most literature seems to somewhat assume findings are equal for all cause-types, but this is not necessarily the case in reality. New databases should make it easier to run a broad analysis, allowing scholars to see if there are actual differences between groups.

Last but not least; the models in this paper suggest that economic models of giving don't have much explanatory power for smaller nonprofits. While I provide two possible explanations, it will be interesting to see what the true cause of this is.

[23] The IRS datasets can be retrieved from http://www.irs.gov/uac/SOI-Tax-Stats-Annual-Extract-of-Tax-Exempt-Organization-Financial-Data

**References**


1. **Bowman, W. (2006).** Should donors care about overhead costs? Do they care?. *Nonprofit and Voluntary Sector Quarterly*, *35*(2), 288-310.

2. **Cunningham, K., & Ricks, M. (2004).** Why measure?. *Stanford Social Innovation Review*, *2*(1), 44-51.

3. **Frumkin, P., & Kim, M. T. (2001).** Strategic positioning and the financing of nonprofit organizations: Is efficiency rewarded in the contributions marketplace?. *Public Administration Review*, *61*(3), 266-275.

4. **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.

5. **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*, 27-49.

6. **Gordon, T. P., Knock, C. L., & Neely, D. G. (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.

7. **Jacobs, F. A., & Marudas, N. P. (2009).** The combined effect of donation price and administrative inefficiency on donations to US nonprofit organizations. *Financial Accountability & Management*, *25*(1), 33-53.

8. **Kähler, J., & Sargeant, A. (2002).** The size effect in the administration costs of charities. *European Accounting Review*, *11*(2), 215-243.

9. **Kitching, K. (2009).** Audit value and charitable organizations. *Journal of Accounting and Public Policy*, *28*(6), 510-524.

10. **Lowell, S., Trelstad, B., & Meehan, B. (2005).** The ratings game. *Stanford Social Innovation Review*, *3*, 38-45.

11. **Marudas, N. P. (2004).** Effects of Nonprofit Organization Wealth and Efficiency on Private Donations to Large Nonprofit Organizations. *Research in Government and Nonprofit Accounting*, *11*, 71-91

12. **Marudas, N. P., Hahn, T., & Fred, A. J. (2012).** An Improved Model of Donations to Nonprofit Organizations. *Proceedings of ASBBS*, *19*, 545-559.

13. **Marudas, N. P., & Jacobs, F. A. (2008).** Impart of organizational size measures on relationship between organization inefficiency and donations. *Journal of Management & Marketing Research*, *1*.

14. **Mela, C. F., & Kopalle, P. K. (2002).** The impact of collinearity on regression analysis: the asymmetric effect of negative and positive correlations. *Applied Economics*, *34*(6), 667-677.

15. **Posnett, J., & Sandler, T. (1989).** Demand for charity donations in private non-profit markets: The case of the UK. *Journal of Public economics*, *40*(2), 187-200.

16. **Rooney, P., & Frederick, H. K.** (2007). Paying for overhead: A study of the impact of foundations' overhead payment policies on educational and human service organizations. Retrieved on 6 July 2014, from http://community-wealth.org/sites/clone.community-wealth.org/files/downloads/paper-rooney-fredrick.pdf

17. **Saxton, G. D., Neely, D. G., & Guo, C. (2014).** Web disclosure and the market for charitable contributions. *Journal of Accounting and Public Policy*. *33*(2), 127-144.

18. **Stuart, T. E., Hoang, H., & Hybels, R. C. (1999).** Interorganizational endorsements and the performance of entrepreneurial ventures. *Administrative science quarterly*, *44*(2), 315-349.

19. **Tinkelman, D., & Mankaney, K. (2007).** When is administrative efficiency associated with charitable donations?. *Nonprofit and Voluntary Sector Quarterly*, *36*(1), 41-64.

20. **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).

21. **van Iwaarden, J., van der Wiele, T., Williams, R., & Moxham, C. (2009).** Charities: how important is performance to donors?. *International Journal of Quality & Reliability Management*, *26*(1), 5-22.

22. **Weisbrod, B. A., & Dominguez, N. D. (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.

## Appendix A

### Charity Navigator's Rating Tables.

| Financial Metrics | Description | Max Points. |
|---|---|---|
| Program Expenses | Percent of total functional expenses spent on programs & services. | 10 |
| Administrative Expenses | Percent of total functional expenses spent on management/general. | 10 |
| Fundraising Expenses | Percent of total functional expenses spent on fundraising. | 10 |
| Fundraising Efficiency | Amount a charity spends to raise $1. | 10 |
| Primary Revenue Growth | Measures growth of program expenses over the past 3-5 fiscal years. | 10 |
| Working Capital Ratio (in years) | Determines how long (in years) a charity could sustain its level of spending using only its net available assets. | 10 |
| | | 60 |

| Accountability & Transparency. Information from IRS Form 990. | Deductions from max score (70) |
|---|---|
| Less than 5 independent voting members of the board; or independent members do not constitute a voting majority. | 15 |
| Material diversion of assets within the last two years, without a satisfactory explanation | 15 |
| Material diversion of Assets within the last two years, with a satisfactory explanation | 7 |
| Audited financial statements are not prepared or reviewed by an independent accountant | 15 |
| Audited financial statements are prepared or reviewed by an independent accountant, but that accountant is not selected and overseen by an internal committee. | 7 |
| Loans to or from officers or other interested parties | 4 |
| Organization does not keep board meeting minutes | 4 |
| Forms 990 not distributed to the board before filing | 4 |
| No Conflict of Interest policy | 4 |
| No Whistleblower policy | 4 |
| No Records retention and destruction policy | 4 |
| Does not properly report CEO compensation on form 990 | 4 |
| Does not have a process for reviewing and updating CEO compensation | 4 |
| Fails to report board members and compensation fully on the form 990, or reports that board members are compensated for their participation | 4 |

| Accountability & Transparency. Information from the Charity's website. | |
|---|---|
| Does not publish board members on website | 4 |
| Does not publish senior staff on website | 3 |
| Does not publish latest Audited Financial Statements on website | 4 |
| Does not publish latest form 990 on website | 3 |
| No donor privacy policy | 4 |
| Opt-out donor privacy policy | 3 |

Score to stars conversion.

| Score | ≥ 60 | 50-60 | 40-50 | 25-40 | <25 |
|---|---|---|---|---|---|
| Stars | **** | *** | ** | * | 0 |

Notes: Adapted from Charity Navigator. Charity Navigator takes NTEE-CC type into account when evaluating the financial metrics.[24]

[24] For more information and NTEE-CC specific tables, see http://www.charitynavigator.org/index.cfm?bay=content.view&cpid=48