Do donors implicitly ignore fixed assets when assessing nonprofit organizational wealth?

Nicholas P. Marudas
Mercer University

ABSTRACT

One nonprofit "watchdog" agency publishes not-for-profit organizational (NFP) wealth defined as net assets / (all expenses – fundraising expenses). Developed theory holds that donations to an NFP are negatively related to NFP wealth because high levels of wealth signal that an NFP takes a long time to spend a donation. Some empirical evidence supports this theory. However, NFPs with capital intensive operations could spend donations immediately on needed fixed assets, but still have high levels of wealth because spending on fixed assets does not immediately reduce net assets. Donors might recognize this flaw in the measure of wealth and adjust wealth to exclude fixed assets. On the other hand, there also is empirical evidence of a direct relation between wealth and donations. This could be because donors might view high NFP wealth as providing a financial "cushion". However, fixed assets provide less financial "cushion" than other more liquid assets. Donors may recognize this and adjust wealth to exclude fixed assets. This paper examines whether donors implicitly adjust NFP wealth to eliminate the effect of fixed assets, by testing wealth and then testing modified wealth (by subtracting fixed assets from the numerator of wealth) in a comprehensive model of donations at the organizational level. Five types of NFPs are tested. Results suggest that donors to health, arts, philanthropic and human services NFPs do not adjust NFP wealth to eliminate the effect of fixed assets. A perverse result for education NFPs is found wherein donors seem to reward education NFPs with higher levels of fixed assets. However, this may be due to endogeneity between donations to education NFPs and wealth of such NFPs.

Keywords: nonprofits, donations, net assets, fixed assets

INTRODUCTION

The nonprofit organization "watchdog" agency Charity Watch (CW) publishes a measure of nonprofit organization (NPO) wealth. This measure is net assets / (all annual expenses – annual fundraising expenses) and is calculated from publicly-available accounting disclosures of NPOs. CW views high levels of NPO wealth negatively, stating that NPOs with high levels of wealth are not as "needy" as NPOs with low levels of wealth. Presumably, CW is implying that an NPO with high levels of wealth has used its donations to accumulate investments, cash and perhaps other assets, that do not currently further the NPO's objectives.

Marudas (2004) develops theory for why NPO wealth could negatively impact donations and tests wealth in a comprehensive model of donations at the organizational level, finding mixed results: for some types of NPOs, donations are negatively associated with NPO wealth, and for other types of NPOs, donations are positively associated with NPO wealth. His theory holds that donors prefer that an NPO spend donations to further the objectives of the NPO sooner rather than later, and the delay between when the NPO receives a donation and when it spends the donation to further its objectives is increasing in the level of the NPO's wealth. In other words, donors perceive an NPO with a high level of wealth to take longer to spend a donation to further its objectives than an NPO with a low level of wealth. However, this assertion is not necessarily true; NPOs could spend donations, immediately after receipt from donors, on fixed assets needed to further the NPO's program objectives. While this would be an immediate expenditure of donations, because fixed assets are included in the numerator of wealth, such expenditures would not decrease wealth, incorrectly implying to the donor that his or her donations have not been timely spent and that the NPO has "idle" donations. Clearly, NPOs with capital intensive operations would have to spend donations on fixed assets and such expenditures would not represent idle funds (or delays in using donor funds toward furthering the objectives of the NPO.)

It may be that donors recognize this flaw in the specification of wealth publicized by the watchdog agencies; i.e., that fixed assets should be excluded from net assets in the definition of wealth. Donors might recognize and implicitly adjust the calculation of wealth to eliminate the effect of fixed assets. This would manifest itself in the empirical results as a stronger negative association between donations and adjusted wealth (by subtracting fixed assets from the numerator in calculating wealth) than the negative association between donations and unadjusted wealth (in which fixed assets are included in the numerator in calculating wealth). If donors do not adjust the calculation of wealth for fixed assets, then NPOs with inherently capital-intensive operations would be penalized by donors by lower donations, ceteris paribus. However, if donors do adjust wealth for fixed assets, then NPOs with inherently capital-intensive program operations; i.e., those with high levels of fixed assets would not be penalized by donors through lower donations, ceteris paribus. Knowing whether donors implicitly ignore fixed assets would be useful information to managers of capital intensive NPOs; these managers may be less reluctant to increase fixed assets for sound operational reasons if they knew that donors do not penalize them for such increases.

On the other hand, if donors associate increased NPO wealth with sounder financial conditions, consistent with a direct relation of donations to NPO wealth, then donors may prefer donating to an NPO with higher rather than lower wealth. However, NPOs with high levels of wealth stemming from a high proportion of total assets in the form of fixed assets would, in fact, not be as financially sound, ceteris paribus, as NPOs with higher wealth stemming from a high proportion of total assets in the form of more liquid assets than fixed assets. Donors might recognize and implicitly adjust the calculation of wealth to eliminate the effect of fixed assets.

This would manifest itself in the empirical results as a stronger positive association between donations and adjusted wealth (by subtracting fixed assets from the numerator in calculating wealth) than the positive association between donations and unadjusted wealth (in which fixed assets are included in the numerator in calculating wealth).

This paper advances the literature on determinants of donations at the organizational level by testing whether donors implicitly eliminate fixed assets from the calculation of NPO wealth. A full model of organization-level donations is tested first with the standard specification of NPO wealth: net assets / (all annual expenses – annual fundraising expenses) and then tested with a modified specification of wealth that eliminates the effect of fixed assets on wealth: (net assets - fixed assets) / (all annual expenses – annual fundraising expenses). Data on NPO industry samples, such as arts, education, health, etc. are tested.

LITERATURE REVIEW

No prior studies examine whether donors take into account, implicitly or explicitly, the capital intensiveness of NPO operations in assessing the wealth of an NPO. Therefore, the current paper is considered to be a first attempt at addressing this issue. This section describes only the studies that include NPO wealth in models of organizational characteristics of NPOs that affect organization-level donations. See Jacobs and Marudas (2009) for a comprehensive review of all papers that investigate the factors affecting donations at the organizational level.

Marudas (2004) is the first paper to test the effect of NPO wealth on donations. He applies the Tinkelman (1998) log-log model, but with the addition of a measure of NPO wealth, to data on a large number of U.S. NPOs. He finds that organization wealth has a significantly negative effect on donations to arts, and philanthropic NPOs and a positive effect on education, health, and "other" NPO donations.

Marudas and Jacobs (2006) apply the Marudas (2004) model and an improved measure of wealth on data from the Nonprofit Times 100 for 2000-2001. They find that organization wealth has a significant negative effect on donations to the NPOs in their sample.

Jacobs and Marudas (2009) test a comprehensive model that includes all factors shown in the literature to affect donations and two accounting measures of inefficiency in the same model: administrative inefficiency (administrative expenses / total expenses) and price (total expenses / program expenses). They find wealth has no significant effect on donations to the full sample of NPOs. They do not report results for wealth for the industry samples they test.

EMPIRICAL SPECIFICATIONS

To test whether donors implicitly account for the capital intensiveness of NPO operations, the latest model of organization-level donations as a function of organizational characteristics is used (Jacobs and Marudas, 2009) [1].

[1]One modification to the Jacobs and Marudas (2009) model is made. All revenues, instead of all assets, are used as a size control. The reason for this is that choice of capitalization policies and depreciation and extent of fixed assets required for operations affect assets, whereas these do not affect revenues. For example, NPOs that capitalize art collections would show greater assets than NPOs that do not, even if their revenues are the same, and NPOs that use high levels of fixed assets in their operations would have more assets than NPOs that do not, even if their revenues are the same. Furthermore, data on audit firm and watchdog rating, which are included in the models of donations of Kitching (2009) and Gordon, Knock, and Neely (2009), respectively, are not included in the Form 990, the source document for the database in this study.

$$lnDi,t = b0 + b1lnPi,t-1 + b2lnFi,t + b3lnGi,t-1 + b4lnPRi,t-1 + b5lnAi,t + b6lnYi,t + b7lnTOTREVi,t + b8lnADi,t-1 + ui,t \quad (1)$$

where i indicates NPO, t indicates year, D is donations, P is all expenses / program expenses, F is fundraising expense, G is governmental revenue, PR is programmatic revenue, A is years elapsed from the first year the organization filed a tax return, Y is measure of wealth defined as net assets / (all expenses – fundraising expenses), TOTREV is all revenue, AD is administrative inefficiency (administrative expenses / all expenses), and u is error.

This model is tested and then wealth is replaced with a modified specification of wealth that eliminates the effect of fixed assets on net assets. Therefore, the modified model is:

$$lnDi,t = b0 + b1lnPi,t-1 + b2lnFRi,t + b3lnGi,t-1 + b4lnPRi,t-1 + b5lnAi,t + b6lnMODYi,t + b7lnTOTREVi,t\ b8lnADi,t-1 + ui,t \quad (2)$$

where MODY is (net assets – fixed assets) / (all expenses – fundraising expenses), modified wealth to eliminate the effect of fixed assets on the calculation of NPO wealth.

For industry samples for which the parameter estimate on Y is significantly negative, finding a significantly greater (in magnitude) negative parameter estimate on MODY would imply that donations are more sensitive to MODY than Y. This would suggest that donors ignore fixed assets in calculating wealth and, implicitly, that donors consider spending on fixed assets as equivalent to expenses. On the other hand, finding no significant difference between the parameter estimate of Y and the parameter estimate of MODY would suggest that donors do not ignore fixed assets in calculating NPO wealth and, implicitly, penalize NPOs with high fixed assets.

For industry samples for which the parameter estimate on Y is significantly positive, finding a significantly larger parameter estimate on MODY would suggest that donors ignore fixed assets in calculating wealth and, implicitly, that donors realize that fixed assets are not as useful a financial cushion than more liquid assets. On the other hand, finding no significant difference between the parameter estimate of Y and the parameter estimate of MODY would suggest that donors do not ignore fixed assets in calculating NPO wealth.

DATA

The source of the data is the Statistics of Income database from the National Center for Charitable Statistics for 2001 and 2000. It includes all U.S. NPOs with assets of $10,000,000 or more and an asset-weighted sample of small NPOs. Since prior year values are required by the model for some variables, only NPOs with data available two years in a row can be used. In addition, observations without data on year of first filing taxes could not be used, since data on age would not be available. Observations with nonsensical amounts – nonpositive fundraising, negative revenue, and nonpositive program expenses - were deleted. After taking these issues into account, a sample of 4,633 organizations remained. Nearly all prior studies test industry samples based on the National Taxonomy of Exempt Entities (NTEE) classification system. The following NTEE industry samples are large enough, in the database used in this paper, to test separately.

Arts – 526 usable observations
Education – 1,482 usable observations
Health - 561 usable observations
Human Services - 580 usable observations
Philanthropic - 358 usable observations

Since the log of zero is undefined, following the prior research, $1 is added to every zero value of GOV and PREV[2].

TABLE 1 - DESCRIPTIVE STATISTICS

Mean and standard deviation of the data. Variables in thousands of dollars, except P, AD, A, Y, and MODY. Data are from 2000, except for D and F, which are for 2001. Y and MODY are as of the end of 2000.

N=4633	Mean	Standard deviation
D	$10,792	$45,084
P	1.40	1.49
F	$1,135	$4,416
AD	.15	.11
G	$3,921	$28,417
PR	$24,613	$103,415
A	37	19
Y	6.6	37.4
MODY	5.5	36.0
TOTREV	$47,336	$179,709

D is donations (in thousands of dollars)
P is total expenses / program expenses
F is fundraising expense (in thousands of dollars)
AD is administrative expenses / total expenses
G is governmental financial support (in thousands of dollars)
PR is program service revenue (in thousands of dollars)
A is years since first filing a tax form
Y is net assets / (total expenses - fundraising expenses), considered to be a measure of wealth
MODY is (net assets – fixed assets) / (total expenses – fundraising expenses)
TOTREV is total revenue (in thousands of dollars)

Because of significant heteroscedasticity in all years, White's (1980) consistent variance-covariance matrix estimator is used to develop confidence intervals. Multi-collinearity, measured by condition indices, is moderate in the full sample and all industry samples, based on

[2] While zero values of all the other variables are considered to be implausible (Tinkelman, 1998), it is plausible that NPOs do not receive any governmental support or generate any revenue from the program services they provide.

results from applying the method of Hair, et al. (1995). Cook's distance test indicates no influential outliers in any industry samples. Durbin-Watson *d* statistics indicate no significant autocorrelation.

RESULTS

Parameter estimates from testing the model in equation 1, using wealth (Y), are shown in Table 2.

TABLE 2 - REGRESSION RESULTS FROM TESTING (UNMODIFIED) WEALTH

lnDi,t = b0 + b1lnPi,t-1 + b2lnFi,t + b3lnGi,t-1 + b4lnPRi,t-1 + b5lnAi,t + b6lnYi,t + b7lnTOTREVi,t + b8lnADi,t-1 + ui,t

	ARTS	**EDU-CATION**	**HEALTH**	**HUMAN SERVICES**	**PHIL-ANTHROPIC**
	N=526	N=1482	N=561	N=580	N=358
lnINTERCEPT	-0.45	0.54*	3.69***	1.96***	1.29***
t stat.	-1.1	1.7	6.0	3.7	3.4
lnP	0.12	-0.47***	-0.44***	-0.30	-0.38**
t stat.	0.8	-3.1	-2.7	-1.4	-2.5
lnF	0.23***	0.31***	0.48***	0.39***	0.20***
t stat.	6.9	14.3	11.8	12.8	6.2
lnG	-0.01	-0.01***	0.03***	0.01	-0.00
t stat.	-0.9	-3.6	2.7	1.3	-0.6
lnPR	-0.04***	-0.06***	-0.09***	-0.05***	-0.01**
t stat.	-4.3	-12.3	-7.3	-6.0	-2.2
lnA	0.03	-0.06	-0.05	-0.14**	-0.04
t stat.	0.5	-1.4	-0.6	2.0	-0.9
lnY	**-0.05**	**0.29*** **	**0.14*** **	**0.24*** **	**-0.12*** **
t stat.	**-1.4**	**10.8**	**3.0**	**6.1**	**-4.8**
lnTOTREV	0.81***	0.68***	0.33***	0.54***	0.76***
t stat.	20.1	24.3	7.2	12.2	21.1
lnAD	0.04	-0.00	0.01	0.04	-0.03
	1.1	-0.1	0.3	1.6	-0.9
ADJ. R SQ.	0.82	0.74	0.47	0.63	0.85

***, **, and *, significant at the 1%, 5%, and 10% levels (two-tailed), respectively.
D is donations (in dollars)

P is total expenses / program expenses
F is total fundraising expenses less professional fundraising service fees (in dollars)
G is governmental financial support (in dollars)
PR is program service revenue (in dollars)
A is years since the organization first filed a tax form
Y is (net assets – fixed assets) / (total expenses – fundraising expenses)
TOTREV is total revenue (in dollars)
AD is administrative expenses / total expenses

Wealth (Y) is significantly positive in three of the industry samples (education, health, and human services), significantly negative in one of the samples (philanthropic), and not significant in one of the samples (arts). Results for the other variables are generally consistent with results of prior studies: price (P) is significantly negative in three of the five samples, fundraising (F) is significantly positive in all of the samples, and size (TOTREV) is significantly positive across all samples. However, age (A) is significantly negative in only one of the samples (human services) and not significant in all other samples. Prior studies generally find age to be significantly negative. Furthermore, governmental support and program service revenues have mixed results –significantly positive for some samples and significantly negative for others, although in all samples, the parameter estimates are small, consistent with results of prior studies.

Parameter estimates from testing the model in equation 2, using modified wealth (MODY), are shown in Table 3.

TABLE 3 - REGRESSION RESULTS FROM TESTING MODIFIED WEALTH

$$lnD_{i,t} = b0 + b1lnP_{i,t-1} + b2lnF_{i,t} + b3lnG_{i,t-1} + b4lnPR_{i,t-1} + b5lnA_{i,t} + b6lnMODY_{i,t} + b7lnTOTREV_{i,t} + b8lnAD_{i,t-1} + u_{i,t}$$

	ARTS	**EDUCATION**	**HEALTH**	**HUMAN SERVICES**	**PHIL-ANTHROPIC**
	N=526	N=1482	N=561	N=580	N=358
lnINTERCEPT	-0.43	0.63**	3.68***	2.32***	1.27***
t stat.	-1.1	2.0	6.0	4.4	3.3
lnP	0.06	-0.38**	-0.43***	-0.23	-0.38**
t stat.	0.5	-2.5	-2.6	-1.1	-2.5
lnF	0.24***	0.31***	0.47***	0.40***	0.20***
t stat.	7.1	14.0	11.6	13.2	6.2
lnG	-0.01	-0.01***	0.03***	0.01	-0.00
t stat.	-0.8	-3.8	2.7	0.8	-0.6
lnPR	-0.04***	-0.06***	-0.08***	-0.05***	-0.01**
t stat.	-4.0	-12.3	-6.9	-5.8	-2.3
lnA	0.02	-0.04	-0.05	-0.10	-0.04

t stat.	0.3	-1.0	-0.6	-1.4	-0.9
lnMODY	**-0.00**	**0.17*** **	**0.12*** **	**0.24*** **	**-0.11*** **
t stat.	**-0.1**	**10.4**	**3.3**	**6.1**	**-4.7**
lnTOTREV	0.80***	0.69***	0.34***	0.51***	0.76***
t stat.	19.8	24.6	7.4	11.7	21.0
lnAD	0.04	-0.00	0.01	0.04*	-0.04
	1.1	-0.3	0.2	1.9	-1.0
ADJ. R SQ.	0.82	0.74	0.47	0.62	0.85

***, **, and *, significant at the 1%, 5%, and 10% levels (two-tailed), respectively.
D is donations (in dollars)
P is total expenses / program expenses
F is total fundraising expenses less professional fundraising service fees (in dollars)
G is governmental financial support (in dollars)
PR is program service revenue (in dollars)
A is years since the organization first filed a tax form
MODY (net assets – fixed assets) / (total expenses – fundraising expenses)
TOTREV is total revenue (in dollars)
AD is administrative expenses / total expenses

MODY is significantly positive in three of the industry samples (education, health, and human services), significantly negative for one of the samples (philanthropic), and not significant for one of the samples (arts). However, what is relevant to this study is whether the parameter estimate for MODY in the education sample, the health sample, and the human services sample (samples for which the parameter estimates for Y and MODY are significantly positive) is significantly greater than the respective sample parameter estimates for Y.

The parameter estimates for MODY in the health and the human services samples are not significantly different from the respective parameter estimates for Y at the 10% level or better. This suggests that donors to these types of NPOs do not implicitly ignore fixed assets in calculating NPO wealth. Furthermore, the parameter estimate for MODY in the philanthropic sample, which is significantly negative, is not significantly different from the parameter estimate for Y, which is also significantly negative. This suggests that donors to philanthropic NPOs do not implicitly ignore fixed assets in calculating NPO wealth.

Results for the education sample, where the parameter estimate for MODY (0.17) is perversely significantly lower than the parameter estimate for Y (0.29) at the 1% level, suggest that donors to education NPOs reward education NPOs for higher fixed assets. This is inconsistent with the proposed notion that donors perceive fixed assets as providing less of a financial cushion than other more liquid assets. One possible explanation for a stronger relation between donations and wealth (that includes fixed assets in the numerator) is endogeneity – greater donations to education NPOs lead to higher fixed assets. In other words, donations to education NPOs are likely to be for fixed assets rather than for other purposes. Testing this explanation is left to a future paper.

CONCLUSIONS AND LIMITATIONS

This paper examines whether donors implicitly distinguish between fixed assets and other assets when assessing wealth of an NPO. Results generally suggest that donors to arts, health, human services, and philanthropic NPOs do not implicitly ignore fixed assets in the calculation of wealth of such NPOs. Likely, this is because while data on fixed assets is made publicly available by NPOs, watchdog agencies that publish metrics on NPO performance do not distinguish between fixed assets and other assets. Donors seem not to attend to underlying data on balance sheet disclosures of NPOs. Results for the education NPOs, however, are perverse. They suggest that donors reward education NPOs with higher levels of fixed asset. This may be a result of endogeneity between donations to NPOs and wealth of such NPOs. In other words, donations to NPOs may likely be for construction or purchase of fixed assets. This paper does not test this assertion, leaving this question to be addressed in future studies.

This paper has additional limitations. Donors may be heterogeneous in their interpretation of wealth; one set of donors may view higher levels of NPO wealth negatively, consistent with a belief that NPOs with high levels of wealth are less "needy" – that donations to such NPOs may sit in idle reserves that do not currently further the NPOs' objectives. Another set of donors may view higher levels of NPO wealth favorably, consistent with a belief that NPOs with high levels of wealth are more financially sound. If an NPO receives donations from both sets of donors, the empirical relation between donations and wealth would be attenuated. In other words, one could find no significant relation between donations and wealth because the set of donors with one belief offset donors with the opposite belief. This phenomenon would bias parameter estimates towards zero. Nonetheless, finding a significant relation, whether positive or negative, between wealth and donations, would be a strong indication that one of the sets of donors "dominates" the other.

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