Online Appendix

Data Description

Public charities can file either the Form 990 or, if they have gross receipts less than $100,000 and net assets less than $250,000, the Form 990 EZ. Private foundations must file the Form 990 PF. Religious organizations and those with less than $25,000 in gross receipts are not required to file at all.[i] To avoid selection problems, given that only some religious organizations choose to file, they are eliminated from the sample.[ii] The Form 990 includes information on various categories of revenues, including private donations, government grants and program service revenue, and of expenses, including management and fundraising expenses. It also contains a balance sheet, listing beginning-of-year and end-of-year values for cash, investment securities, land, and other assets and liabilities.

The NCCS assembles several data sets from these IRS forms. Its "Core" files contain observations from almost every nonprofit that files in a given year, providing upwards of 300,000 observations per year. However, the Core files include only a limited number of variables for each observation. Instead of the Core files, we use the IRS Statistics of Income (SOI) files, which contain fewer observations of nonprofits but more variables per observation. The subset of charities chosen to be included in the SOI file is not random; they include every nonprofit with $10 million or more in assets, and a random sample of all other nonprofits. We choose to use this data set for two reasons. First, the larger number of variables included allows us to use more detailed information to create a more accurate measure of the rate of return on a nonprofit's investments. Second, we believe that investment performance is much

more important for larger nonprofits. Thus, we have a complete sample for them, albeit not for their smaller brethren.

The number of nonprofits per year ranges from a low of 3,053 in 1985 to a high of 27,803 in 2007. The total number of observations in the data set is 394,964, and the total number of nonprofits represented is 49,468 (30,409 charities and 19,059 foundations). Foundations do not appear in the data set until 1995 and are missing from 1997 entirely. The median number of years that a charity is in the panel is seven, the 25th and 75th percentile values of this statistic are three years and 15 years, respectively (686 charities, or 2.2% of the total, are in the panel for all 25 years). For foundations, the median number of years appearing in the data set is five, and the 25th and 75th percentiles are two and nine, respectively (890 foundations, 4.7% of the total, are in the panel for all 12 years) [iii] We use data from Form 990 and 990PF only, not Form 990 EZ. Form 990 EZ does not have enough variables for us to construct a measure of the rate of return; few charities in the SOI data use the 990 EZ anyways (652 nonprofits in 2003, compared to 13,633 filing the 990). Foundations report revenues and expenses differently in their Form 990PF than do charities in the 990.

Calculation of Rates of Return

If nonprofits did nothing with their funds other than sit and watch them grow, then calculating the rate of return would require a simple comparison of the beginning- and end-of-year fund balances. Fortunately for those who are served by nonprofits, but unfortunately for our research agenda, nonprofits both receive and spend significant amounts of money during the year. For many nonprofits, annual revenues and/or expenses dwarf the value of the fund

balance. In fact, the median value of the ratio of total expenses to net assets is 0.45, and for 36% of observations this ratio exceeds one. And 90% of charities had outflows as a percentage of assets in excess of 4%. Obviously, we must account for inflows and outflows in calculating rates of return for charities.

Thus we need the values of expenses and income for each year for each charity. Both of these values, fortunately, are reported in the 990s and in the 990PFs. However, the value for total revenue includes revenue from investments: interest, dividends, and realized capital gains. Thus, what we really want is total income from all other sources, what we call "non-investment income." This is calculated as total revenues minus the sum of interest income, dividend income, capital gains income, and other investment income (although this last category is not reported in the 990PF).

Knowing expenses and non-investment income is not enough to determine the rate of return. We also need to know when these expenses were incurred and when revenues were received. Unfortunately, this information is not reported. So, we make the assumption that all revenues and expenses occur evenly spaced throughout the year at the middle of each month. Then, our first measure of rate of return, *ror1*, is calculated based upon this implied cash flow.[iv] We also experimented with alternative assumptions about when non-investment income and expenses were realized, including at the beginning of the year or in the middle of the year. The calculated rates of return varied little from the rates under the mid-month assumption.[v]

To obtain sensible values for rate of return under these assumptions, we must engage in some data cleaning. A small percentage of charities list negative or zero values for net assets at the beginning- or end-of-year. These numbers could conceivably reflect debts, or they may

represent clerical errors. If the first, they are not of interest, since our concern is with charities with significant endowments, which would require positive values at the beginning and end of the year. If an error, they should be eliminated. This leads us to drop these observations (28,397 observations).[vi] Similarly, if total expenditures or total income (not including capital losses) is listed as negative, then this will prevent our rate of return calculations from being correct, so we drop those observations as well (5,457 observations).[vii] We drop those observations for which non-investment income is reported as negative, since this is evidence of clerical error. (13,312 observations).[viii] In total, 11.9% of observations are dropped. By any measure, these dropped observations come from charities that are much smaller on average than the rest of our sample.

This definition of the rate of return on investments only uses data on net assets, income and expenses, available in Part 1 of the Form 990 and the Form 990PF. However, the forms also contain a balance sheet that provides more detailed information on a nonprofit's assets. Specifically, it contains the beginning-of-year and end-of-year values of savings and temporary cash investments, investments in securities, investments in land, buildings and equipment, and other investments. The sum of these amounts tells how much of a nonprofit's gross assets are actually investment assets rather than operating funds. From these gross assets we subtract investment liabilities, which consist of mortgages, other notes payable, and those items listed under "other liabilities." This sum gives us a measure of net investment assets. However, the investment liabilities are not coded into the data for the private foundations, and thus we cannot subtract them out to calculate net investment assets. While the end-of-year values are coded into the SOI files for these variables, the beginning-of-year values are not, except for

2003 onwards. It is the beginning-of-year values that we want to use as our starting values in calculating the rate of return, so we take advantage of the panel nature of the dataset to construct a beginning-of-year value for each organization by looking at its tax return from the previous year. Of course, this means that we only have observations for these variables for organizations that appear in both year t and year $t-1$. Furthermore, these balance sheet variables are not available for 1998. We call the sum of these four beginning-of-year assets minus liabilities *investment assets.* We have 293,257 observations for this variable.

Given the total amount of net investment assets at the beginning of the year, to calculate the rate of return we also need the total amount of investment income. The reported investment income is the sum of interest, dividends, realized capital gains, and "other" investment income, but it does not include unrealized capital gains. Unrealized capital gains are not reported on the 990PF. They are reported on the 990 but only coded into the dataset for years 1997 and beyond. Furthermore, even in these years many charities did not report this variable. Our second measure of rate of return is thus restricted to this smaller number of observations. It is

$$ror2 = (total\_income - noninvinc + unrealized\_gains)/investment\_assets.$$

Although unrealized capital gains are not reported most years, another variable on both forms is available to use as a stand-in for these gains. This is the value for "other changes in net assets or fund balances," which accounts for the disparity between net assets at the beginning and end of the year that is not explained by income minus expenditures. It includes unrealized capital gains, but may also include other changes, such as adjustments of earlier years' activity. For our third measure of the rate of return, we use this value to stand in for these capital gains,

giving us a much higher number of observations than in *ror2*. We feel that this third measure

incorporates a good proxy for unrealized gains, and we get validation for this assumption by

comparing these two values (reported unrealized capital gains and "other changes in net assets

or fund balances") among the observations for which we do observe both values. Of these

119,234 observations, 47.9% have identical values for the two variables, and in general

differences between the two measures are tiny.[ix] Thus, we conclude that "other changes"

appropriately measures unrealized capital gains for those observations where we do not

observe unrealized capital gains. This leads to our third measure of the rate of return:

$$ror3 = (total\_income - noninvinc + other\_changes\_assets)/investment\_assets.$$

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[i] Although organizations with "exclusively religious activities," including congregations and

mission societies, are not required to file, religious organizations that receive a majority of their

revenue from serving the general public are required to file Form 990. These include religious

colleges and universities, health organizations (such as the Sisters of Mercy hospital chain) and

human services organizations (such as Lutheran Social Services).

[ii] This removes 1.87% of all observations.

[iii] The charities that are in the data set for more years are more likely to be larger. The median

value of fund balances for charities in the data set for less than four years is $1.45 million (in

2007 dollars), whereas the median value for charities in the data set for more than 18 years is $32

million. Of the observations of charities with more than $10 million in net assets, 50% are in the

data set for at least 17 years, whereas only 23% of charities with net assets less than $10 million

are in the data set for so long.

[iv] Formally, this amounts to solving a nonlinear equation for a rate of return that sets the net present value of the account equal to zero, where the opening balance is negative, the closing balance is positive, and net non-investment income is applied monthly.

[v] The larger are expenses and non-investment income relative to investment income, the greater will be the variation in rates depending on the timing assumption. Substantial disparities only occur if both non-investment income and expenses are large, and one comes in early in the year, and the other late. We are overestimating rates of return for entities that spend late in the year, or that receive income early in the year, and vice versa.

[vi] These charities tended to have small endowments anyway. For nonprofits with non-positive beginning-of-year endowments, their median for end-of-year endowment size, looking at values that were not negative, was just $937,000, though the 95th percentile was $52.7 million. We drop only those observations with suspect data, not every observation for that charity throughout the panel.

[vii] These charities do not necessarily have small endowments. Their 95th percentile for end-of-year endowment size was $164 million.

[viii] These charities also do not necessarily have small endowments. Their 95th percentile for end-of-year endowment size was $116 million.

[ix] The median of the absolute value of the percentage difference between the two reported values is 0.00857%. The median of the ratio of reported unrealized capital gains to reported "other changes in net assets" is 1, as is the 95th percentile of that ratio.