The Investment Returns of Nonprofit Organizations, Part II

THE VALUE OF FOCUSED ATTENTION

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We continue our examination of the investment performance of nonprofit charities and foundations. This analysis tests hypotheses about what types of organizations do better. Our motivating intuition is that nonprofits with greater focus on investment performance will secure higher returns. Our hypotheses are tested by regressing the rate of return for each organization on various characteristics. As expected, nonprofits whose primary business is predominantly financial, such as insurance providers and pension or retirement funds, consistently earn higher returns. The data also support our hypotheses that larger nonprofits, older nonprofits, and private foundations will tend to outperform. The evidence is mixed as to whether nonprofits that pay higher executive salaries or spend more on management earn higher returns.

Keywords: *endowment; investment returns; public charity; private foundation*

THE FIRST PART of this study introduced the data set that we used to analyze the investment performance of nonprofit organizations. Data from Internal Revenue Service (IRS) forms were used to assess the rate of return for each organization in each year. This data source is not ideal. Most important, the rate of return itself is not directly reported. Nevertheless, as we argued in part I of our study, the data do enable us to analyze investment performance. Moreover, because the data are reported to the IRS, they are more likely to be accurate than figures provided to the media or trade associations given the incentive to exaggerate performance. A further advantage of our data set is its size and its coverage of many types of nonprofit organizations. Previous studies tended to focus on a single class of nonprofits (for example, universities). This second and concluding part of the study presents and tests our hypotheses about which types of nonprofits should have better investment performance.

Our hypotheses are deduced from the literature. They provide an intuitive understanding of factors that have the potential to influence performance. All five of these hypotheses

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contribute to an overarching hypothesis of *focused attention.* Some nonprofits will focus more heavily on investment performance than will others, and those that do so will secure superior investment returns, controlling for risk. Intuition indicates that some observable characteristics of nonprofits will determine how strongly a nonprofit focuses on investment performance. Most nonprofits see themselves as fulfilling important societal missions, such as educating children or eliminating disease. The more strongly the nonprofit focuses on its mission, other factors equal, the less attention it will pay to managing its endowment. The further is its core mission from building an endowment, the less well it should do on securing returns to its endowment. Starting from the presumption that virtually any organization has limited attention, we posit that organizations that relegate endowment performance to a secondary consideration will perform less well.[1] Of course, no organization would announce such a preference; thus we can only posit attributes that are likely to be related.

Our five hypotheses are labeled the *size* hypothesis, the *management* hypothesis, the *compensation* hypothesis, the *age* hypothesis, and the *financial orientation* hypothesis. Each of these hypotheses should be understood to hold other factors equal and to control for risk. In other words, organizations that do better are not merely moving to a different point along the risk/return frontier, but are rather operating closer to the frontier.

It seems plausible that larger nonprofits would do better. They can afford more professional management and may get access to superior investments, say, in private equity. Furthermore, over a reasonable range, we would expect there to be economies of scale in securing returns, whether one uses outside managers or invests in house. For example, a nonprofit with twice the endowment of another that paid twice as much to its investment manager should get better results[2] given economies of scale in investment management.[3] It should also have access to better investment opportunities, say, with hedge funds that have superior records, which normally shun small investors. Finally, larger nonprofits secure a much greater fraction of their budgets from their endowments; hence they would be expected to secure more of their focus.[4]

> *Size Hypothesis (1).* Larger nonprofits will secure greater investment returns.

Many nonprofits consider their public purpose to be their primary responsibility and would be hesitant to spend a great deal, either in executive or board time or direct dollars, on managing their endowments. Partly this has to do with how they present themselves to the public. Significant disparities in expenditures on management are even found within nonprofits of the same size and type. Nonprofits that push mission at the expense of investment performance might also plausibly spend less on management generally. In effect we are arguing that there are pressures for nonprofits to spend less on financial management than would be optimal, given the "focused attention" issue.

> *Management Hypothesis (2).* Nonprofits that spend more on management will secure greater investment returns.

We stress that these hypotheses are interpreted as holding all else equal. Management expenditures are correlated with overall endowment size, to be sure. Thus, we control for size in our regressions. But among two equal-sized charities, the hypothesis predicts that the one that spends more on management will secure superior returns.

Nonprofits that place more emphasis on investment performance might also choose to pay higher executive salaries in general to attract talent. Higher salaries may also reflect a stronger belief that higher pay attracts talent.[5]

> *Compensation Hypothesis (3).* Nonprofits that pay higher executive salaries will secure greater investment returns.

In the second and third hypotheses, these expenditure measures are meant to be indicators for how much focus or resources a nonprofit is spending on managing its endowment. Direct measures of such spending, for example, expenditures for financial advisors, unfortunately, are not available.

Older nonprofits have more experience securing investment returns, and thus we expect age to be correlated with investment performance, all else equal.

> *Age Hypothesis (4).* Older nonprofits will secure greater investment returns.

Finally, we expect that nonprofits that focus on financial activities would perform better. Their high-level executives should be financially sophisticated. Equally important, we would expect their orientation to be toward financial performance. In this bailiwick, we would find insurance providers, pension and retirement funds, and private foundations. This leads to:

> *Financial Orientation Hypothesis (5).* Organizations whose primary business is predominantly financial will secure greater investment returns.

These five hypotheses represent our prime understanding drawing on theory derived from the literature and common sense. However, we note that nonprofits represent an extraordinarily diverse group of entities. It would be surprising if there were not other categories within which nonprofits earned significantly better or significantly worse returns than the norm. Thus, for example, we advance no prior beliefs as to whether art museums should do better than hospitals, or social service organizations should do better than environmental organizations. But it would be surprising if beyond statistical chance we did not find certain classes of nonprofits that did substantially better or worse than others, quite apart from our five hypotheses. Similarly, factors beyond those available for study surely influence returns. For instance, it is likely that nonprofits with a greater percentage of business representation on their boards and those whose investment officers have higher education levels or financial training have more focused attention on endowment performance, as would private foundations created by financial professionals as opposed to those created by successful manufacturers. Unfortunately, we were unable to observe these variables in our data.[6] Finally, we reiterate that all of our analyses control for risk.

To test these hypotheses, we regressed the rate of return for each organization on various measures of its qualities, including its size, age, category, and level of executive compensation. To control for risk, we included the standard deviation of returns. To convincingly test the direction of causality for the relationships we find would require a natural experiment. Unfortunately, no such experiment is available. Recognizing that we lack this gold standard test, the fact that a number of correlations confirm some of our hypotheses is reassuring. Such relationships have not been found before using nearly so general a data set.

We present our base case regression results in the first section and robustness tests in the second section. We conclude the article in the third section.

Results

Regression analysis enabled us to look for relationships between nonprofit characteristics and the rates of return on investments that they receive. For robustness, we used all three calculations of the rate of return that were described in part I. The base econometric specification is

$$ror_{it} = \beta X_{it} + \gamma Z_i + \theta_t + \varepsilon_{it}.$$

The dependent variable is the rate of return of nonprofit i in year t. It is regressed on X_{it}, which may include a number of variables that vary by organization and by year. The regression also includes Z_i, variables that vary only by nonprofit but are constant throughout time. We also included a time-specific effect θ_t and an error term ε_{it}.

Some of the variables comprising X_{it} and Z_i are listed in the summary statistics of Table 1 in part I of this study. We included these variables to test our five hypotheses. First, the size hypothesis predicts that larger nonprofits will reap higher rates of return, so we included as a regressor the charity's size, as measured by the beginning-of-year fund balance. Second, the management hypothesis predicts that spending more on management will raise a nonprofit's rate of return. We thus included the total amount of management and general expenses. The compensation hypothesis predicts that nonprofits paying higher executive salaries will secure higher rates of return, so we included total executive compensation in X_{it}.[7] The age hypothesis predicts that older charities will secure higher rates of return, so we included the charity's age in Z_i.[8]

Last, the financial orientation hypothesis predicts that nonprofits that are predominantly financially oriented will earn higher returns. We tested this by including a set of indicator variables for nonprofit type, as measured by the National Taxonomy of Exempt Entities (NTEE) classification system described in part I. We included an indicator for whether the nonprofit is a private foundation as defined by the IRS (thus submitting Form 990PF) rather than a public charity (and submitting Form 990). We expect private foundations to earn higher returns.

We included indicator variables for the state in which the organization is located and the year. We also controlled for the level of risk for an organization's investment returns. Our measure was simply the standard deviation about the mean of our constructed rate of return measures from all of the years that we observed for a particular organization.[9] We used the natural log of all of the financial variables and the age, but the dependent variable, the rate of return, can take negative values, so we did not take its log and use its original value. Our coefficients thus represent what are sometimes called semi-elasticities. These relationships are thus nonlinear; we also investigated nonlinearities by estimating threshold effects.

We did not include an organization-fixed-effect α_i. Our hypotheses are about differences *across* organizations and types of organizations rather than differences *within* an organization. For instance, hypothesis 1 claims that organizations with larger endowments tend to earn higher returns. It does not claim that if an organization has a higher than average endowment

Table 1. Rates of Return, Base Case Regressions

	1	*2*	*3*	*4*	*5*	*6*
	ror1	*ror2*	*ror3*	*ror1*	*ror2*	*ror3*
log(Net assets, beginning of year)	0.145***	0.155***	0.0896***	0.254***	0.189***	0.199***
	(0.0164)	(0.0346)	(0.0212)	(0.0211)	(0.0378)	(0.0309)
log(Management expenses)	−0.0375**	0.0720***	0.0286*	−0.0696***	0.0798***	0.0437**
	(0.0141)	(0.0162)	(0.0158)	(0.0124)	(0.0219)	(0.0184)
log(Executive compensation)	0.00283	−0.0104	0.0219***	−0.0104	0.00812	−0.00665
	(0.00564)	(0.00936)	(0.00650)	(0.00749)	(0.0124)	(0.0100)
log(Age)	0.0725	0.0525	0.394***	0.423***	0.0636	0.651***
	(0.0566)	(0.0558)	(0.0535)	(0.0384)	(0.0727)	(0.0542)
Foundation	3.590***		2.159***	2.955***		2.014***
	(0.110)		(0.142)	(0.125)		(0.162)
Standard deviation of returns	0.353***	0.352***	0.287***	0.349***	0.377***	0.288***
	(0.00752)	(0.0126)	(0.0109)	(0.00564)	(0.00892)	(0.00681)
ntee1==A Arts, Culture, & Humanities	−1.579***	0.0918	−2.356***	−3.928***	−0.214	−2.819***
	(0.364)	(0.407)	(0.418)	(0.477)	(0.731)	(0.705)
ntee1==B Education	−1.502***	0.477	−1.377***	−3.422***	0.212	−1.723**
	(0.285)	(0.462)	(0.418)	(0.463)	(0.713)	(0.687)
ntee1==C Environment	−1.814***	0.416	−2.080***	−4.027***	0.173	−2.968***
	(0.426)	(0.529)	(0.517)	(0.545)	(0.812)	(0.783)
ntee1==D Animal-Related	−1.429***	0.116	−2.356***	−3.713***	−0.0516	−2.946***
	(0.401)	(0.501)	(0.567)	(0.588)	(0.876)	(0.842)
ntee1==E Health Care	−3.050***	1.202**	−2.644***	−4.485***	1.529**	−2.400***
	(0.317)	(0.473)	(0.526)	(0.466)	(0.711)	(0.692)
ntee1==F Mental Health	−2.774***	0.989**	−2.527***	−4.624***	0.689	−3.092***
	(0.340)	(0.461)	(0.496)	(0.525)	(0.805)	(0.792)
ntee1==G Health Associations	−0.862**	0.884	−1.805***	−2.558***	0.158	−1.755**
	(0.347)	(0.572)	(0.419)	(0.568)	(0.866)	(0.828)
ntee1==H Medical Research	0.819	0.720	−0.769	−0.797	0.675	−0.762
	(0.549)	(0.484)	(0.616)	(0.592)	(0.869)	(0.832)
ntee1==I Crime & Legal-Related	−1.347***	1.198	−1.399**	−3.799***	1.299	−2.092**
	(0.499)	(0.725)	(0.689)	(0.653)	(0.962)	(0.943)
ntee1==J Employment	−2.269***	0.830	−1.607***	−4.138***	0.784	−2.281***
	(0.355)	(0.606)	(0.510)	(0.575)	(0.873)	(0.856)
ntee1==K Food, Agriculture, & Nutrition	−2.525***	0.604	−2.990***	−4.115***	0.412	−3.808***
	(0.387)	(0.672)	(0.566)	(0.754)	(1.119)	(1.112)
ntee1==L Housing & Shelter	−1.691***	1.372**	−2.182***	−3.372***	1.666**	−3.139***
	(0.394)	(0.531)	(0.556)	(0.492)	(0.796)	(0.769)

(*Continued*)

Table 1. (*Continued*)

	1	2	3	4	5	6
	ror1	*ror2*	*ror3*	*ror1*	*ror2*	*ror3*
ntee1==M Public Safety	−2.280***	0.377	−1.551**	−4.659***	1.027	−2.151**
	(0.376)	(0.589)	(0.680)	(0.729)	(1.277)	(1.067)
ntee1==N Recreation & Sports	−2.228***	0.0725	−2.449***	−3.934***	0.517	−2.787***
	(0.333)	(0.658)	(0.549)	(0.527)	(0.854)	(0.781)
ntee1==O Youth Development	−1.425***	0.312	−1.747***	−3.206***	−0.449	−2.356***
	(0.327)	(0.500)	(0.379)	(0.550)	(0.818)	(0.800)
ntee1==P Human Services	−1.839***	0.681	−2.083***	−3.858***	0.360	−3.081***
	(0.281)	(0.417)	(0.454)	(0.471)	(0.720)	(0.701)
ntee1==Q International, Foreign Affairs, & National Security	−1.145**	0.288	−2.051***	−3.274***	0.574	−2.621***
	(0.506)	(0.432)	(0.386)	(0.563)	(0.822)	(0.815)
ntee1==R Civil Rights, Social Action, & Advocacy	−2.478***	1.323*	−2.538***	−4.682***	−0.00777	−4.279***
	(0.653)	(0.773)	(0.739)	(0.850)	(1.262)	(1.242)
ntee1==S Community Improvement	−1.694***	1.205*	−2.319***	−3.937***	1.489*	−2.515***
	(0.379)	(0.613)	(0.604)	(0.521)	(0.822)	(0.786)
ntee1==T Philanthropy, Voluntarism, & Grantmaking Foundations	0.0607	0.707*	−1.502***	−2.004***	0.491	−1.549**
	(0.255)	(0.418)	(0.432)	(0.450)	(0.741)	(0.671)
ntee1==U Science & Technology	−0.860	−0.332	−1.960***	−2.542***	−1.153	−2.635***
	(0.573)	(0.419)	(0.689)	(0.601)	(0.877)	(0.859)
ntee1==V Social Science	0.911	0.435	−1.827***	−2.046**	−1.173	−2.472**
	(0.571)	(0.846)	(0.544)	(0.887)	(1.297)	(1.228)
ntee1==W Public & Societal Benefit	0.0344		−2.087***	−2.201***		−1.852**
	(0.552)		(0.663)	(0.612)		(0.876)
ntee1==Y Mutual & Membership Benefit	1.939***	3.018***	−1.075**	0.928	2.739**	0.146
	(0.358)	(1.054)	(0.468)	(0.655)	(1.142)	(0.897)
Constant	3.528***	9.669***	11.11***	2.348**	1.195	2.171
	(0.347)	(1.317)	(0.728)	(0.943)	(1.515)	(1.368)
Observations	271,179	55,535	150,456	271,179	55,535	150,456
R-squared	0.149	0.250	0.181	0.233	0.196	0.124

Note: Robust standard errors in parentheses. Data are from 1982–2007 Statistics of Income (SOI) files. Columns 1 to 3 are pooled OLS regressions; columns 4 to 6 are between-effects regressions. The calculated rate of return ror2 is available for public charities only. The omitted charity type (NTEE1) is "Z Unknown," and also "Y" in columns 2 and 5. State and year indicators are included in the regressions, though not reported.
**** p < 0.01, ** p < 0.05.*

at the start of one particular year then it will earn a higher than average return that year. This second claim would be picked up in a fixed-effects framework, but the first claim (our hypothesis) would be washed out. Furthermore, even if we were primarily interested in the within-organization effect, it is unlikely that the effect would be localized within a single

year. For instance, the effect of an increase in management expenses within an organization may increase its investment return but only over time. A fixed-effects estimator would only pick up the contemporaneous effect.[10] Thus, our preferred specifications are a pooled ordinary least squares (OLS) estimator and a between estimator, that is, the coefficients derived from a regression on group means.

Our main results are presented in Table 1 following. Columns 1–3 report results from pooled OLS regressions, and columns 4–6 report results using the between estimator. We use each of the three calculated values of rate of return and include all observations for which the calculated rate of return lies inside of [–50% + *sp_ret*, 50% + *sp_ret*]. Regressions that do not exclude these outliers (not reported) have a very low R^2 value (less than 0.01), and produce unreasonable coefficients. Thus, we focus on results that exclude observations that have unreasonable values for the rate of return.[11] Standard errors are clustered by state. State and year coefficients, not reported, are available from the authors.

The coefficient on net assets in Table 1 is always positive and is significant in all six columns. The dependent variable in all of these regressions is the rate of return in percentage. The magnitudes of the coefficients on the log of net assets indicate the effect of a doubling of a charity's net assets on the rate of return; this effect ranges from 0.09 percent to 0.25 percent across the six columns. The effect of an order of magnitude (tenfold) increase in assets on the rate of return ranges from 0.9 percent to 2.5 percent. Larger charities thus get a higher rate of return. The effect is statistically significant, albeit moderate in absolute size. Compare it, for example, to the standard deviation in the calculated rates of return of 9.6 percent. This larger-assets/higher-return result is predicted by hypothesis 1. It is also consistent with results found in earlier smaller-scale studies of endowments for colleges and universities (NACUBO-Commonfund Institute 2011, Figure 2.2; Lerner, Schoar, and Wang 2008), and for foundations (Commonfund Institute 2011a, Figure 2.3).[12]

There are at least three complementary explanations for hypothesis 1 and this result. First, larger nonprofits could do better on their investments because they reap economies of scale, as we described earlier. Second, a persistent unobservable organization-fixed effect—for example, a terrific endowment manager—could lead to a positive correlation between size and investment returns, because organizations that have invested well in the past will be larger and will continue to do well in the future. Because our hypotheses are primarily about differences among organizations and organization types, we interpret the unobservable organization-fixed effect as consistent with the hypothesis. Third, net assets could be positively correlated with the rate of return because net assets, as measured in our data set, can include both endowment funds and general operating funds. If larger nonprofits also keep a substantially smaller fraction of their net assets reserved for their general operating funds, as we might expect, and if these monies are kept in more liquid assets offering lower returns, then this will enable larger nonprofits to reap better calculated rates of return.[13]

To address the third explanation for the correlation between assets and investment performance, namely a lesser proportion of assets in operating funds, we exploit the fact that the organization's noninvestment income (which we observe) can be used as a proxy for general operating funds. Of course it is a less than perfect proxy, but its justification is that noninvestment income (for instance, from dues and program service revenue) are roughly correlated with the annual "costs of doing business" of the organization. Subtracting these costs out of net assets (which roughly should be the endowment plus general operating funds) yields our very rough proxy for the value of the endowment. Regressing the rate of

return measures on the log of this variable rather than the log of net assets yields a significantly positive coefficient, though one of a smaller magnitude than those shown in Table 1.

We also investigate a second proxy for the size of the endowment. Bowman, Tuckman, and Young (2012) recommend that the best calculation of an organization's endowment that can be garnered from the 990 form is taken from the balance sheets, and is equal to the sum of investments in securities and "other investments." (That is, they suggest omitting reported investments in land, buildings, and equipment.) As with our first proxy, regressing the rate of return measures on this proxy in place of the net assets also yields significantly positive coefficients. The magnitudes of the coefficients on this proxy are comparable to those in Table 1, except that the coefficient in the *ror2* regression is only a fifth the size (but still significantly positive at the 1 percent level).

The next row in Table 1 shows the effect from a charity's spending on management and general expenditures, which includes investment expenses. Hypothesis 2 predicts that higher spending in this category, holding endowment size fixed, should lead to higher rates of return. We find this using the measures *ror2* and *ror3* in columns 2–3 and 5–6. Here all expense categories are entering absolutely. Later we consider regressions where they are expressed as a fraction of total expenses. The effect of a doubling of management and general expenditures on the charity's rate of return ranges from 0.03 percent to 0.80 percent.[14] However, when measure *ror1* is used, we find a negative correlation with management expenses.

The next row shows the effect from executive compensation. It is significantly positive in one column, consistent with our third hypothesis, but insignificant and negative in all other columns. Lerner, Schoar, and Wang (2008) find that for college and university endowments, compensation of investment officers seems to increase with excess returns. Positing skill in investment, hence persistence in performance, the relationship of higher compensation to better performance could come primarily from rewards to past performance, as opposed say to paying more to get better or more personnel at the outset. Additionally, officer compensation or managerial expenses might be tied to charitable output, for example, a manager or officer might get paid more if the nonprofit serves more people or cures more cases of a disease. Because we do not observe charitable output, this is an omitted variables problem. As long as charitable output is uncorrelated with investment returns, the omission will not bias our results.

The age of a nonprofit is positively correlated with its rate of return in all columns, significantly so in three of the six columns.[15] This corroborates our fourth hypothesis.

Hypothesis 5 predicts that organizations whose primary business is predominantly financial will secure higher returns. One way to test this is to compare the rates of return of public charities and those of private foundations, because foundations are more likely to be financially oriented. The indicator variable for private foundations is missing from the regressions in columns 2 and 5 because the *ror2* calculation is not available for private foundations. In all other columns, it is significantly positive. Foundations earn a rate of return 2.0–3.6 percentage points higher on average than charities as a whole. However, we must qualify this finding by pointing out that the calculation of the rate of return differs between public charities and private foundations because they report on different forms, as described earlier. It is possible that this coefficient is biased. We cannot disentangle the effect of being a private foundation from the effect of filling out a 990PF instead of a 990.[16]

We observe a significantly positive relationship between an organization's standard deviation and rate of return, as we would expect of organizations trading off between risk and return. A one unit increase in the organization's standard deviation of returns is associated with a 0.29 to 0.38 unit (percentage point) increase in its rate of return. This relationship is strongly significant, and the magnitude is consistent across columns.

The next twenty-five rows further investigate hypothesis 5 by showing the coefficients on variables that indicate nonprofit category. Of the twenty-five categories, the omitted one is "Unknown." Because no observations of the "Unknown" category have the data necessary to construct *ror2*, in columns 2 and 5 we must also omit another category to avoid multicollinearity. We chose to omit "Public and Societal Benefit," because its coefficient in column 1 is closest to zero. In all columns except 2 and 5, most of these categories are statistically lower than the omitted category. Certain category indicators consistently have higher coefficients. These categories are Mutual and Membership Benefit (which has the highest value in five of the six columns and the second highest in the other), Medical Research (among the five highest coefficients in four of the six columns), Philanthropy, Voluntarism, and Grantmaking Foundations (among the five highest coefficients in four of the six columns), and Public and Societal Benefit (among the five highest coefficients in two of the six columns).

Mutual and membership benefit organizations include insurance providers and pension and retirement funds. The category of medical research covers not only the research organizations themselves but also fundraising and support organizations for medical research.[17] The most commonly represented public and societal benefit organizations are financial institutions, primarily related to student loans. Philanthropy, voluntarism, and grantmaking foundations includes both private foundations (as defined by the IRS) and public charities, such as local United Way chapters.[18] These categories of charities constitute our financial charities, and their high rates of return support hypothesis 5. Type of charity matters to rates of returns, and those we would expect to do well succeed in doing so.

Our base case regressions in Table 1 provide strong evidence supporting hypotheses 1 (size), 4 (age), and 5 (financial orientation). The evidence for hypotheses 2 (management) and 3 (compensation) is mixed.

Robustness Checks

Table 2 presents alternate specifications of the regressions. Each column uses *ror1* as the dependent variable, and each column except for column 3 runs a pooled OLS regression. State, year, and organization-type fixed effects are included. In the first column, we include additional organization-level covariates measuring income and expenditure categories (unavailable for foundations). Fundraising expenses are positively correlated with returns. Direct public support includes private donations of both money and goods, including donations from individuals and foundations. Indirect public support is a small component of revenue for most charities. It predominantly represents revenues collected indirectly though organizations running federated fundraising campaigns, the majority coming from the United Way. Government grants include monies received from federal, state, or local governments that are treated as contributions. Program service represents income from providing the services that serve as the basis for the organization's tax-exempt status.[19] Each of these four income categories is negatively correlated with investment returns. This suggests a substitution between

Table 2. Rates of Return, Alternate Specifications of Regressions

	1	2	3	4
	ror1	*ror1*	*ror1*	*ror1*
log(Net assets, beginning of year)	0.257***	0.127***	−1.611***	0.334***
	(0.0216)	(0.0133)	(0.0306)	(0.0266)
log(Management expenses)	0.0192	−0.0876***	0.0708***	0.0249
	(0.0115)	(0.0245)	(0.00760)	(0.0184)
log(Executive compensation)	0.0228***	0.0446***	0.0167***	−0.00323
	(0.00622)	(0.0137)	(0.00448)	(0.0115)
log(Age)	0.123***	0.0663		0.0797
	(0.0424)	(0.0602)		(0.0575)
log(Fundraising expenses)	0.0176***			
	(0.00573)			
log(Direct public support)	−0.0374***			
	(0.00894)			
log(Indirect public support)	−0.0270***			
	(0.00485)			
log(Government grants)	−0.0523***			
	(0.00476)			
log(Program service revenue)	−0.138***			
	(0.00899)			
Foundation		3.611***		3.590***
		(0.113)		(0.111)
Standard deviation of returns	0.341***	0.352***		0.352***
	(0.00982)	(0.00758)		(0.00733)
(sizequartile==2)*lnmgmtgenexp				−0.0342***
				(0.0112)
(sizequartile==3)*lnmgmtgenexp				−0.0869***
				(0.0126)
(sizequartile==4)*lnmgmtgenexp				−0.111***
				(0.0120)
(sizequartile==2)*lncomp				0.00859
				(0.0129)
(sizequartile==3)*lncomp				0.00478
				(0.0123)
(sizequartile==4)*lncomp				0.0142
				(0.0122)
Constant	0.713	3.322***	31.97***	0.512
	(0.567)	(0.353)	(0.487)	(0.509)
Observations	235,232	270,694	327,224	271,179
R−squared	0.150	0.149	0.102	0.150

Note: Robust standard errors in parentheses. Data are from 1982–2007 SOI files. The variables fundraising, direct public support, indirect public support, government grants, and program service revenue are available for public charities only. State, year, and charity type indicators are included in the regressions, though not reported.
*** $p < 0.01$.

investment income and these other sources of income. Column 2 includes management expenses and executive compensation expressed as a fraction of total expenditure rather than absolute levels. Management expenses are negatively correlated and executive compensation positively correlated with returns.

Column 3 includes organization-fixed effects. Although not our preferred specification for reasons discussed earlier, we present results here. This is the only place in which the size hypothesis is not supported; the coefficient on assets is significantly negative. Hypotheses 2 and 3, though, are supported by the fixed-effects regression. Lastly, column 4 includes interaction terms between management expenses and executive compensation and four quartiles of organization size, measured by net assets. This allows for more general nonlinearities in the relationship between these expenses and rates of return. Though the evidence for hypotheses 2 and 3 is mixed, it may be the case that it appears more straightforward for larger vs. smaller nonprofits. The effect of compensation is insignificant for all size quartiles (quartile 1, the smallest nonprofits, is the omitted group). However, the effect of management expenses appears to be smaller for larger nonprofits. Perhaps only the smallest nonprofits see any effect from paying more to managers (though even for the excluded group the coefficient is not significantly positive).

We were also interested in whether larger organizations do better on a forward-looking basis. It is not surprising that the largest endowments in 2007 did better over the previous ten years. That outcome would result if returns were merely random. Our concern was whether the largest endowments in 1997 did better over the next ten years. For each charity, we calculated the average rate of return over the fourteen years between 1994 and 2007. We regressed this average on the organization's endowment at the beginning of 1993.[20] We also included average values of the other regressors over those years and state- and type-fixed effects. Results are presented in Table 3, where the three columns use the three definitions for rates of return. In all three regressions, we observe a positive relationship between the charity's endowment in 1993 and its average rate of return over the next fourteen years, with semi-elasticity values ranging between 0.056 and 0.85. Thus, if charity B is twice as large as charity A, its annual rate of return will be 0.06 percent to 0.9 percent higher on average. Larger charities indeed do better on a strictly forward-looking basis, as predicted by hypothesis 1. However, the coefficient is significantly different from zero in only two of the three columns.

In addition to looking at investment returns, we would like to have looked at some investment decisions that nonprofits make. Some important information is not compiled, such as whether a nonprofit hired external investment advisors, whether it engaged in active versus passive investing, or invested in publicly traded funds versus off-market deals.[21] Fortunately, we do have information on the composition of portfolios. Thus, we can observe the fraction of a nonprofit's investment assets that it holds in investment securities, as opposed to cash, real estate, or "other" investments.[22] These data are available only in the balance sheets of the Forms 990 and 990PF, and we have a smaller sample size for which these are available, as discussed in the online appendix.

Table 4 reports regression results where the dependent variable is the ratio of securities investments to total investments. The median value of this ratio is 16 percent, its 75th percentile is 89 percent, and its 25th percentile is 0 percent. Thus, the composition of portfolio holdings varies enormously. Column 1 reports a pooled OLS regression, and column 3 a between-effects regression. Consistent evidence emerges across both columns: larger endowments place a higher fraction of investments in securities. Higher executive compensation

Table 3. Investment Performance on a Forward-Looking Basis

	1	*2*	*3*
	ror1	*ror2*	*ror3*
log(Net assets, beginning of year)	0.0558	0.850***	0.788***
	(0.0655)	(0.126)	(0.119)
log(Management expenses)	−0.0149	−0.175**	−0.223***
	(0.0339)	(0.0711)	(0.0666)
log(Executive compensation)	0.0207	−0.0847*	0.000408
	(0.0194)	(0.0454)	(0.0424)
log(Age)	−0.237*	0.450	−0.0185
	(0.138)	(0.298)	(0.290)
Foundation	12.93***	1.697	0.511
	(1.242)	(8.002)	(1.595)
Standard deviation of returns	0.518***	0.323***	0.160***
	(0.0290)	(0.0365)	(0.0335)
Constant	−2.699	−13.01**	−14.54***
	(5.701)	(5.168)	(4.447)
Observations	9,260	5,031	6,638
R-squared	0.129	0.060	0.037

Note: Robust standard errors in parentheses. Data are from 1993–2007 SOI files. State, year, and charity type indicators are included in the regressions, though not reported.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

is associated with a higher fraction of the endowment in securities. Management expenses correlate negatively with the securities proportion. Older charities have a higher fraction of investments in securities, as do foundations. The coefficients on the organization categories indicate that the same types of charities that exhibited higher investment returns in Table 1 also invest a higher fraction of their endowment in securities. None of the results from Table 4 is surprising, because they all track fully with our results on investment returns. The types of organizations that secure higher on average investment returns are able to do so because they invest more intensively in higher-return instruments. Table 4 thus provides complementary support for hypotheses 1, 4, and 5. As before, hypotheses 2 and 3 are not supported.

Conclusions

Larger nonprofits, older nonprofits, and private foundations tend to earn higher rates of return on their endowments. Nonprofits whose business is predominantly financial, including mutual and membership benefit organizations (such as pension funds), and grantmaking organizations also earn higher returns. These results are consistent with a general focused attention hypothesis. That is, some types of nonprofits are more focused on their investment performance than are others and, as predicted, those organizations do systematically secure higher returns. Our five specific hypotheses are offshoots of this general hypothesis. The size hypothesis, the age hypothesis, and the financial orientation hypothesis are supported by the data. The compensation hypothesis and the management hypothesis are neither supported

Table 4. Investment Strategy as Indicated by Securities Ratio

	1	*2*
	secratio	*secratio*
log(Net assets, beginning of year)	0.0558***	0.0521***
	(0.00141)	(0.00105)
log(Management expenses)	−0.00811***	−0.00909***
	(0.000721)	(0.000595)
log(Executive compensation)	−4.27e−05	0.000915**
	(0.000481)	(0.000358)
log(Age)	0.0317***	0.0309***
	(0.00369)	(0.00191)
Foundation	0.348***	0.350***
	(0.0105)	(0.00761)
ntee1==A Arts, Culture, & Humanities	−0.00733	−0.0162
	(0.0160)	(0.0227)
ntee1==B Education	0.0247*	0.0422*
	(0.0136)	(0.0220)
ntee1==C Environment	−0.0371*	−0.0269
	(0.0212)	(0.0262)
ntee1==D Animal-Related	0.0404*	0.0270
	(0.0212)	(0.0283)
ntee1==E Health Care	−0.194***	−0.135***
	(0.0139)	(0.0221)
ntee1==F Mental Health	−0.170***	−0.137***
	(0.0211)	(0.0252)
ntee1==G Health Associations	−0.00208	0.0143
	(0.0264)	(0.0275)
ntee1==H Medical Research	0.112***	0.116***
	(0.0217)	(0.0283)
ntee1==I Crime & Legal-Related	−0.0357	−0.0252
	(0.0312)	(0.0312)
ntee1==J Employment	−0.0999***	−0.0736***
	(0.0222)	(0.0278)
ntee1==K Food, Agriculture, & Nutrition	−0.101***	−0.0387
	(0.0283)	(0.0370)
ntee1==L Housing & Shelter	−0.229***	−0.182***
	(0.0130)	(0.0234)
ntee1==M Public Safety	−0.114***	−0.0683*
	(0.0321)	(0.0354)
ntee1==N Recreation & Sports	−0.0868***	−0.0677***

(*Continued*)

Table 4. (*Continued*)

	1	2
	secratio	*secratio*
	(0.0145)	(0.0255)
ntee1==O Youth Development	−0.00735	0.0231
	(0.0175)	(0.0265)
ntee1==P Human Services	−0.0841***	−0.0555**
	(0.0154)	(0.0224)
ntee1==Q International, Foreign Affairs, & National Security	−0.00813	0.0209
	(0.0408)	(0.0273)
ntee1==R Civil Rights, Social Action, & Advocacy	0.0398	0.0713*
	(0.0501)	(0.0431)
ntee1==S Community Improvement	−0.146***	−0.121***
	(0.0212)	(0.0250)
ntee1==T Philanthropy, Voluntarism, & Grantmaking Foundations	0.0708***	0.0958***
	(0.0127)	(0.0214)
ntee1==U Science & Technology	−0.0450*	−0.0214
	(0.0248)	(0.0294)
ntee1==V Social Science	0.134***	0.0924**
	(0.0328)	(0.0437)
ntee1==W Public & Societal Benefit	−0.0900***	−0.0435
	(0.0267)	(0.0287)
ntee1==Y Mutual & Membership Benefit	0.188***	0.212***
	(0.0309)	(0.0316)
Constant	−0.614***	−0.510***
	(0.0340)	(0.0819)
Observations	186,000	186,000
R-squared	0.352	0.444

Note: Robust standard errors in parentheses. Data are from 1982–2007 SOI files. The dependent variable is the ratio of investments in securities to total investments. Column 1 is from a pooled OLS regression and column 2 is from a between-effects regression. State and year indicators are included but not reported.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

nor contradicted. Some past studies have examined the determinants of nonprofits' financial performance in areas apart from investments. Others have examined the reasons for nonprofits to hold endowments, and still others have examined investment returns in the special and well-studied class of endowments of colleges and universities. To our knowledge, however, this article and its part I companion are the first to systematically study nonprofits' investment returns. They address a simple yet important question: What are the determinants of the rates of return for charities? Important answers emerge, although they come with some caveats. Perhaps the most important is the fact that although we use an extensive data set on thousands of nonprofits of all types, we do not directly observe a nonprofit's investment rate of return. Rather, we calculate that rate based on variables that are reported annually to the

IRS. No doubt this approach encounters some error. Nevertheless, we are reasonably confident in the results it gives, because many of our regression results are consistent across different specifications of the rate of return.

Additional qualifications for this analysis apply to the limitations of our sample, which contains only 501(c)(3) organizations. Also, although data are available for almost all such organizations, the data set that we use represents only a fraction of all nonprofits and oversamples larger ones. We use this data set both because it covers so many and such a broad range of charities, and because it contains a number of variables that help us measure the rate of return. Moreover, public policy concerns are greater for larger than smaller organizations. Finally, those concerns are likely strongly related to the monies involved. The hundred largest endowments in 2007 (roughly those with endowments over $2 billion) accounted for more than 30 percent of total endowment funds among the 27,000 charities we studied in 2007. They also accounted for 14 percent of expenditures.

Our data set runs through 2007. As we write in February 2013, the stock market has recovered from the financial crisis, which (as one indicator) saw a maximum drop in the S&P 500 of 45 percent from its 2007 high. The effect on nonprofits, as on any other business, was both large and qualitatively unlike any slide in the post–World War II era. Data are not yet available, but we can speculate as to how different nonprofits were affected. We have shown that larger nonprofits are more likely to hold a larger fraction of their endowments in securities, and they are also probably more likely to hold alternative investments.[23] If alternative investments did worse than other investments through the crisis, as is widely suspected, then the monotone relationship between fund size and investment performance that we find up through 2007 will have eroded.

Bearing these cautions in mind, we have shed light on the critical area of nonprofit investment performance. However, our work represents just a beginning. For example, our analysis is silent about the implications for optimal policies on critical matters such as taxation, required payout rates, and standards for prudent investment policies. Finally, because virtually all nonprofits would prefer higher returns, our findings and those of studies to follow may help nonprofits manage their investments more effectively.

Notes

1. Comment and Jarrell (1995) examine the role of firm focus in for-profit firms. They identify focused firms in their domain as those less diversified in scope. They find a strong trend toward greater focus in their sample period (1978–89). Focused for-profit firms secure higher stock returns and engage far less in acquisitions and divestitures. Stock returns presumably reflect investment success, for example, in plants, projects, and acquisitions. If focus is also critical to investment success in nonprofits, this would suggest that a nonprofit would invest less well if it had to focus both on its mission (say, helping poor children) and its investment performance. In addition, nonprofits whose missions were closer to the investment field would lose less focus by attending to investments and would perform better with them.

2. Causality could flow in the opposite direction. Posit that for some unobservable reason, for example, a particularly skilled investments professional leading its investment committee, certain nonprofits have inherent advantages on investment results over others. Over time they will get larger, implying that size will be positively correlated with investment return.

3. However, enormous portfolios, as for the largest endowments, may suffer when their purchases or sales move market prices.

4. The median ratio of investment income to total income increases monotonically across the deciles of endowment size, from 0.425 percent for the smallest nonprofits to 5.79 percent for the largest nonprofits.

5. A major controversy erupted at Harvard University in 2003 when some alumni protested vociferously about paying executives at the in-house Harvard Management Company (HMC) compensation amounts of $25 million

and up. The critics suggested that individuals should be willing to manage the Harvard endowment for no more than $1 million per year. The contrary argument was that the large payments were bonuses based on performance, that given the size of Harvard's endowment it was important to get the best, and that these salaries were actually small when compared to what top Wall Street professionals were being paid. In future years, the compensation at HMC went down considerably, but still it was many-fold greater than the salary of the University's president or other top-paid salaries.

6. Jaskyte (2012) studies how nonprofit boards of directors affect organizational innovation, and Harrison and Murray (2012) find that the leadership of board chairs impacts board performance.

7. Initially we regress on the magnitude of management expenses and compensation, but in robustness checks below we will also include them as a fraction of total expenses. Executive compensation is taken from Form 990 line 25 and Form 990PF line 13, and defined (from the Form 990/990PF instructions) as "total compensation paid to officers, directors, trustees and key employees."

8. The age is measured from the date reported on the 990 when the charity was given its nonprofit status by the IRS. This variable is not available in the SOI dataset, but it is in the NCCS Core dataset, and so we use that dataset for this single variable (almost all of the charities in the SOI dataset are also in the Core dataset). Age is, of course, time-varying, but we also include a time-fixed effect, which makes the time-varying aspect wash away.

9. As an alternative control for risk, we also use the ratio of the value of an organization's investments in securities to its total assets. This ratio intends to measure an organization's risk tolerance by looking not at outcomes, but at strategies. Results using this measure of risk instead of the standard deviation of returns are not reported, but are qualitatively similar. Below, we will also consider the determinants of an organization's investment strategy measured by this ratio.

10. See Gregory and Ruhm (2011) for a similar argument against using a fixed-effects framework in a regression of wages on BMI (especially their footnote 11).

11. An alternative approach to these outliers is to use quantile regressions. We replicated Table 1 using median regressions, and the results were qualitatively the same to those reported here. The coefficients on net assets are about twice as large with median regressions as are the coefficients reported here in Table 1. The coefficients on management expenses are about the same size or smaller and become not significantly different from zero in columns five and six. The coefficients on the standard deviation of returns are smaller with median regressions, but still always significant at the 1 percent level. Our preferred regressions, presented here in Table 1, do not include the outliers because their values are suspect. Some observations have a calculated rate of return of more than 1,000 percent; we do not want to include these observations, even in a median regression, because a 1,000 percent rate of return is clearly incorrect. Another possible alternative is to focus only on those nonprofits whose beginning-of-year assets are above some threshold, say $1 million, on the hypothesis that the outliers are more likely to come from smaller organizations. This turns out not to be the case, however, and regressions that drop nonprofits with beginning-of-year assets lower than $1 million, surprisingly, do not get rid of a disproportionate number of outlier observations.

12. A similar report on health-care nonprofits (Commonfund Institute 2011c, Figure 2.3) does not find any correlation between size and returns.

13. We described this phenomenon in part I in conjunction with Table 3.

14. A back-of-the-envelope calculation suggests that this increase in management expenses would be far from cost-effective for a charity with median expenses and a median endowment. The median value of management and general expenses is $749,000. The median endowment is $10.7 million, so a 0.04 percent increase in the rate of return will generate only an extra $4,300. We also can not dismiss the possibility that management teams with higher investment returns due to chance get rewarded with higher salaries.

15. This is consistent with findings in Lerner et al. (2007), who find that older organizations earn higher returns for institutional investors, including endowments, pension funds, banks, etc.

16. For example, the 990PF does not have a category "other investment income," which is included in the 990 and used in our calculation of non-investment income. If foundations have such income but do not report it, our calculation of non-investment income will be too high and our rate of return calculation will be too low.

17. These results may be compared to those in Commonfund Institute (2011b), where operating charities are divided into three categories: cultural, religious, and social service. The mean values of rates of return suggest that religious charities do the best and social service charities do the worst, though the differences are quite small and the sample size is small (69 charities total).

18. Of the 72,295 observations listed as philanthropy, voluntarism, & grantmaking foundations, 15,129 observations (21 percent) are from organizations classified as public charities, not private foundations.

19. Examples of program service revenues include tuition for nonprofit schools or universities, admission fees for museums or concert halls, patient charges for hospitals, and interest income on credit union loans. Program service revenue can also come from governments; for example, Medicaid or Medicare payments for health services count as program service revenue and not government grants.

20. Though we have data going back to 1982, we begin at 1993 because a larger number of charities are present in the data set (11,000 versus 5,000).

21. Studies that rely on survey data from a smaller number of charities or foundations, including the Commonfund and NACUBO studies, have more information on asset allocation, including investments in alternative strategies. Lerner et al. (2008) find that the use of alternative investments by higher education endowments has grown from 1993–2005, that larger endowments and Ivy League schools are more likely to have a higher share of alternatives, and that the use of alternatives is correlated with higher returns. Many university endowments, particularly larger endowments, were hit hard by the financial tsunami that struck in 2008. Data that will not be available for a while will tell whether particular classes of assets contributed disproportionately to these poor returns, and whether over the long run these endowments still benefited from their different investment allocations.

22. Ramirez (2011) studies the determinants of the cash holdings of nonprofits.

23. Dimmock (2012) and Lerner et al. (2008) show that this is true for higher education endowments.

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