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The Investment Returns of Nonprofit Organizations:

Part I, Tales from 990 Forms

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Abstract

Nonprofit charities and foundations hold endowments and other investments. How do their investments perform? Some high-profile nonprofit endowments, importantly those of colleges and universities, have been studied before. This study is the first, to our knowledge, that looks at a large number of the diverse types of nonprofits. We investigate the determinants of investment performance using a large panel data set culled from the 990 forms nonprofits must file annually with the IRS. In this first part, we discuss our approach and the challenges of using these data to infer investment returns. The IRS data, though less than perfect, yield valuable measures of the investment returns of nonprofits. They reveal that some charities do consistently better in their investment returns than do others.

JEL codes: L31, G11

Keywords: Endowment; investment returns; public charity; private foundation

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Nonprofit organizations, including public charities and private foundations, are granted special tax-exempt status by the federal government to encourage their work promoting the public interest. Nonprofits range widely in size, from small local organizations with no paid employees to large nationwide organizations that employ thousands. Nonprofits also vary in the ways they secure revenues. Those revenues have four major components: private donations, government grants, program service revenue, and investment returns on financial assets.

We focus on investment returns, a source of revenue that is important for many nonprofits, but hardly all. For the 100 public charities with the largest endowments, the median ratio of endowment to expenditures was 7.50. A parallel calculation for those with the largest levels of expenditure in 2007 gives a median ratio of only 0.755, just one tenth as high. This disparity is to be expected, since the first selected on endowment size, and the second on expenditure, but the salient lesson is that charities differ dramatically in their reliance on endowments.

The largest endowments tend to belong to large private universities and private grant-making foundations. The largest endowment among all charities in 2007 was \$42 billion; the 20th largest was \$7.84 billion. When an organization's endowment is large, whether absolutely or relative to its expenditures, its rate of investment return is critical. Fortunately, the largest endowments, as has been suspected, appear to secure superior investment returns on a forward-looking basis. This happy picture, however, fails to carry over to many other types of charitable organizations, which on average achieve substantially lower investment returns for their beneficiaries, their employees and their donors than should be possible. This analysis seeks to

determine how well endowments perform. Its companion paper assesses the factors that affect the financial performance of U.S. nonprofits' investments.

These papers are completed in spring 2013. Concerns with the financial meltdown of 2008-09 have receded, and both the stock and bond markets have recovered strongly. In the meltdown period, press reports indicated that many nonprofit endowments suffered significantly, including many that had been highly successful in the past. Nonsystematic data indicate that some are still suffering in the aftermath. Unfortunately, our data source extends only through 2007, and data on nonprofit performance during the period starting with the 2008 financial plunge is not yet available.

A number of papers investigate the investment performance and portfolio management strategies of specific classes of nonprofits using survey data based on a subset of organizations of a specific type. Higher education institutions – many blessed with large endowments -- have received the most study. The National Association of College and University Business Officers (NACUBO) and the Commonfund Institute annually release a Study of Endowments documenting the performance of endowments of higher education institutions. The data for these studies were obtained from surveys given to endowment managers; the fiscal year 2011 study included data from 823 institutions. The Commonfund Institute also releases annual reports on investment performance for nonprofits in various categories, including healthcare, private foundations, and operating charities. Its 2011 foundations report includes data from 175 institutions; its 2011 healthcare institutions report includes 90 nonprofit entities. These survey-based studies find similar patterns in investment performance: the nonprofits with the largest endowments tended to get higher rates of return, and they also tended to invest a higher fraction of their portfolio in alternative investments.¹

Nonprofits are not subject to the same pressures on investment performance as are say mutual funds or corporations. Customers or shareholders cannot exit after a poor investment performance by selling their holdings. Karpoff and Rice (1989) examine the financial performance of firms established under the Alaska Native Claims Settlement Act of 1971. Although these firms were for-profit, the law prohibited their stock from being traded. Their study found that these firms performed relatively poorly. This suggests that nonprofit firms, also absent this pressure, may underperform as investors.²

Other papers study the source of nonprofits' endowments, as part of the burgeoning literature on charitable contributions. For example, Ritchie and Eastwood (2006) examine how the characteristics of the executives of nonprofits influence the magnitude and composition of contributions.

This is the first analysis that studies investment performance of nonprofits broadly, looking across institutions as diverse as colleges and universities, foundations, social service organizations, and hospitals. It uses a large data set based on the IRS forms that public charities and private foundations must submit annually.³ While these forms, unlike financial reports filed by some charities, do not explicitly state the organization's rate of return on financial assets, this rate can be inferred from the reported data. Indeed, such inferred returns may be more reliable than charities' self reports, which are surely computed inconsistently across charities, partly due to temptations for creative calculation. Donors do not like to contribute to organizations that do not invest their monies well. We employ several different ways to infer investment returns. As a consistency check on our inferred returns, we compare the values we compute to investment returns reported by major private universities on a Bloomberg survey to see how well they match.

Our data set has been widely used in studies of the nonprofit sector, but never to our knowledge to analyze investment returns.⁴ This data set offers many advantages. It covers a broad range of nonprofits, including every nonprofit with \$10 million or more in assets, as well as a random sample of smaller nonprofits. Furthermore, it provides considerable additional information about each nonprofit, enabling us to determine which factors promote better investment performance.

Section 1 below briefly describes nonprofit organizations in the US and their investment performance, as well as what past research has found relative to financial performance. Section 2 describes the data set used and provides some summary statistics. Section 3 details how the data were used to construct the nonprofit-specific rate of return. It also compares calculations here relative to those reported by some private universities. Section 4 concludes.

1. Nonprofit organizations and net assets

Nonprofit organizations are misleadingly named. For many such organizations revenues notably exceed expenditures. The defining trait of nonprofits is not that they do not make what many would describe as a profit. Rather, they face a non-distribution constraint: no party has a residual claim on any net income. If reserves build up, there are no shareholders, and executives are precluded from taking such income. In the United States, the provision of the tax code that grants most nonprofits their status is 501(c). This section lists 27 types of nonprofit organizations that are exempt from some federal income tax. 501(c)(3) organizations – by far the largest and best known group -- include various charitable, religious, and educational organizations. Other categories of nonprofits include labor unions (501(c)(5)), credit unions (501(c)(14)), and the National Railroad Retirement Investment Trust (a single organization that

gets its own code section: 501(c)(28)). All the organizations in our data qualify under the 501(c)(3) section.

These organizations are further divided by the IRS into two categories: "public charities" and "private foundations." (This division is defined in section 509(a).) This distinction is important for our analysis, since the two types of organizations file different IRS forms: public charities file Form 990, and private foundations file Form 990PF. A public charity typically receives a substantial fraction of its revenue from donors or grants and provides charitable services. A private foundation typically has a single major source of funding and makes grants to public charities for performing charitable work rather than directly performing such work itself.⁵ Notable public charities include the American Red Cross and the Salvation Army. Significant private foundations include the Bill and Melinda Gates Foundation and the Ford Foundation. Public charities account for nearly 90% of all 501(c)(3) organizations.⁶

When we use the terms "public charity" and "private foundation" (sometimes shortened to just "charity" and "foundation"), we are utilizing the IRS's classification of these organizations, i.e., whether they file a 990 or a 990PF. The name of an organization is irrelevant; many public charities have the word "foundation" in their name. More importantly, many public charities act largely like foundations, making grants to other organizations. Notably, United Way chapters are classified as charities, not foundations. These organizations are sometimes referred to as "public charity foundations" or "community foundations." Because they file the Form 990, they are classified here as charities.

Before considering investment performance, a logical fundamental question to ask is why nonprofits hold any endowment at all. Fisman and Hubbard (2003, 2005) provide an answer. They focus on production smoothing or precautionary savings, namely that endowment funds are

used to smooth the variability in other sources of funding, providing a relatively stable level of charitable services. They find evidence consistent with endowments being used as a precautionary savings device (2003) and find that the propensity to use funds in this way is curtailed in states with poor government oversight (2005). They interpret the last result as suggesting that nonprofit managers possibly use funds improperly for personal reasons.⁷ Helms and others (2005) note that higher education endowments serve the same purpose of precautionary savings, and they study how donor restrictions affect institutions' abilities to manage their endowment.

Precautionary savings, however, cannot account for a salient feature of nonprofit behavior. Of those with a major endowment, only a minority of them draws down their assets in a year, leaving aside the unusual years when investment returns are strongly negative. Of the nonprofits in our sample (data are described below) with over \$10 million in net assets at the beginning of tax year 1987, a relatively "flat" year in which the S&P 500 stock index (including dividends) rose 5.3%, fewer than 20% ended that tax year with the value of their net assets reduced. The median growth in the endowments that year was 6.9%. In 2000, when the S&P fell by 9.1%, only 40% of nonprofits in our sample with over \$10 million in net assets at the beginning of the year ended the year with their net assets reduced; the median endowment growth rate was 3.1%. In 2007, when the S&P 500 rose by 5.5%, about 37% of nonprofits in our sample with over \$10 million in net assets at the beginning of the year ended the year with their net assets reduced, and the median endowment growth rate was 2.9%. (Unfortunately, our data only extend through 2007, before the financial crisis.)

Looking across all the years in our data, it seems clear that many charities consider building their endowment to be a critical end unto itself. Foundations produce even more

Midas-like behavior. Foundations are penalized financially by the government if they do not expend at least 5% of their assets in a period. This turns out to be a near binding constraint, though in most years most foundations earned far more than 5%.⁸

Nonprofit executives, like any executives, are agents for other parties. An intriguing question is: who is the principal for whom these executives serve as agents? Is it the board, the recipients of charitable services, or some ill-defined future entity? Core and others (2006) examine the factors that lead endowment holdings to be excessive. They measure a nonprofit's excess endowment as being the residual from an estimated regression model of endowments on firm characteristics, and they look for correlations between this excess endowment and other firm characteristics.⁹ Gentry (2002) examines endowment holdings of nonprofit hospitals, which are allowed to issue tax-exempt bonds. He finds that hospitals, as we would expect, engage in tax arbitrage by having these bonds issued instead of spending funds from their endowment. As much as \$32.6 billion of the \$55.9 billion total tax-exempt liabilities of hospitals in 1996 could have been eliminated had hospitals used their endowments rather than issuing debt.¹⁰

The role of endowments for universities is much discussed. According to data from the NACUBO Endowment Study, in 2011, the ten largest university endowments held from \$7.0 billion to \$31.7 billion.¹¹ The average percentage increase of these ten endowments over the prior year was 19.0%, compared to the S&P 500 gain of 28.5%. By contrast, before the collapse of financial markets and subsequent recession, university endowments tended to dramatically outperform market indices. The average percentage increase from 2006 to 2007 on the ten largest university endowments was 21.3%, compared to the S&P 500 gain of 21.6%. In the following fiscal year, they had an average percentage increase of 3.4% compared to the S&P 500 decrease of 13.12%. The ten largest university endowments as of June 2002 grew an average of

84.3% by June 2008, while the S&P 500 grew by 46% over that period. These growth percentages are not the rates of return on investments, since they include the net change in donations and expenses plus investment income. However, it seems unlikely that the needs of these universities grew by 84.3% over six years. The best explanation is that endowment size itself is an important component of status or performance. To illustrate, many people know that Harvard has the largest endowment among universities. Few can name three distinguished professors there.

Considering only the self-reported rates of investment return, as of June 2011, the ten-year average annualized rate of return for college endowments larger than \$1 billion was 6.9%, whereas for those with less than \$25 million it was 4.9%.¹² These rates of return were achieved during a period where the S&P 500 price index earned merely a 0.76% per-year gain. (All of these endowments held some bonds, which paid less than stocks over this period.) The 7% rate of excess return for the largest endowments is impressive, dramatically above what most top equity managers can claim. This provides suggestive evidence supporting Hypothesis 1. But of course we would expect that the larger endowments were the ones that had grown most swiftly, just as we would if looking at heights of 16-year-old boys. Thus, a more statistically justified assessment would look at the 10 largest college endowments at some specified date and ask how they did over the next decade. Our specialized data set on university and college endowments does not provide this figure, but we examine this effect of size on a forward looking basis in our regression results in part two (see Table 3).

Hansmann (1990) poses the question "why do universities have endowments?" He concludes that their large endowments are difficult to rationalize from standard economic models. He considers several potential explanations, including intergenerational equity,

smoothing over lumpy income streams, the tax incentives of potential donors, the need for maintaining liquidity in the presence of income shocks, the preferences of donors or administrators, and the fact that universities have become accustomed to large endowments and have formed a building habit (though he does not provide a definitive answer to his question). Brown (1999) examines the investment strategy and performance of university endowments and finds considerable variation among endowments in both investment strategy and performance. The average endowment outperformed the market after adjusting for risk. However, the observed risk level is lower than expected. Lerner and others (2007) analyze the investment behavior and performance of institutional investors, of which endowments are but one small component. Looking over a period when institutional investors made significant gains, they find that endowments achieve investment returns that are 121% of the average for such investors. They infer that endowment managers are taking advantage of information they garner as inside investors to improve returns, and do this better than the average institutional investor.

Agency considerations also provide a somewhat different argument as to why college and other endowments are large and spending is constrained to enable them to grow on average. College presidents and many other leaders of nonprofits have fundraising as a major responsibility. Fundraising success is more convincingly and visibly demonstrated by a large and growing endowment than merely by large annual figures for donations. Thus, big endowments serve to signal administrator success, and as a readily visible scorecard they become an end in and of themselves.¹³ We focus not just on universities but on all charities. Our goal is to understand how effectively they invest, not to explain why so many of them have such large endowments. Alas, other researchers have not provided a satisfactory explanation of the large-endowment phenomenon. But whatever the explanation(s), it seems clear that it is highly

desirable for an organization – or at least those in charge of the organization -- to have its endowment grow rapidly.

High investment returns would be a very welcome contributor to such growth, and that is the subject of our analysis. Moreover, even for a charity that wished to maintain a constant endowment size, or constant size relative to expenditures, greater returns would be welcome, since they would afford a higher level of expenditure.

2. Data

We use data collected by the National Center for Charitable Statistics (NCCS) at the Urban Institute. These data come from the IRS forms 990 (for public charities) and 990PF (for private foundations) that nonprofits are required to file annually. We use data from 1982 through 2007, excluding 1984, when they were not collected. Unfortunately, this data set does not stretch beyond 2007, and thus misses the financial tsunami of 2008. Each charity in the data set is categorized according to the National Taxonomy of Exempt Entities (NTEE). Among the major groups are Arts, Culture and Humanities (A), Environment (C), Health Care (E), Medical Research (H), and Human Services (P). An online appendix describes the data in more detail.¹⁴

Our measure of the size of the organization's endowment is its reported net assets, or fund balances. While we will refer to this value as the organization's "endowment," it is important to note that it is not measuring an organization's endowment as conventionally understood. Net assets should include fully-funded endowments funds, but organizations may use these funds to informally finance loans, in which case the endowment may not be fully represented in net assets. Endowments are not separately reported in the Form 990.¹⁵ Nevertheless, we argue that net assets are the best measure that we have available for an organization's size.

Bowman et. al. (2012) analyze surpluses and endowments for public charities using 990 data. They argue that, although the 990 does not provide data on endowments, a pro forma definition of a charity's endowment can be created from the 990 data by summing the reported investments in securities and "other investments." As discussed in the appendix, two of our three measures of an organization's rate of return use these reported investments, while the third uses reported net assets.

Summary statistics from the entire sample are presented in Table 1, which reports the 25th, 50th, and 75th percentiles of certain variables, along with their means. All values are inflated or deflated by the CPI to 2007 dollars. The first two rows provide the beginning-of and end-of-year values for the net assets, or fund balances, listed by the organization.¹⁶ This is the sum of total assets minus total liabilities as reported on the nonprofit's balance sheet. The median value of net assets is \$10.2 million for nonprofits in this sample. The mean value, not surprisingly, is more than four times as high, illustrating the skew in endowment sizes. For all variables, the mean is much larger than the median and even larger than the 75th percentile, implying considerable skewness.

Our prime interest is investment returns. The next four rows represent four mutually exclusive categories of investment income: interest, dividends, other investment income (a small component of total income and one not present for most organizations and not asked of foundations) and net revenue from sale of assets (realized capital gains). This last category varies greatly across organizations. It has a higher mean value but a lower median value than either interest or dividends. Comparing the four types of investment income to the statistics for total income, in the following row, it can be seen that for most nonprofits these are modest sources of investment income.¹⁷

The next three rows present statistics on expenses. Management and general expenses is a category that includes payments for overall function and management. It includes the salaries and expenses of the organization's chief officer, expenses for board meetings, legal services, and office management, among others. It explicitly does *not* include either the direct conduct of program services or fundraising, both of which are tallied separately. Importantly for our purposes, it also includes investment expenses, which may be associated with investment returns. Unfortunately, investment expenses are not reported separately from the rest of management and general expenses. The median value for management and general expenses is about \$394,000. On average, management and general expenses represent about 10% of total expenses. The ratio of management and general expenses to total expenses tends to be somewhat larger for smaller organizations than for larger organizations, where size is measured by total expenses. The median value of the ratio for the lowest total expenditure decile is 0.21, and the median value for the highest expenditure decile is 0.11. Fundraising expenses (available only for public charities, not private foundations) are much smaller than management and general expenses. The majority of charities report zero fundraising expenses.

The next two rows are taken from the balance sheets of the Form 990s and Form 990PFs. Savings includes the sum of all interest bearing checking accounts, savings, and temporary cash investments. Investment securities include both publicly traded and non-publicly traded securities. The median and mean for securities is higher than that for savings. The last row represents the total compensation of officers, directors, trustees, and key employees.¹⁸ The median value for this variable is below \$10,000 while the mean is over \$250,000, indicating the skewness in the size of charities.

For some nonprofits, total annual operating expenditures are tiny relative to a vast endowment, whereas for others the endowment is a small value compared to how much they spend in a year. Figure 1 considers how the ratio of the endowment to total expenses varies for nonprofits of different size. Nonprofits are grouped into ten deciles according to their total incomes in 2007 dollars. Within each group, the height of the bar is the median value of the ratio of net assets to total expenses. As size increases (where size is measured by total income), this ratio decreases, as we would expect given that selection is on income.¹⁹

Figure 2 plots the same statistic: the ratio of net assets to expenses, but divides all organizations into deciles by size of net assets, that is, beginning-of-year fund balances. Here, the net asset/expense ratio roughly increases with nonprofit size up to the 6th decile, and then declines. This is a surprising result: A rise throughout would be expected if some nonprofits simply wanted to spend more than others (their net assets and their ratio would be lower), or if some nonprofits were more fortunate on investment performance (their net assets and ratios would be higher).²⁰ The decline beyond the 6th decile may be because large organizations' net assets are disproportionately composed of property, plant, and equipment and as such are not correlated with expenses. Substantial fixed assets likely characterize both hospitals and universities, categories of nonprofits that tend to have large endowments.

3. Measuring rates of return on investments and comparing with universities' reported rates of return

Forms 990 and 990PF do not ask for the rate of return on the filing nonprofit's investment portfolio. However, that is the prime quantity that we seek. Some nonprofits disclose their rate of return in a financial report, but we know of no source that collects the data from these reports.

Even if such reports were collected, a consistent methodology has significant advantages over self reports, given the potential for creative accounting and definition of variables.

To meet our objective, we create measures of the rate of return using the information in the 990 forms. To get a sense of how good these created measures are, we compare our calculated values with those reported by the nation's largest universities (by endowment size), since investment returns for this particular class of nonprofits are announced and regularly collected. The calculations of our three measures of the rate of return, labeled *ror1*, *ror2*, and *ror3*, are described in detail in an online appendix. Notably, only the first measure (*ror1*) uses reported net assets in its calculation; *ror2* and *ror3* use only investment assets reported on balance sheets.²¹

Summary statistics for the three definitions of rate of return are presented in Table 2. The first row presents the number of observations, and then the 25th percentile, median, 75th percentile, and mean values for *ror1*. The median rate of return is 4.74%, with an interquartile range of [1.07%, 10.5%]. However, the mean value is 219%. The mean value is so large because a small number of the calculated rates of return are very large and swamp the average calculation. In fact, the largest value is over 200,000%, which is clearly in error due to mistakes in the numbers on the federal forms. Our concern is not with obvious errors due to extreme outliers, but with the reliability of the data in general. Our calculated rates are vulnerable to inaccuracies in reported data values. Charities may not accurately record their net assets, may not use consistent accounting methods at the beginning and end of the year, or may simply make clerical errors.²² Beyond the concerns of errors and inconsistencies, our assumption about when expenses and revenues occur may give us values that are slightly off base.

We deal with the errors problem by trimming extreme values. Let sp_ret be the return on the S&P 500 index in a particular year, in percent. The final column in row 1 shows the fraction of observations that lie within the range $[-50\% + sp_ret, 50\% + sp_ret]$. Fewer than 6% of observations fall outside of this range. Those observations that perform either extremely well or extremely poorly compared to that year's average market performance according to our calculations are likely to be giving us erroneous values. The following row recalculates the summary statistics omitting the small fraction of observations lying outside that range. While the median and quartile values do not change much, the mean is quite a bit smaller and provides a more reasonable value.²³ In the regression results below, we will only use the observations that fall within this range. Regressions that include these extreme outliers are inconsistent.

The summary statistics for $ror2$ are systematically higher than those for $ror1$ by around one percentage point. As before, a small fraction of observations throw off the mean value of the rate of return. If we omit rate of return values less than $50\% + sp_ret$, or greater than $-50\% + sp_ret$, the mean as well as the quartiles values are much more in line with the previous calculations. On the other hand, $ror3$ seems to be significantly higher than the other values. This is likely due to the substitution of "other changes in net assets" for unrealized capital gains (as described in the appendix). For most charities these values are identical, but for some they differ, and these differences lead to a systematic overestimate of the rate of return. We thus proceed with caution when using $ror3$, but remain reasonably confident about the reliability of the other two measures of the rate of return.²⁴

Though the measures reflect internal consistency with each other, we also seek an external measure of validation. We can do this for the sample of the largest universities in the country. The rate of return on their endowments is widely reported. We use the reported rates of

return from a 2005 Bloomberg survey of the 25 largest higher-education endowments.²⁵ We compare these reported rates of return with the four definitions of rate of return generated from our data. We also compare the university's endowment size, as reported in the National Association of College and University Business Officers (NACUBO) Endowment Study, with the value of net assets reported in the 990. While the Bloomberg survey includes 25 universities, the 990 forms are only filed for non-governmental nonprofits, so the five public universities on the list (Texas, California, Texas A&M, Michigan, Virginia) are omitted from our analysis.²⁶

Table 3 presents these comparisons. The first two columns list the endowment size at the end and beginning of fiscal year 2004, as reported in the NACUBO survey. The next two columns are the values listed on the Form 990 for net assets or fund balances at the beginning and end of the year. The bottom of the table displays the correlation coefficient between the corresponding values from the NACUBO survey and the Form 990 for the beginning and end of the year. The first fact to note is that the NACUBO survey values are high. Indeed, for 15 out of 20 universities, the return reported to Bloomberg exceeds the three other calculated returns. Presumably, this indicates that universities are conducting their calculation for Bloomberg, and presumably other areas of public consumption, in the manner that puts their performance in the most favorable light.²⁷ It is reassuring that the correlation coefficients between the fund balances reported in the NACUBO survey and those reported on the Form 990 are quite high; both are over 99%.

There is a significant bias in the columns from the 990. In every case the fund balance listed in the 990 is higher than the endowment value as reported in the survey. As mentioned earlier, this is because our measure of net assets from the 990 form is not identical to a university's endowment. A university's net assets as listed on the 990 include the endowment as

well as funds in the general operating account. Funds in an operating account can also be invested and thereby earn investment income, but they are typically managed separately from the funds in the endowment. To the extent that we are interested in a nonprofit's overall investment performance, we should want to consider the return on the entire fund balance, including the endowment, the general operating account, and other funds. But to the extent that we want to compare our calculated rates of return to the ones in the survey, we should focus solely on the endowment. Unfortunately, the 990 does not separately list endowment funds and endowment investment income.²⁸

The next column lists the rate of return *on the endowment*, as reported in the Bloomberg survey. These rates of return are quite high compared to the summary statistics in Table 2. Taking the Bloomberg results as gospel and comparing the returns it reports to average annual rates of return on securities, universities tended to do well in their investments over the period of study.²⁹ The last three columns then present rates of return as calculated by the information in the 990s and described above. The values in all three columns are usually lower than the self-reported rates of return on the endowment. There are two explanations for this pattern: First, including all funds, and not just the endowment, injects a downward bias into the calculation. Operating funds are appropriately invested in short-term, liquid securities, hence in expectation earn significantly less than the endowment.³⁰ Again, we have no way to measure the return on just the endowment from the 990s. However, the correlation coefficients show that, for *ror1* and *ror3*, the calculated values of the rate of return are strongly positively correlated with the reported values. This correlation is not quite as high for *ror2*. Second, universities are surely exercising some flexibility in the way they report results to Bloomberg, and presumably take advantage by selecting a method that makes their returns look high. No doubt, some universities

take more advantage than others, which diminishes the correlations between our calculated returns and those reported to Bloomberg.

In summary, the results from these largest private universities suggest that our calculated rates of return provide a good indication of the relative investment performance of this class of nonprofits using any of a variety of measures. Absolute performance numbers will, of course, depend on which computational conventions one employs. The calculated values for both the rate of return and the fund balances do not fully align, but we did not expect them to, since we cannot separate the endowment from other funds, which can be a significant portion of the total. Whatever combination of funds is invested, our primary concern is with the overall investment performance of the nonprofits, not just of their endowments. Obviously, the smaller is an organization's endowment relative to other financial quantities (such as operating budget), the more important it is to include returns on all funds.³¹

Do some charities perform consistently better than others? To answer this question, we conduct a simple analysis. For each charity, we take the arithmetic mean of the calculated rate of return (here using *ror1*) in all odd-numbered years, and the arithmetic mean in all even-numbered years, and evaluate the correlation coefficient between these two values over all charities. It would be surprising if this correlation were not high because some organizations invest more effectively than others, focus more attention on securing high returns, etc.³²

As before, we drop outliers, those whose average rates of return as calculated end up higher than 50% or less than -50% plus the average growth rate in the S&P 500 for those years. This drops 11% of the charities. The correlation coefficient between average returns in odd-numbered years and average returns in even-numbered years is a robust 0.305.³³ This is statistically significant at the 99% confidence level. The significance remains even after

controlling for the age and endowment size of the organization. The key finding is that some nonprofits invest much more effectively than do others.¹

Some classes of charities, such as universities, may be much more focused on their endowments than others, in part because their endowments are more significant relative to other financial quantities. Thus we repeat this exercise looking within charity type for the 26 alphabetic charity categories. 25 out of 26 categories of charity show correlation coefficients that are significantly positive.³⁴ For these 25, the correlation coefficients range from a high of 0.6299 for Mutual and Membership Benefits charities to a low of 0.098 for Philanthropy, Voluntarism and Grantmaking foundations. Thus, among each charity type, some entities invest better than others.

4. Conclusion

We investigated the investment returns that are earned by nonprofit organizations in the United States. These returns can be very large relative to the organization's operating budget. This income supports public purposes, and as such is generally tax-exempt. These factors make this income a public policy concern.³⁵ Yet little is known about whether nonprofits invest effectively, and what characteristics of nonprofits lead them to earn higher returns. Data from annual IRS 990 forms, which are required and available for nearly all nonprofits, enable us to infer a nonprofit's rate of return on its investments. A comparison of our calculated rates of returns to rates or return reported by a subset of organizations (universities) demonstrates that our measures, despite imperfections, are informative. The data show that some charities invest more effectively than others. Part 2 of this study describes our hypotheses about what types of

¹ Our measure of investment performance is an organization's rate of return. In the regression results presented in Part II, we will control for risk by including the standard deviation of an organization's rate of return.

organizations can be expected to earn higher returns, and presents empirical results testing those hypotheses.

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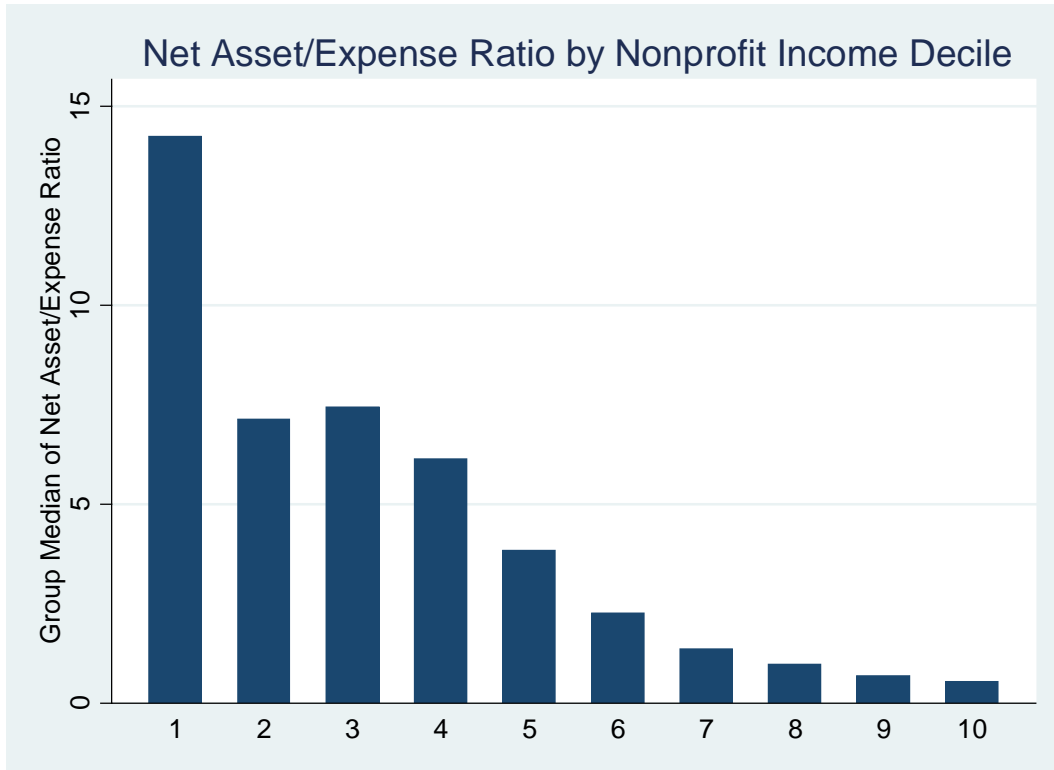
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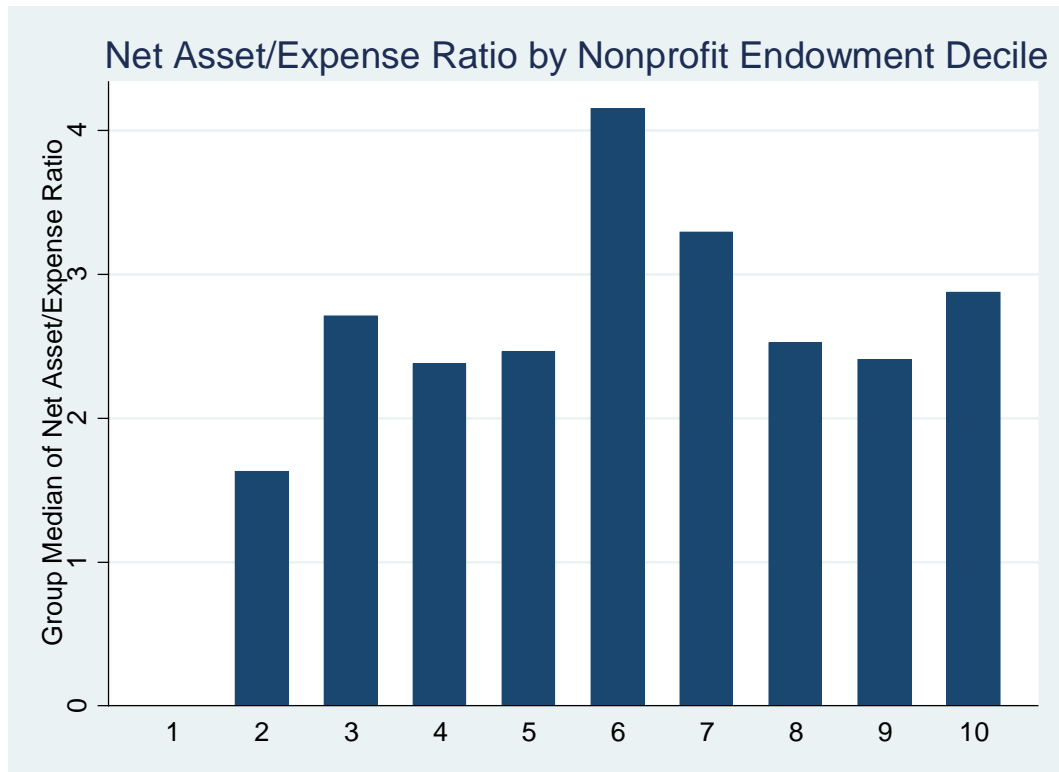
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Figure 1

Note: The groups in the *x*-axis are the deciles of the distribution of total incomes. Data are from 1982-2007.

Figure 2

Note: The groups in the x -axis are the deciles of the distribution of total beginning-of-year endowment. Data are from 1982-2007

Table 2 **Rate of Return Summary Statistics**

	N	p25	p50	p75	Mean	Percentage \in [-50% + <i>sp_ret</i> , 50% + <i>sp_ret</i>]
<i>ror1</i>	347798	1.07%	4.74%	10.5	219%	94.1%
<i>ror1</i> <i>ror1</i> \in [-50% + <i>sp_ret</i> , 50% + <i>sp_ret</i>]	327305	0.97%	4.39%	9.30%	5.99%	
<i>ror2</i>	64877	1.62%	5.91%	13.3%	38500%	92.8%
<i>ror2</i> <i>ror2</i> \in [-50% + <i>sp_ret</i> , 50% + <i>sp_ret</i>]	60191	1.47%	5.40%	11.4%	7.34%	
<i>ror3</i>	200528	2.84%	7.75%	15.3%	104700%	91.3%
<i>ror3</i> <i>ror3</i> \in [-50% + <i>sp_ret</i> , 50% + <i>sp_ret</i>]	183104	2.87%	7.34%	13.4%	8.94%	

Note: Data are from 1982-2007 SOI files. The definitions of rate of return (*ror1*, *ror2*, *ror3*) are given in the text.

Table 3 Comparison of Calculated and Reported Rates of Return

Institution	Endowment (000s) End of FY 2004 - NACUBO	Endowment (000s) Beginning of FY 2004 - NACUBO	Fund Bal (000s) End of FY 2004 - 990	Fund Bal (000s) Beginning of FY 2004 - 990	Rate of Return FY 2004 - Bloomberg	ror1	ror2	ror3
Harvard University	22143649	18849491	26924708	23107711	21.10%	19.80%	11.65%	21.70%
Yale University	12747150	11034600	13747084	12027930	19.40%	18.99%	19.83%	19.84%
Stanford University	9922000	8614000	13080612	11551151	18.00%	14.22%	16.27%	15.90%
Princeton University	9928200	8730100	10427330	9376207	16.50%	14.48%	15.82%	15.82%
MIT	5865212	5133613	7760024	6953253	18.10%	13.74%	15.32%	15.32%
Columbia University	4493085	4343151	6168916	5977224	16.90%	5.81%	13.03%	7.38%
University of Pennsylvania	4018660	3547473	5568519	5071427	16.90%	9.80%	13.21%	12.94%
Washington Univ.	4000823	3470072	5362749	4728606	18.20%	13.95%	18.89%	18.97%
Emory University	4535587	4019766	5155385	4872177	14.60%	8.66%	10.22%	10.05%
Northwestern University	3668405	3051167	4720140	4238724	19.20%	13.00%	16.06%	16.06%
University of Notre Dame	3095703	2573346	4046685	3436922	20.30%	18.90%	21.27%	22.20%

University of Chicago	3620728	3221851	4188840	3735249	16.60%	15.50%	16.64%	18.72%
Cornell University	3238350	2854771	5480422	5002938	16.10%	11.47%	15.34%	15.67%
Duke University	3313859	3017261	5082822	4471507	18.00%	14.00%	20.02%	21.51%
Rice University	3302455	2937649	3769197	3389700	17.20%	15.22%	16.86%	16.89%
Dartmouth College	2454293	2121183	3076295	2689220	18.60%	15.76%	16.43%	16.43%
Vanderbilt University	2296262	2019139	3559376	3134584	16.90%	13.03%	15.26%	16.00%
Univ. of Southern California	2399960	2113666	3565987	3174724	16.90%	10.01%	14.46%	13.10%
Johns Hopkins University	2055542	1714541	3207943	2974771	15.30%	8.83%	12.75%	12.82%
Brown University	1647295	1461327	2200244	1918913	16.30%	13.23%	16.23%	16.23%
Correlation of 990 data with reported survey data			0.9914	0.9909		0.7601	0.4581	0.6939

Note: Reported endowments are from the 2004 NACUBO Endowment Study. Reported rates of return are from the 2005 Bloomberg survey of higher education endowments. All other values are generated from data in the 2003 SOI files (for the fiscal year running from July 2003 to June 2004). Definitions of rate or return are given in the text.

Endnotes

¹ Although we do not use the NACUBO or Commonfund data in our paper, a number of papers have used them to study aspects of endowment performance. Dimmock (2012) finds that universities with higher background risk invest more heavily in fixed income and less in alternatives. Larger universities hold more risky assets than smaller universities. Brown et. al. (2010) find that while asset allocation differs across endowments, in the cross section it is unrelated to returns. Lerner et. al. (2008) find that endowment size, student quality, and the use of alternative investments are all positively correlated with high returns.

² Fama and Jensen (1985) provide a theoretical analysis of investment strategies for different types of firms, including nonprofits. They note that there are no residual claimants on the investment returns from nonprofits. They indicate, however, that given the consideration of future contributions, donors may in effect substitute for residual claimants, and that donor preferences will influence investment decisions. Though their principal focus is on direct capital investments, their analysis extends to – and they mention – nonprofit endowments.

³ Our data section describes the minor class of exceptions.

⁴ Bowman et. al. (2012) use the same data source to study nonprofit surplus (the analogue of profit).

⁵ The IRS summarizes the distinction between the two types of organizations here:

<http://www.irs.gov/Charities-&-Non-Profits/Charitable-Organizations/Life-Cycle-of-a-Public-Charity-Private-Foundation>.

⁶ Our data set over-represents large organizations. Therefore foundations, which are on average larger than charities, are over-represented in our data set.

⁷ They note, however, that there is a conflict between this need for precautionary savings and an agency problem created by giving managers control over the endowment. They look at nonprofit endowment data for correlations between endowment size and measures of government oversight, hypothesizing that there will be lower endowments where there is more oversight, due to less agency problems. They find no such correlation, however.

⁸ Satchell and Thorp (2007) determine the optimal dynamic consumption paths for charitable endowments, as a function of an organization's preferences over risk and intertemporal substitution. Bowman (2011) presents a model of a nonprofit's optimal financial decisions taking into account capacity and sustainability.

⁹ They find support for agency problems (a nonprofit manager may increase the organization's endowment beyond the optimal level and use excess funds for personal gain), consistent with Fisman and Hubbard (2005).

¹⁰ Black (1980) considers tax arbitrage within pension funds run by for-profit firms. Fraser and Jennings (2006) use a behavioral asset allocation model to argue that foundations and endowments are excessively conservative. Bowman (2002) studies the debt-issuing decisions of nonprofits.

¹¹ Select tables from this study are available publicly at:

http://www.nacubo.org/Research/NACUBO_Endowment_Study/Public_NCSE_Tables_.html.

¹² The size of university endowments is creating controversy, as some legislators are calling for reevaluation of some schools' nonprofit status in the presence of these large holdings. A group of Harvard University alumni have formed an organization, Harvard Alumni for Social Action, that prods the university to use some of its \$35 billion endowment towards more direct charitable work. A Massachusetts state representative has proposed a bill that would tax any university

endowments over \$1 billion at a 2.5% rate. Some federal legislators have suggested requiring universities to spend at least 5% of their endowments annually, as private foundations are required to (universities are classified as public charities and hence are not required to meet the 5% distribution rule). In September 2008 the Senate Finance Committee chaired a roundtable discussion of this issue. This is not the first time such a rule has been proposed. The Filer Commission on Private Philanthropy and Public Needs, which issued a far-reaching and detailed report on the nonprofit sector in 1977, recommended that all nonprofits, including universities, be subject to the 5% rule.

¹³ On signaling, see Spence (2002); on principal-agent problems, which provide the need for signaling, see Pratt and Zeckhauser (1985).

¹⁴ The online appendix is available here:

http://www.uncg.edu/bae/people/heutel/Papers/OnlineAppendix_HZ.pdf.

¹⁵ Both Form 990 and Form 990PF ask each organization for its "permanently restricted" net assets, but this variable is not coded into our data set.

¹⁶ While the Form 990 lists this value as "net assets or fund balances," we will also alternately refer to these holdings as the nonprofit's "endowment." Some nonprofits, notably universities, maintain an endowment that is only a part of their total fund balances; see the discussion in the following section.

¹⁷ Unrealized capital gains represent a fifth and major component of investment returns. Such gains are not reported directly on the revenue section of the 990. They are reported in a subsequent section throughout the sample period, but this variable is only coded into the data for later years in the sample, presenting a challenge that we discuss below.

¹⁸ A "key employee" is defined as "any person having responsibilities, powers, or influence similar to those of officers, directors, or trustees."

¹⁹ This same pattern holds when organizations are categorized by expenses rather than income.

²⁰ Mann-Whitney-Wilcoxon rank-sum tests show that the ratios in decile 6 are significantly greater than they are in any other decile, and that the ratios in decile 7 are significantly greater than those for all but decile 6.

²¹ These measures are thus more comparable to the pro forma endowment measures suggested by Bowman et. al. (2012).

²² Froelich et. al. (2000) study the adequacy and reliability of data from the Form 990. They find that the data from the most basic categories of revenues, expenses, and net assets are consistent with more detailed audit information.

²³ We experimented with different values for the boundaries of exclusion, being more conservative ($[-25\% + sp_ret, 25\% + sp_ret]$) and more liberal ($[-100\% + sp_ret, 100\% + sp_ret]$). Reducing the values for the bounds clearly increases the percentage of observations that we have to omit. It also has a small effect on the mean values of rates of return; the more observations that we include the higher is our calculated mean. However, the regression results presented below are fairly robust to different definitions of these bounds. We also look for something that characterizes charities with rates of return outside of these bounds by running a regression where the dependent variable is an indicator of whether the calculated rate of return is outside of $[-50\% + sp_ret, 50\% + sp_ret]$. Larger charities (measured by beginning-of-year net assets) are less likely to have excluded rates of return (though simply eliminating all observations with beginning-of-year net assets less than \$1 million or \$10 million does not substantively

reduce the fraction of observations with excluded rates of return). There are also some significant coefficients on charity type and year.

²⁴ Note the appropriate calculation of investment rates of return does not depend on when investment returns, say dividends or capital gains, are reaped during the year. That timing is all appropriately part of the ror calculation.

²⁵ The survey results are available here:

<http://www.bloomberg.com/apps/news?pid=10000103&sid=afIqiSrR2HUY>.

²⁶ FY 2004 runs from July 2003 to June 2004 and is the most recent year for which we have Form 990 data (from the 2003 SOI file). It is also the earliest year for which we could find reported endowment returns. The NACUBO survey is available from earlier years, but university-level endowment returns are not reported, only university-level endowment size and aggregate summary statistics of rates of return.

²⁷ We are more confident that they report honestly on the required form to the IRS than to Bloomberg.

²⁸ Most universities and only some nonprofits release financial reports that may indicate the return on the endowment, but these are not coded into the dataset. We met with employees of Harvard University's Office of the Controller (formerly Office of Financial Services) to determine, for Harvard at least, if endowment information can be separately identified using only the 990 information. They indicated that this was not the case.

²⁹ These results are before the 2008 financial crisis, where large university endowments are widely perceived to have done even more poorly than the hard-hit market average.

³⁰ Operating funds are usually small but not insubstantial relative to the endowment. At Harvard University, for example, the general operating account was about 18% of the value of the

endowment at the end of both the 2006 and 2007 fiscal years, according to its financial report. During the financial crisis Harvard was criticized for investing much too much of its operating funds in its endowment (Healy 2009).

³¹ We would like to compare apples to apples – what does nonprofit A earn on its endowment and what does nonprofit B earn on its endowment. Consider a situation where A has an operating budget that is just 1% of its endowment, and B has one that is 50% of its endowment. Suppose A earns 12% on its endowment and 4% on its operating budget; B earns 13% on its endowment and 5% on its operating budget. Though B is earning higher returns, a calculation like ours that cannot differentiate an endowment will show A earning a higher return.

³² We thank Larry Summers for suggesting this test. Note that if charities overreport ending values for their endowments in a year, that will overestimate returns for that year and underestimate it for the following year, tending to produce a negative correlation between odd and even numbered years.

³³ Note, there is a bias to underestimate this correlation given that end-of-year values are not reported precisely. Then an overstated value for year one, will lead to greater than true reported returns in year one and less than true reported returns in year two. Hence the correlation between odd and even years will be biased negatively.

³⁴ The exception is Crime- and Legal-Related nonprofits.

³⁵ The size of this tax preference is uncertain, since the exemption of nonprofit income from taxation is not classified as a tax expenditure by the Joint Committee on Taxation (Joint Committee on Taxation, 2008, p. 42).