

What Determines Nonprofit Net Assets?

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“Charities do need a minimum level of reserves. That’s just prudent business practice.”
- H. Art Taylor, President of the BBB Wise Giving Alliance, *New York Times*, Nov. 12, 2007

“The point of giving is to help the community and those in need and not help a charity build an even bigger bankroll.”
- Max Baucus, chairman, and Charles Grassley, ranking member, Senate Finance Committee, *New York Times*, Nov. 12, 2007

Introduction

Nonprofit organizations encompass large segments of certain visible industry sectors, such as education, health care, and the arts. The programmatic areas of nonprofits, however, do not define what makes the sector unique in comparison to for-profit business activities. The defining characteristic of the nonprofit organization is the nondistribution constraint, or “the absence of stock or other indicia of ownership that give their owners a simultaneous share in both profits and control” (Hansmann 1980).

Just as with a for-profit entity, any annual excess of revenues over expenses that a nonprofit earns will result in a “profit” (often referred to as a “change in net assets” in nonprofit nomenclature) that is tax-free itself, and may even have been the result in part of tax deductible contributions from donors. While not-for-profits are not forbidden from earning a profit in any year of operation, it is expected that these profits will provide future services for which the organization was formed (Hansmann 1980), thereby benefiting society eventually if not immediately. It is unrealistic to assume (and research does not support), however, that such profits occur only due to unforeseen donor generosity or poor forecasting skills of the organization (Chang and Tuckman 1990). Rather, operating profits may be a goal of management in an effort to expand the organization, or to protect the organization from revenue shocks.

This paper analyzes the determinants of net assets (accumulated surpluses) by not-for-profit public charities with an emphasis on the role of uncertainty within the context of distinct nonprofit financial reporting requirements. Nonprofits have a unique financial reporting model that the limited existing literature on net assets has ignored or minimized. Donors have the ability to restrict how nonprofits may use donated resources, and these donor wishes supercede the desires of management (assuming the donation is accepted by the organization). Reporting on these donor-imposed restrictions is one of the central characteristics of nonprofit financial accounting.

This paper adds to the existing literature on nonprofit net assets in two distinct and important areas. First, this paper empirically tests whether differentiating between categories of net assets lends insight into the levels of resources retained by nonprofit organizations. If nonprofits in fact distinguish between restricted and unrestricted resources, prior analyses that only analyzed total net assets may have overlooked an important aspect in understanding the role of net assets within the nonprofit sector. Prior research has assumed that total net assets defines nonprofit slack, whereas this paper tests whether that definition is too broad since it includes resources that a nonprofit is not able to spend.

In addition, this analysis uses a large panel data set with a sample that covers all subsectors of nonprofits organizations. The data include detailed financial information at an organization level that were unavailable until recently. Some of the current analyses are tested with summary data or cross-sectional data only, limiting the ability to draw conclusions or establish causality; the existing literature based on panel data used information that lacked the detail necessary to accomplish the more nuanced treatment of nonprofit net assets.

This paper proceeds as follows: the first section outlines the policy relevance of

analyzing nonprofit net assets; the second section outlines the literature on the economic theories of nonprofits, theories of nonprofit behavior, and how these theories relate to surplus accumulation; the third section presents a theoretical model of nonprofit net assets, related specifically to the role of uncertainty in understanding net asset accumulation behavior; the fourth section describes the data; the fifth section presents an empirical model based on the model derived in section three; results are presented, and conclusions are drawn in the final section.

Policy Relevance of Understanding Nonprofit Net Assets

No clear public policy exists regarding nonprofit net assets, despite the large public investment in the sector. This lack of consensus reveals itself in laws and regulations (or the lack thereof). For example, the Internal Revenue Service has no regulations as to how much a nonprofit may keep and for how long. According to the United States Treasury Department's Statistics of Income, public charities had accumulated over \$2 trillion in assets and over \$1.2 trillion in total net assets by 2004; additionally, these public charities had annual revenues of over \$1.1 trillion. These assets, total net assets, and revenues are acquired with public subsidies and these subsidies may be questioned when it is perceived that nonprofits are more concerned with retaining resources rather than providing services. From a public policy perspective, nonprofit net assets are important for at least three reasons: donors receive current tax benefits, yet the benefits society derives from these nonprofit net assets are unknown and in the future; nonprofit net assets are increasingly concentrated within the sector; and, finally, to the extent that net assets may financially strengthen organizations, net assets bear on the implementation of government policies by nonprofits. Each of these policy relevancies is discussed in further detail.

Current Tax Benefits for Unclear Future Benefits

Charitable organizations – classified as 501(c)(3) organizations under the Internal Revenue Service tax code - are exempt from federal, state, and local income tax liabilities, contributions made by donors to these organizations are deductible for income tax purposes, and many organizations can borrow using tax-free or advantaged debt (which lowers the borrowing cost to the organization through a public subsidy). Charitable contributions to 501(c)(3) organizations from individuals reached nearly \$250 billion in 2004; this money represents a direct subsidy to public charities (in the form of the cash or pledge) as well as an indirect subsidy from government since donations reduce tax receipts because of the deductibility of the donations from the donor's income taxes (federal, state, and local).¹ According to the US Treasury Department, these charitable tax deductions by taxpayers reduced federal income tax revenue ("tax expenditures") by \$40 billion in 2005, representing a substantial annual public subsidy to nonprofit organizations. This figure does not include foregone tax revenues to state and local governments as well. Related specifically to net assets, the foregone federal tax revenue from exempting endowment income just in higher education institutions alone is estimated at approximately \$18 billion in 2007 (Waldeck 2008).

The foregone tax revenue reduces resources available for governments for other public purposes. The intent of the tax deduction is to spur giving to charities so that these organizations can address social needs, either replacing or augmenting public tax revenues for this purpose. When a nonprofit organization retains donations rather than spending them immediately on addressing these societal needs, a situation occurs in which a donor (a taxpayer) receives an immediate benefit in the form of reduced income tax liability at the expense of government, yet

the offsetting benefit to government (increased nonprofit spending on a social need) is deferred to the future.

Donors also have the ability to restrict the usage of donations. This restriction might require the nonprofit to engage in some particular activity, or allow a certain amount of time to pass before gaining access to a donation, or even forbidding the organization from using the donation and limiting the available resources to earnings generated by the donation. In this respect, foregone benefits to society are not at the behest of the nonprofit organization, but rather the result of donor intent.

Concentration of Resources within Sector

Public confidence in nonprofit performance, efficiency, and financial management has eroded in recent years (Light 2008), focusing Congressional attention on the sector. The level of nonprofit resource retention in particular has sparked repeated Congressional inquiry in the past three years alone. In 2005, the House Ways and Means Committee held hearings to question whether certain types of nonprofit organizations, especially nonprofit hospitals, warranted tax exemption. In 2006, the Senate Finance Committee held similar hearings focusing on the increase in college tuition despite the accumulation of reserves by universities. One recommendation from the hearing was that universities be subject to a minimum payout requirement similar to the law governing private foundations. In February 2008, the Higher Education Act reauthorization was passed in the House of Representatives requiring universities to spend at least five percent of their accumulated net assets annually in ways that would reduce students' costs of attending universities. In September 2008, the Senate Finance Committee again held hearings focused on college endowment levels and the affordability of higher

education.

Nonprofit resource accumulation may not be entirely the result of organizational calculus to retain as much as possible. Since donors can dictate whether a nonprofit is to retain a donation (restricted) or whether the nonprofit is allowed to utilize it in the current period (unrestricted), thus reflecting the desires of donors to restrict donations in such a way that limits how nonprofits can use them, if ever. Still, there may be little public differentiation between a permanently restricted endowment that cannot be spent by an organization and unrestricted resources. Irvin (2007) highlights that well-publicized growth in endowments among, for example, universities and foundations may make the public distrustful of the nonprofit sector as a whole. This distrust may manifest itself in fewer donations from the public or, as Irvin (2007) points out, additional regulatory requirements. If net assets, for example, are concentrated within a few particular nonprofit subsectors, such overarching requirements may draw resources from the other subsectors away from program provision and towards regulatory compliance that is ill-suited for the sector as a whole.

Role of Nonprofits in Government Policies

Governments often engage nonprofits when implementing programs. For example, Salamon (1985) points out that 60 percent of human service providers operating in the 1980s were founded after 1960, and James (1987) shows that the War on Poverty inaugurated by the federal government during the 1960s used nonprofits as agents of these new public programs. At all levels of governments, the government itself rarely provides direct social services to individuals; rather, these services are often contracted out and nonprofits receive many of these contracts (DeVita 1999). While government policies are the focus of much deserved research,

research on the capacity of nonprofit organizations is more rare. Whether nonprofit organizations are financially strong or weak may affect the effectiveness of government social policy. If a financial shock occurs and a nonprofit has no reserves to buffer the shock, then a public program may fail not because the policy was ill-conceived, but because the service provider was unstable. Net assets may help nonprofits more effectively implement desired public policies. The role of net assets, in this context, is not just about nonprofit organizational and managerial capabilities and decisions; it is also about how nonprofit financial position can affect the will of the citizenry (through government programs) to effectively implement policies and programs.

In a similar vein, the role of government contracting with nonprofits affects nonprofit finances. Contracting obviously transfers money from the public to the nonprofit sector: the government purchases particular goods and services through the nonprofit sector. As public services increasingly have been contracted to nonprofits in the past twenty years, governments have implemented more reporting requirements for nonprofits and less flexibility in the services they can provide. In this respect, net assets may serve to not only buffer nonprofits from macroeconomic financial shocks, but also from delays in processing payments from governments, submitting contract vouchers to governments, etc.²

To the extent that government contracts have become more inflexible, both nonprofit finances and the effectiveness of public policies are affected. Wilson (1989) argues that government bureaucracies need more flexibility and incentives so that workers can adjust programs to realities on the ground that are not known to policymakers. Wilson (1989) believes that government agencies' inability to retain surpluses that they might generate through their own initiatives is a political constraint. In a similar fashion, nonprofits that manage to earn a surplus on a government contract usually are not permitted to keep the surplus. At best, then, a

government contract will breakeven for a nonprofit; at worst, the nonprofit will lose money on the contract. Net assets by the nonprofit may permit it to actually assume such government contracts in the first place, since the contract itself offers no financial incentive nor does it offer any buffer from future uncertainties.

Literature on Theories of Existence of Nonprofit Organizations, Their Behavior, and Reasons for Existence of Positive Net Assets

Theories of Nonprofit Organizations

Chang and Tuckman (1990) first documented that nonprofits accumulated surpluses, and questioned the prevailing assumption that nonprofits sought to maximize some programmatic output while constrained by breakeven operations. The dominant theories about the economic role of nonprofit organizations prior to this article provide little explanation for the demonstrable reality of net asset accumulation within the sector. Instead, they either overlook the potential role of positive net asset levels in explaining certain nonprofit behavior, or they assume that the “nondistribution constraint” implies breakeven financial operations. In this section, I first review two economic theories of nonprofit organizations and how they relate to the accumulation of net assets. These two important theoretical arguments offer little explanation for the existence of positive net assets within nonprofits. In the following section, I turn to competing behavioral theories of nonprofits, which are also relatively silent about why nonprofits might accumulate net assets.

Public Goods Theory of Nonprofits and the Relationship to the Accumulation of Net Assets

The first economic theory of the role of nonprofits is based on public goods theory. Weisbrod (1975) hypothesizes that nonprofits are the private suppliers of public goods. In a

model where government provides public goods based on the preferences of the median voter, unsatisfied demand for public goods still exists above that demanded by the median voter. In this theory, nonprofits emerge to provide these public goods, and individuals with preferences above those of the median voter provide nonprofits with financial support to meet their own desired level of public goods. Donations, according to this theory, may be best thought of as voluntary taxation to provide additional public goods for the general population, and the nonprofit sector may be thought of as responding to the demand heterogeneity of the population. Demand for nonprofit output changes as the income of the median voter changes in this understanding of nonprofit organizations. Kingma (1997) outlines the theoretical and empirical analyses that followed Weisbrod's (1975) seminal work, including the limitations of the theory itself in explaining the nonprofit sector.

The "Weisbrod theory" of nonprofits is silent about the actual financial operations of the sector. Presumably, citizens would provide nonprofits with the level of donations necessary to attain some level of output above and beyond the government provided amount. Nonprofits might not retain any resources under this theory since their output would vary as donor demand varied over time. In this sense, net assets would be unnecessary since reductions in donations would indicate that lower levels of services were sought by those above the median voter, implying that program services ought to be reduced to account for this change in demand.

Contracts Failure (of For-Profits) Theory of Nonprofits and the Relationship to the Accumulation of Net Assets

In an early article about hospitals' tax-status, Arrow (1963) raises the possibility that nonprofits may exist to overcome information asymmetries in the marketplace. Hansmann (1980) further expands this insight into a contracts failure theory of the nonprofit sector. This

theory is premised on the existence of information asymmetries between for-profit service providers and clients. In purchasing certain types of services (especially those that are complex), such as health care or education, clients feel unable to evaluate the goods or services being offered. While a for-profit firm might have an incentive to offer low-quality services in order to minimize costs (and, by extension, maximize profits), nonprofits would not have such an incentive because they are forbidden from distributing profits to owners by the “nondistribution constraint.” Hence, in these complex service situations, nonprofit offerings are more likely to match the quality and type of service expected by clients.³ Even donors can be viewed as purchasers of nonprofit goods since they can be thought of as buying either public goods or buying services for a third party. Overall, then, nonprofits are viewed as more trustworthy due to the lack of ownership and the nondistribution constraint than for-profits, and this trustworthiness overcomes the contract failure between for-profits and their clients. Steinberg and Gray (1993) provide a review of the literature that has emerged from this contract theory, has empirically tested this theory, and also outlines the shortcomings of the theory.

In relation to net assets, the contract failure theory is relatively silent about the role of financial operations of nonprofits. Hansmann (1980) notes that the theory is premised on the notion that nonprofits and their managers do not benefit from organizational wealth. To the extent this assumption is violated, clients can be no more certain that a nonprofit is a more trustworthy service provider than a for-profit. Because of this and to retain client and public trust, Hansmann (1980) reasons that nonprofits are expected to devote any excess earnings to additional nonprofit output, either in the current time period or in the future.

Behavior of Nonprofit Organizations

While the public good and contract failure theories seek to explain why nonprofits exist, theories of nonprofit behavior seek to explain nonprofit objectives, the motivations of managers, and how these objectives and motivations may differ from their for-profit counterparts. Four behavioral theories of nonprofit organizations are outlined in greater detail. These behavioral theories do not generally address the actual accumulation of net assets by nonprofits; all seem to provide some insight, though, when the theories are extended and applied to this particular phenomenon.

Maximizing Behavior and the Relationship to the Accumulation of Net Assets

In the for-profit sector, firms are usually assumed to maximize profits. Modeling nonprofit behavior is difficult due to the lack of a clear metric, such as profit, to maximize. Authors have overcome this by assuming that other particular preferences are maximized. For example, early work by Newhouse (1970), Feldstein (1971), and Lee (1971) each offers a model of hospital behavior in which different preferences are maximized. In the case of Newhouse (1970) and Feldstein (1971), hospitals maximize quantity and quality of medical services, while in Lee's (1971) model hospitals maximize inputs. Tuckman and Chang (1992) model nonprofit organizations as seeking to maximize both output and net assets. Luksetich and Lange (1995) find evidence that nonprofit orchestras seek to maximize quality and also budgets. Duggan (2000) finds that despite the belief in the altruism of nonprofit hospitals, these organizations still seem to maximize profits more than other performance measures.

Only Tuckman and Chang (1992) model net asset accumulation as a goal of nonprofits,

and this organizational choice is balanced with mission and output. The authors only consider a single time-period in their model and are limited to total net assets as a measure, in both cases due to data limitations. Other authors do not address net asset accumulation, or assume that nonprofits seek to breakeven only.

Expansion Based on Demand for Services (“Supply Response”) and the Relationship to the Accumulation of Net Assets

Nonprofits have been thought to expand, as businesses do, when demand for their services increases. Hansmann (1987a) empirically tests a model in which nonprofit market share in a particular jurisdiction in relation to its for-profit counterpart is affected by growth in demand for services, measured by changes in specific demographic variables. His findings are suggestive that nonprofits do not exploit these opportunities to the extent that for-profits exploit their own market changes. One potential reason, suggested by Hansmann (1987b) and Tuckman (1993), is that nonprofit capital sources are limited. Unlike for-profits, nonprofits are unable to issue equity shares, thereby limiting sources of capital to debt, donations, and net assets. Tuckman (1993) further hypothesizes that these other sources of capital might be easier to obtain if the nonprofit can use accumulated net assets as evidence of fiscal strength and prudence. In this understanding of nonprofit behavior, net assets serve as a source or a means to achieve organizational growth and expansion. Further, once capital is purchased, net assets serve as a means to replace capital as it is used up.

Subsidizing Services Behavior and the Relationship to the Accumulation of Net Assets

Some have hypothesized that nonprofits operate to provide certain services that will not be supported on their own (for example, medical care for the indigent). Nonprofits might choose

to generate income from some sources (such as donations, investments, or events) as a means of cross-subsidizing these services. James (1983) provides a theoretical explanation of why nonprofits might choose this behavior while assuming breakeven operations. Breakeven operations imply that any surplus is used to subsidize existing clients only, since the increased costs would eliminate any potential surplus. In other words, the theory does not assume the existence of positive net assets in making this decision.

In this theory, surpluses are implicitly assumed to be accidental or due to poor forecasting (since the goal is breakeven). This idea of inadvertent surpluses contradicts Chang and Tuckman (1990) and Tuckman and Chang (1992) that surplus accumulation is deliberate.

Seeking Net Assets as a Hedge Against Revenue Uncertainty

Hansmann (1990) recognizes that nonprofits might wish to accumulate surpluses as ends in their own right. Most basically, the accumulation of surpluses can be thought of as a means of becoming independent from donor intent. James (1983) and Rose-Ackerman (1987) point out that nonprofits must serve the interests of donors; additional sources of revenue (or, by extension, net assets derived from past revenues) allow nonprofit managers to pursue their own preferences that may not necessarily be aligned with the preferences of donors. Tuckman and Chang (1992) also hypothesize that the accumulation of net assets may be an indicator of organizational success. Additionally, they argue, net assets might be a goal of the organization if the nonprofit is run by managers or boards with extensive fund-raising backgrounds, indicating support for raising ever-increasing sources of gifts and donations as a goal in itself.

Organizational theorists have suggested that financial slack (such as net assets) protects an organization from variance in its performance, allowing managers to maintain stable targets

for the organization rather than searching for new projects or investments that might offset lower returns in other parts of the firm. Early proponents of this theory included Cyert and March (1963). In the nonprofit sector, this theory can be understood as nonprofits wanting to hold net assets to ensure that revenue disruptions do not affect output or other preferences (rather than return, as in the for-profit setting). In this understanding, net assets essentially serve to replace lost revenues, so that the nonprofit organization is not left unprepared, searching for new resources, and possibly having to cut service offerings.

On the other hand, agency theory indicates that slack resources such as positive net assets can cause owners and managers to have divergent goals for the organizations, may reduce managers' willingness to engage in risk-taking, and ultimately may make the organization less economically efficient and productive. This theory was outlined in its original form by Jensen and Meckling (1976). In the case of nonprofits, the "owner" of the organization is society at large. Public oversight may come from different actors (donors, Boards, government), but the public sector ultimately has primary oversight responsibility. Fisman and Hubbard (2005) show how state Attorneys General help alleviate the agency problems of accumulated net assets by serving an oversight function.

Overall, then, theories of nonprofit existence and behavior are largely silent concerning the reasons for accumulating net assets within the nonprofit sector. Either these theories are incorrect in assuming that nonprofits must breakeven (thereby generating no net assets), or the possibility of net assets existing is rarely considered. Since existing theory has largely overlooked the fact described by Chang and Tuckman (1990) (that nonprofits seek to accumulate surpluses), the existing theory offers little explanation or guidance to explain this demonstrable

reality.

The current body of literature also suffers from two additional limitations that this analysis seeks to overcome. First, most studies of nonprofit net assets are either descriptive (Hansmann 1990, and Chang and Tuckman 1990) or cross-sectional (Tuckman and Chang 1992, and Fisman and Hubbard 2002 and 2003). Fisman and Hubbard (2005) examine net assets in a panel, but limit the analysis to the effects of state-based oversight on changes in net assets and do not model the determinants of net asset levels. Thus, causality is difficult to determine.

Secondly, the existing analyses of nonprofit net assets ignore the possible effects of restrictions. The use of restrictions by donors can be conceptualized as a means of addressing the agency problem as articulated by Jensen and Meckling (1976). The restrictions are meant to inhibit managerial choice, so that donations are used as donors intend and the donations themselves can be tracked or monitored more readily than unrestricted donations. Triantis (2004) outlines the difficulties nonprofits have when trying to use restricted gifts for collateral or bankruptcy proceedings, and Goodwin (2008) lays out the legal requirements that inhibit nonprofit organizations from using restricted gifts against the wishes of the donor. It has been argued that cash itself can be illiquid within the nonprofit sector because the cash is restricted as to use or timing (Miller 2005). If this accurately reflects the reality of nonprofit finances, then failing to take account of this control mechanism by donors means that prior analyses are overstating the level of nonprofit slack available for use, misuse, or perquisites.

Uncertainty and the Value of Net Assets in Nonprofit Organizations

Based on the limited theory of why a nonprofit organization would seek to accumulate net assets, I develop here a simple theoretical model that predicts such nonprofit behavior based

on the uncertainty of goals, inputs, and demand. The value of net assets in a nonprofit organization can be illustrated with a simple two-period model of nonprofit utility. Following Fisman and Hubbard (2005), I model a nonprofit organization that derives utility from providing a charitable output in each period, Q_t , where $t = 1, 2$:

$$U(Q_1, Q_2), \text{ where } U_1 > 0 \text{ and } U_2 > 0 \quad (1)$$

For simplicity, assume the organization is new (that is, period 1 is its first period of operation) and that the organization begins the period with net assets $(NA_0) = 0$. The cost of producing Q_t is v_t . Income in any period is Y_t , and includes donations, program revenues, grants, investment revenue, etc. The interest rate that an organization can earn on savings is denoted as r_t . The change in net assets between periods (ΔNA_t) equals $NA_t - NA_{t-1}$. The budget constraint in the first period can be written as:

$$Y_1 = v_1 Q_1 + \Delta NA_1 = v_1 Q_1 + NA_1 \quad (2)$$

Note that equation 2 holds because $NA_0 = 0$. The second period budget constraint can be written as:

$$Y_2 + r_1 NA_1 = v_2 Q_2 + \Delta NA_2 \quad (3)$$

In this model with no uncertainty, income, output, and costs are all known by the organization for the current and future period. In this scenario, the nonprofit organization may choose to devote all income in period 1 (Y_1) to output (Q_1) since income and output in period 2 are also known with certainty. With perfect certainty, the nonprofit will know whether it needs to expand due to increased demand, whether the clients it cross-subsidizes will still be in need of such aid,

and whether all income will be available during the period to finance output, expansion, or subsidies. Precautionary savings, then, are unnecessary, since there are no uncertainties against which the nonprofit needs to hedge. The potential effects of positive net assets (such as agency problems) may not exist since precautionary savings presumably do not exist to induce such effects.

Relaxing this assumption of no uncertainty, however, means that some level of uncertainty affects the variables in equations 2 and 3. More directly, uncertainty may affect the behavior of nonprofits, resulting in nonprofits seeking net asset accumulation, as described below. These potential effects on behavior can be understood in the context of the behavioral theories outlined in the previous section.

Value of Net Assets for Maximizing Preferences in the Presence of Uncertainty

Net assets may be a source of funds allowing nonprofits to maximize preferences (output, quality, etc.) over business cycles. Rather than nonprofits being constrained by annual revenues only, net assets permit nonprofits to maximize preferences over time (that is, over more than one year). In the absence of net assets, there is no guarantee that any preference can be maximized in period 2 based on equation 3, since income – Y_2 – could be \$0. Only net assets guarantees that nonprofit output occurs beyond one time period.

Value of Net Assets for Hedging Against Uncertainty about Expansion of Services

Uncertainty about the future means that nonprofits cannot know whether changes in demand for nonprofit services will require investment in additional staff or fixed assets. Nor is there certain knowledge whether changes in client population characteristics will require changes

in service offerings. Because organizations may have invested in capital assets in the past, such investments must be maintained and replaced as used up. But nonprofits face uncertainties about when capital assets will be exhausted, unusable, and need to be replaced. Because of equity constraints and uncertainty about the ability to borrow, nonprofits may choose to retain net assets as a source of funds for future investment.

Value of Net Assets for Hedging Against Uncertainty about Subsidizing Behavior

Nonprofits seeking to subsidize certain services may choose to retain resources for two particular reasons when faced with uncertainty about the future. First, because subsidy sources may be risky or lumpy (for example, donations for a particular purpose that come in once a year), an organization might choose to retain resources to ensure the unprofitable service can be maintained without interruption. Otherwise, that particular service, which might be core to the organization's mission, may be negatively affected. Second, the organization might choose to retain resources to subsidize future clients if there is a belief that client populations in the future will be either more numerous or more needy.

Value of Net Assets as a Hedge Against Revenue Uncertainty

Nonprofits may choose to accumulate net assets as a form of financial slack to protect the organization from funding cutbacks, allowing the organization to maintain mission-related output without resorting to cutbacks or search, as described by Cyert and March (1963). An important aspect of management and the board is to identify vulnerable revenue streams and establish reserves to protect against downturns in these revenues (Greenlee and Tuckman 2007). This behavior would indicate that more risky revenues would result in increased net assets to

provide a rainy day fund for the organization. Government funding is a stable revenue source (Kingma 1993, Froelich 1999, and Andreoni and Payne 2003); Handy and Webb (2003) hypothesize that this safety reduces nonprofit savings (in this case, net assets). Donations, on the other hand, may follow the same economic cycle as the overall economy (Irvin 2007). Nonprofits may use net assets to smooth out this loss of revenue during bad economic times. Self-generated revenue is more certain than donations (Froelich 1999), implying decreased net assets relative to organizations without self-generated revenue. Finally, investment income is perhaps the most volatile and risky revenue source, indicating that nonprofits may retain more net assets as investment income grows – assuming that nonprofits view this investment revenue as temporary and not permanent in nature.

Related to revenue source is revenue concentration. Under conditions of certainty, concentration is not important; uncertainty may lead to specific behaviors with respect to net assets. For example, the more concentrated, the more risky the revenue is since the loss of a concentrated revenue sources has a larger effect on operations than a loss of a proportionately smaller revenue source. Uncertainty may induce organizations to diversify revenues, not necessarily only out of a desire for autonomy from donor intent, but simply to ensure long-term viability.

Taking into account the various sources of uncertainty that affect nonprofit behavior and motivate resource accumulation by organizations, a model of the level of nonprofit net assets in a given period can be stated as follows:

$$\text{Net Assets} = f(Q, E, C, R, O, t, S) \tag{4}$$

where Q is a vector of variables related to the value of net assets for maximizing preferences (such as output) in the presence of uncertainty, E is a vector of variables related to the value of net assets for hedging against the uncertainty about the need for expansion of services, C is a vector of variables related to the value of net assets for hedging against the uncertainty related to subsidizing certain clients, R is a vector of variables related to seeking net assets as a hedge against revenue uncertainty, O is a vector of other control variables, t is year fixed effects, and S is subsector fixed effects. More detail on how each of these variables is measured is presented following the description of the data.

Data

The primary data used in this paper comes from the “The National Center on Charitable Statistics (NCCS)-GuideStar National Nonprofit Research Database” (hereafter called the “digitized data”) for fiscal years 1998 through 2003. The digitized data cover all public charities required to file the Form 990,⁴ a standardized report that must be submitted by public charities with gross receipts in excess of \$25,000 annually with the IRS. The digitized data contain financial variables on each organization, specifically all revenue, functional expenses, and balance sheet items.

The digitized database contains 1,388,480 observations for 338,863 organizations covering 1998 through 2003. 1,471 observations covering 385 organizations are excluded because they are nonprofits based outside the 50 states or Washington, DC. Approximately 20 percent of the sample (288,873 observations for 93,765 organizations) filed the Form 990EZ, which does not contain data on restricted net assets, one of the dependent variables for the models. These observations are not included in the final analysis.

In addition, 63,242 (4.6 percent) observations covering 23,119 (6.8 percent) of organizations report negative total net assets. These organizations are excluded from the final analysis since they cannot be assumed to be going concerns. Chang and Tuckman (1991) show that inadequate net asset balances is a characteristic of financially unstable organizations. This instability often leads to change in their organizational behavior and ultimately may result in program elimination or closure (Denison and Beard 2003). Nonprofits with negative net assets are believed to behave differently than nonprofits with positive net worth.

Of the remaining sample, 309,054 (22.3 percent) covering 100,900 (29.8 percent) organizations report zero net assets each year. A separate analysis found that these organizations are likely reporting incorrect net asset balances due to a lack of accounting knowledge. These errors are not random; rather, they tend to be made by smaller nonprofits and nonprofits that are early in their lifecycle. These observations are not included in the final analysis. The final sample contains 699,717 (50.4 percent of the original sample) observations covering 134,421 (40 percent) organizations. Other analyses that use the Form 990 report similar data selection decisions. For example, the Fisman and Hubbard (2002 and 2005) samples contain approximately 25 percent of the original organizations in the panel; the Core, Guay, and Verdi (2006) sample contain approximately one-third of the original organizations; and the Keating, Parsons, and Roberts (2008) sample contains approximately 40 percent of the original organizations.

Measurement of Variables

Dependent Variables

The dependent variable, net assets, is defined in three ways: 1) Total Net Assets (as the

current literature does), 2) Unrestricted Net Assets, and 3) Unrestricted Net Assets plus Temporarily Restricted Net Assets. The second definition removes donor-restricted gifts from total net assets, while the third definition adds back into 2) temporarily restricted donations, which often require nonprofits to perform some function through operations to earn the revenue (like a service contract). Only one – Total Net Assets – has been used in the current literature; the additional measures allow a nuanced treatment of the topic unavailable until recently. All definitions of net assets are transformed using natural logarithms.

Independent Variables

Q: Value of Net Assets for Maximizing Preferences (Outputs) in the Presence of Uncertainty Variables

Although nonprofit output is not directly observable in most cases, several proxy measures have been used in the existing nonprofit literature to capture the concept of output. These measures, intended to capture the effects of uncertainty surrounding future output, are primarily based on changes in population characteristics or demographic variables, as suggested by past authors. The lagged one-year percentage change in these variables is used, under the theory that nonprofits need time to adjust to changes in their environment.⁵

Uncertainty of Change in Average Per Capita Income

The change in average per capita income is intended to measure the change of nonprofit output desired by populations.⁶ It is measured at the county level, and is adjusted for inflation using the CPI-U. These data were obtained from the Bureau of Economic Analysis. It is hypothesized that increased uncertainty about average per capita income is indicative of desired uncertainty about the population's desired output (perhaps due to uncertainty of future tastes,

etc.), leading to increases in the levels of net assets retained by nonprofits to ensure meeting this uncertain future output demand.

Uncertainty of Change in Proportion of Youth Population

Hansmann (1987a) includes the change in the percentage of the youth population to measure changes in desired output (quantity, quality, or both) of education services. In addition, youth are the target of other nonprofit activities in other subsectors (health, community development, among others). Age distributions by county were obtained from the Census Bureau, and annual estimates were obtained from the intercensal archives. The age bracket 5-24 years old most closely captures the school-age population and is included. It is hypothesized that increased uncertainty about changes in youth populations leads to increased net asset accumulation by nonprofits, again to ensure adequate available resources to meet this uncertain change in future output.

Uncertainty of Change in Proportion of Elderly Population

Hansmann (1987a) also includes the change in the percentage of the elderly population to measure changes in desired output (again, some combination of quality and quantity) of certain health services. Similarly, the change in the population aged 65 or older is included. It is hypothesized that increasing uncertainty about future elderly population changes leads to increased net asset accumulation by nonprofits.

Uncertainty of Change in Community Homogeneity

Weisbrod (1975) and James (1987) both indicate that homogeneity of tastes is an

important determinant of nonprofit output. To measure changes in community homogeneity, I construct the change in a county's racial concentration measured by a Herfindahl index, as in Chang and Tuckman (1996). The racial composition of each county was obtained from the Census Bureau, and annual estimates were obtained from the intercensal archives. The racial information divides the population between white, black, American Indian, and Asian, either as Hispanic or non-Hispanic. It is expected that the more diverse a community, the more nonprofits will exist providing increased output to the community. Uncertainty about changes in diversity is expected to increase uncertainty about changes in desired nonprofit output in the community, leading to increased levels of net assets.

E: Value of Net Assets for Hedging Against Uncertainty about Expansion of Services Variables

Uncertainty of Future Capital Expansion

Because the nonprofit capital markets are limited (Tuckman 1993), capital intensive nonprofits may retain net assets if they are uncertain that increased future demand for services will require future investments in fixed assets to meet this future demand. Because of these limited capital markets for nonprofits, it is hypothesized that more capital-intensive nonprofits will retain more net assets as a source of funds for fixed asset acquisition in response to this uncertainty about future demand. The level of fixed assets is defined as the natural log of Land, Buildings, and Equipment.

Uncertainty of Capital Replacement

Nonprofits with fixed assets may also retain net assets to invest in replacing these capital assets as they are used up. Since nonprofits may not know with certainty when specific fixed

assets will need replacing in the future (not for expansion, but simply to maintain current offerings), or be uncertain about possible future financing, it is hypothesized that nonprofits with older stocks of fixed assets will retain increased levels of net assets to hedge against this source of uncertainty. This variable is defined as the natural log of Accumulated Depreciation.

Uncertainties about Access to Debt and Cost of Borrowing

Rather than saving for investment, a nonprofit may also choose to borrow funds to invest in capital assets. In this case, the nonprofit faces uncertainty about access to debt and future interest rates. I borrow a leverage measure from Fisman and Hubbard (2002 and 2003) and Core, Guay, and Verdi (2006) who use a dummy variable representing whether an organization has long-term debt outstanding as a proxy for access to debt. The access to debt variable, however, is likely endogenous: lenders may be more likely to lend to organizations with greater levels of net assets; hence, net assets likely affect access to debt. To address this concern, this access to debt variable is lagged one year. Because a lag variable is predetermined, the lag variable acts as a kind of instrument since, by definition, it cannot be affected by subsequent dependent variables.

In addition to access to debt, I also use an interest rate proxy measure following Tuckman and Chang (1992) who define the cost of debt as total interest expense for the year divided by the total liabilities.⁷

It is hypothesized that having access to debt reduces the uncertainty of funding future possible capital expansion; hence, access to debt is expected to have a negative effect on net asset levels. In addition, it is hypothesized that uncertainty about increasing future borrowing rates may result in nonprofits retaining increased levels of net assets (choosing to save rather than to borrow more expensively); on the other hand, uncertainty about decreasing future

borrowing rates may result in decreased levels of net assets (choosing to borrow rather than save due to less expensive debt).

C: Value of Net Assets as a Hedge Against Uncertainty about Subsidizing Clients Variables

Uncertainty of Change in Population Need

Two variables are included to measure characteristics of the population that may require subsidization by nonprofit organizations. The change in state welfare recipients per capita is included to capture not just the need for increased demand for public assistance, but also capture a potential subgroup of the population requiring subsidizing to obtain nonprofit output. The data were obtained from the US Department of Health and Human Services, Administration for Children and Families. The percentage change in state welfare recipients per capita is calculated to measure the uncertainty of this variable. It is hypothesized that increased uncertainty about increased future welfare recipients may increase the level of net assets since nonprofits may retain more net assets if it believes future clients will be either more numerous or more needy.

Another measure of social distress is the state unemployment rate. Like welfare recipients, the unemployed may be unable to cover their full costs of receiving some nonprofit output, thereby requiring some subsidy. State unemployment rates were obtained from the Bureau of Labor Statistics. The percentage change in unemployment rate is calculated to measure the uncertainty of this variable. Like the measure of welfare recipients per capita, it is expected that increased uncertainty about changes in unemployment rates may result in nonprofits retaining higher levels of net assets to ensure adequate resources to subsidize possible future clients.

G: Uncertainty about Revenues Variables

Uncertainty about Government Funding

Government funding has been empirically shown by Kingma (1993), Froelich (1999), and Andreoni and Payne (2003) to be a more stable revenue source than others. Government funding in this study is defined as the natural log of total government grants and contracts. It is hypothesized that the low level of uncertainty concerning future government revenues will result in lower levels of net assets, as nonprofits will have less incentive to retain a portion of the government money in case the revenue source is reduced.

Uncertainty about Donations from Individuals

Because donations from individuals may follow the same economic cycle as the overall economy (Irvin 2007), future donation levels are as uncertain as the future overall economy. Donations in this study are defined as the natural log of total donations from individuals. It is hypothesized that nonprofits will retain a portion of donations as net assets since levels of this revenue are, in general, relatively uncertain.

Uncertainty about Self-Generated Revenues

Froelich (1999) asserts that while self-generated revenues are not risk-free, the revenues are not restricted by donor intent, and the uncertainty of these revenues is smaller than donations. Self-generated revenues are defined as the natural log of program service revenue + membership dues and assessments + gross revenue from special events and activities + gross profit or loss on sales of inventory + other revenue of organization. It is hypothesized that nonprofits will retain a portion of self-generated revenues as net assets due to future uncertainty about generating such

revenue, yet the level retained is expected to be lower than for comparable levels of donations.

Uncertainty about Investment Revenues

Investment income is affected by underlying economic activity (for example, activity in the stock market, real estate markets, etc.). To the extent that such future activity is uncertain, so too should investment income be uncertain. Investment revenue is defined as interest + dividends + gross rents + net gain or loss from sales of assets other than inventory + other investment income of organization.⁸ Because investing requires either borrowing or savings, net assets likely affect the amount of investment revenue earned by nonprofits; this variable is lagged one-year to address this concern, similar to the access to debt variable. It is expected that nonprofits will retain a portion of investment revenue as net assets due to the future uncertainty about investment revenue generated by risky activities.

Uncertainty and Revenue Concentration

Organizations may seek to reduce their dependence on single or few revenue sources and diversify their revenue streams. Following Tuckman and Chang (1991), a Herfindahl index of revenue concentration is used in the current analysis, defined as the sum of revenue_{*j*}/total revenues². It is hypothesized that the more concentrated an organization's revenues, the more risky and uncertain their future revenues are. Hence, more concentrated revenues are expected to increase net assets since this increases the uncertainty of future revenues.

Interaction Effects

As indicated, organizations may choose not to save for capital investment if they have

access to borrowing. The dummy variable “access to debt” is interacted with the fixed asset variable to test whether such access to borrowing affects net asset levels given the capital intensity of the organization. While it is expected that more capital intensive nonprofits will retain higher levels of net assets, this expectation might not hold if the organization can borrow for capital expansion rather than saving for it. Hence, the interaction effect seeks to determine if access to borrowing does in fact reduce the desire for savings by capital intensive nonprofits in the face of uncertainty. Similarly, rather than saving to replace fixed assets that are used or worn out, access to debt might allow nonprofits simply to borrow to replace fixed assets as they are worn out.

C: Control Variables

Size

Other factors may affect both the level of net assets and the values of other independent variables, and failing to include these variables in any estimation would bias the coefficients on the included measures. Organization size is included in the current analysis, defined as total revenues, following Core, Guay, and Verdi (2006).⁹ Total revenue is transformed using natural logarithms. It is hypothesized that larger organizations may retain higher levels of net assets than smaller organizations since the larger organization needs larger net asset levels to hedge against future uncertainties.

Attorney General Oversight

In order to measure a nonprofit’s regulatory environment, an index measuring Attorney General oversight is included. Since the Attorney General often has oversight powers in relation

to nonprofits within the state, the level of this oversight might plausibly influence net asset levels by nonprofits in the state. This index ranges from 0 (no oversight powers) to 8 (maximum oversight powers), and has been used in prior research by Fisman and Hubbard (2002 and 2003) and Gentry (2002).

Increased Attorney General oversight may decrease the level of net assets. Nonprofits in states with low government oversight relative to other states may have less pressure to consume current revenues for current services. Also, increased oversight leads to additional costs for regulatory compliance, which may reduce net asset levels.

Number of Employees

An alternative (and uncorrelated) measure of size is the number of employees of an organization. The potential direction of the coefficient is uncertain: on the one hand, labor-intensive organizations might retain more net assets as staff size increases to have the potential to expand in the face of uncertainty; on the other hand, labor is a variable cost of nonprofits (Fisman and Hubbard 2002), which implies nonprofits will add staff expense relatively concurrently with revenues derived from this staff. Hence, net assets may be lower.

S: Subsector

Preferred levels of net assets may differ between nonprofits simply because organizations operate within different market or industry subsectors which may have different cultures, regulatory environments, business norms, etc., necessitating the inclusion of such subsector variables to control for such unobserved and unchanging uncertainty. The National Taxonomy of Exempt Entities (NTEE) was created by the National Center on Charitable Statistics to mirror the

North American Industry Classification System (NAICS) that is used by the IRS. The NTEE subsector classification contains 26 distinct categories in which nonprofits operate. These NTEE subsector codes are used as the subsector definition in the net assets specifications.

Results

Descriptive Statistics

Table 2 presents the descriptive statistics for the variables used in the empirical estimations for the years 1999 and 2003. The average total net asset balance for all organizations in the sample in 1999 is approximately \$429,000, with only a slight increase to approximately \$434,000 in 2003. Harvard College reports the largest amount of Total Net Assets in both 1999 and 2003, approximately \$17.6 billion in 1999 and \$23 billion in 2003. The average unrestricted net asset balance in 1999 is approximately \$306,000, increasing to an average of approximately \$315,000 in 2003. The range is again very large, with organizations reporting between \$0 and over \$11.7 billion in 1999, increasing to nearly \$11.4 billion in 2003 (both of which are the Howard Hughes Medical Institute). These simple descriptives show that significant levels of net assets are restricted – nearly one-third on average – and subject to compliance with donor intent.

Real per capita income growth by county in 1999 is very low at just over 2.5 percent. Average real per capita income actually declines at the county level 0.6 percent by 2003. The range of change, though, is quite large. While some counties record severe drops in average per capita income – in 1998, for example, the minimum is a change of almost 18 percent in Duplin County, NC – other counties experienced strong growth – 33 percent (in Sheridan County, ND) in 1998 and over 64 percent (in Haakon County, SD) in 2003. The flat average change in per capita income hides real variation between counties.

The average population changes in counties are relatively small during the sample period. Given the short timespan of the data, this is unsurprising. Average annual changes for youth and the elderly are consistently one percent or lower. Like per capita income, however, there is much variation between counties. Washington, DC and Maricopa County, AZ saw strong youth growth, while Thomas County, NE and Billings County, ND had sharp declines in youth. Alpine County, CA and Randall County, TX saw significant increases in their proportion of elderly citizens, Denali Borough, AK and Corson County, SD saw sharp drops in their elderly ratios.

The change in county racial homogeneity in nonprofits' communities averages a slight 0.01 decline on average, indicating a slight move towards increasing racial diversity. Some counties experienced strong changes in racial characteristics, such as Colfax, NE which experienced a year-over-year change of -0.32 – indicating significant movement towards diversity, and Southampton and Franklin, VA which experienced a year-over-year change of 0.32 – indicating significant movement towards racial homogeneity.

The reported debt information is worthy of discussion. Only approximately 27 percent of nonprofits in the sample report long-term liabilities. This contrasts with Yetman (2007) who finds high levels of debt in the sector (over 60 percent of organizations with long-term debt). The difference, again, is the data used for the analysis. His analysis uses the Statistics of Income, which is biased towards larger nonprofits. The descriptives in this study suggest that leveraging within the sector is actually much less when one includes smaller nonprofits in the analysis.

Nonprofits vary greatly in how much they have invested in fixed assets. The sample ranges from no fixed assets, to over \$4.8 billion. The average nonprofit in the sample, however, has between \$5,200 (in 2003) and \$5,700 (in 1999). The average nonprofit is not heavily-invested in property, plant, and equipment. Similarly, nonprofits vary in how much accumulated

depreciation they report, ranging again from \$0 to nearly \$4.7 billion. The statistics indicate that total fixed assets in the sector are approximately 30 percent depreciated.

The change in welfare recipients per capita in 1998 are sharply negative due in part to welfare reform passed by the federal government in 1996. West Virginia and Washington, DC (both in 1998) recorded the largest drops in per capita welfare recipients, while West Virginia and Indiana (both in 2001) saw the largest year over year increase in per capita welfare recipients. A strong economy likely eased unemployment rates, led by Connecticut and Washington, DC (in 1999), while North Carolina (in 2001) and Colorado (in 2002) saw unemployment rates increase the most, likely caused by the national economic recession.

On average, nonprofits tend to generate more “earned income” from goods and services than from donations. While the nonprofit accounting model and oversight regimes are focused on accountability to donors, most nonprofit revenue is not derived from donations. The range for the amount of donations received by nonprofits in the sample range all the way from \$0 to over \$1.5 billion

For nonprofits in the sample, average size is relatively small, averaging between \$475,000 and \$494,000 in total revenues. Again, this reflects the digitized database’s inclusion of all Form 990 filers rather than large filers only as in the Statistics of Income. Total revenues range from essentially \$0 to nearly \$14.4 billion in 1999 (which is the Kaiser Foundation Health Plan). Another potential measure of size is the number of employees. The average nonprofit in the sample has between three and four employees. Such limited staff sizes may have an effect on nonprofit financial capabilities, since small nonprofits are more likely to have unsophisticated financial management skills (Nitterhouse 1997).

Regression Results – All Subsectors

Table 3 displays the regression results of the determinants of the logarithm of nonprofit net assets, with all NTEE subsectors included. The independent variables are lagged in the models presented; independent variables measured in logarithms are interpreted as the elasticity of net assets with respect to the variable, while variables measured in own units are semielasticities.¹⁰ Year dummy variables are included in the regression but these coefficients are not reported; similarly, while NTEE industry fixed effects are included, the coefficients are not reported. In all specifications, I use robust standard errors clustered by organization to address heteroskedasticity.

The first column in Table 3 displays the estimation with the log of Total Net Assets as the dependent variable. The R^2 shows that the model explains 73 percent of the variation of the dependent variable. This model has increased explanatory power compared to other models of nonprofit total net asset accumulation (Tuckman and Chang 1992, and Fisman and Hubbard 2002); however, prior models define the dependent variable differently (specifically, Tuckman and Chang define the dependent variable without transforming it, and Fisman and Hubbard define it as Total Net Assets/Total Expenses) and are estimated on different samples. Further, Tuckman and Chang (1992) do not include any fixed effects, while Fisman and Hubbard (2002) include subsector fixed effects similar to the current analysis. Column 2 in Table 3 displays the results of using unrestricted net assets only as the dependent variable, and Column 3 displays the results for net assets excluding permanently restricted net assets. The R^2 drops slightly in each model, but still explains a majority of the variation in each case.

Total Net Assets: Uncertainty about Output (Q)

Only the lagged year-over-year change in racial diversity displays the expected positive coefficient, specifically that a 1 percent change in the diversity index results in a 0.24 percent change in net assets, *ceteris paribus*. This suggests that as county diversification changes, nonprofits located within the county change their net asset retention levels as well, possibly to hedge against the uncertainty of future output demand from the changing population. In other words, nonprofits may accumulate net assets in response to this change in population to ensure adequate reserves to meet future and uncertain demands of the population.

The change in per capita income has an unexpected negative coefficient. A possible explanation for this unexpected negative coefficient is that downward changes in average income might be accompanied by increased public resources, and upward changes might indicate increased possible resources for nonprofits (from increased donations, a higher ability to pay for services, or a combination of both). Nonprofits might determine, then, that uncertainty about future output may be best matched with future resources.

Also contrary to expectations, the changes in youth and elderly population variables also have negative and significant coefficients. One possible explanation for these results is that these particular populations may indeed demand increased nonprofit output, but ample external funding exists to pay for this demand. For example, the elderly may require increased health services, but the population is covered by Medicare (and, in the case of the poor, Medicaid as well). Increased uncertainty about future output demand by the elderly, then could reduce net assets since the increased output demand does not require nonprofits saving today to meet this uncertainty in the future. Similarly with youth, nonprofits may be uncertain about future output demand, but there may be greater certainty about how this demand is financed. In the case of youths, many services (such as education) may be excludable, allowing the nonprofit to charge

for services (for example, a nonprofit day care might charge a certain amount each day per child). Hence, uncertainty about future output may be offset by increased certainty that such future output changes will be financed with future resources and do not require retaining current resources.

Total Net Assets: Uncertainty about Expansion (E)

The access to debt variable has the hypothesized negative coefficient, indicating that nonprofits that can borrow may substitute this for current savings. This supports the findings of Fisman and Hubbard (2002 and 2003). Having access to long-term borrowing decreases net asset levels nearly 15 percent.¹¹ Having access to debt does seem to reduce the uncertainty about future expansion needs since the organization can choose to borrow in case it needs to expand, reducing the need to save current resources for such future expansion needs.

Nonprofits that are more capital intensive also have higher levels of total net assets. (with a reported elasticity of 0.26). This finding might suggest that organizations with greater fixed assets and capital needs accumulate net assets in reaction to future uncertainty about other financing sources, as suggested by Tuckman (1993), who hypothesized that net assets are accumulated due to highly imperfect nonprofit capital markets. In other words, nonprofits with larger capital needs view net asset accumulation as a more certain means to possibly achieve future expansion than uncertain nonprofit capital markets. The interaction term between access to debt and fixed assets is not statistically significant.

The interest rate proxy variable is negative, contrary to expectations, suggesting that nonprofits accumulate lower levels of net assets in response to increased uncertainty about future borrowing costs. A one percent increase in borrowing costs (for example, a change from a 5

percent loan to a 5.05 percent loan) decreases net asset levels 0.02 percent. Although contrary to expectations, this finding is consistent with Tuckman and Chang's (1992) findings concerning the cost of borrowing and net asset levels. As the uncertainty about future borrowing costs increase, nonprofits may – rather than save as predicted – choose to spend down accumulated net assets for expansion purposes rather than borrow at all. Thus, borrowing cost uncertainty may actually reduce the level of net assets.

The amount of fixed assets used up (measured by depreciation) is not statistically significant in the model. This may indicate that nonprofits do not accumulate net assets in response to future uncertainty regarding replacing fixed assets. The interaction term between access to debt and depreciation, however, is significant and in the hypothesized negative direction. This suggests that access to debt reduces the uncertainty of replacing these fixed assets in the future; rather than saving for the uncertain replacement in the future, access to debt allows the organization to draw upon these debt resources (potentially) rather than devote current resources to saving for this uncertain possibility.

Total Net Assets: Uncertainty about Subsidization (S)

The variables related to subsidization show mixed results. The change in per capita welfare recipients is positive as expected: a one percent change in welfare recipients per capita is associated with a 0.04 percent change in net asset levels, *ceteris paribus*. However, the unemployment rate has an unexpected negative coefficient. This result suggests that increased uncertainty about future unemployment rates had a negative effect on net asset levels. This negative coefficient might reflect that increased unemployment may be met with increased government funds (from unemployment insurance, for example), which may ultimately reach

nonprofits.

Total Net Assets: Revenue Uncertainty (R)

As expected, government funding does seem to reduce nonprofit net asset levels, perhaps due to its predictable and certain nature. A one percent change in government funding reduces net assets 0.3 percent, *ceteris paribus*. This finding lends empirical support to Handy and Webb's (2003) theory that government funding reduces nonprofit savings.

The results with respect to donation revenues are also consistent with expectation. A one percent change in donations is associated with a 0.1 percent increase in net asset levels, *ceteris paribus*. Further, the results support the expectation that investment revenue increases net asset levels (with a reported elasticity of 0.33). The results with respect to donations and investment revenue are consistent with the notion that nonprofits seek to retain a portion of current resources as a hedge against possible revenue losses in the future. These losses might be because the revenues are risky, lumpy, or both.

The self-funding variable has a negative coefficient, which is opposite expectations. While the self-funding variable was expected to be more certain than donations or investments, these results suggest that self-funded revenues may be perceived as so certain that nonprofits reduce net asset levels because of them. Alternatively, it might be that nonprofits in weaker financial positions with lower net asset levels are more likely to seek self-generated revenues as a means of improving financial health, as suggested by Greenlee and Tuckman (2007).

Total Net Assets: Control Variables (C)

Both total revenue (size) and Attorney General oversight are consistent with

hypothesized signs. A one-unit change in Attorney General oversight is associated with 0.005 percent decline in net asset levels, *ceteris paribus*. This contrasts with the results in Fisman and Hubbard (2005), where the authors find increased oversight leads to increased net asset levels. The different results are likely the result of two factors: 1) the Fisman and Hubbard (2005) analysis only examined the effect of donations on changes in net assets, while I include all revenue sources here, and 2) the use of the Statistics of Income data, which focus on large organizations. As to the first factor, the Attorney Generals' powers generally focus on fundraising issues (as related to consumer protection), so there may in fact be a differential effect on donations viewed separately from the total revenue portfolio; as to the second factor, Attorney Generals are likely to focus on known, established, and large nonprofits because these organizations may comprise a significant amount of activity within the state. Small nonprofits may not even be large enough to warrant filing registration papers with the state Attorney General.

The number of employees variable is negative. This may indicate that nonprofits add these variable staff costs as needed, but do not reserve a portion of current resources against uncertainty surrounding future employee levels.

Overall, these results suggest that nonprofits rationally save portions of highly volatile and uncertain revenues such as donations and investments. In doing so, nonprofits create slack resources that may permit them to maintain service offerings in the face of revenue losses. Also, nonprofits with higher levels of fixed assets retain higher levels of total net assets, perhaps in response to the imperfect capital markets faced by organizations in this sector. Total net assets are mitigated, however, by access to debt which seems to remove the uncertainty about future

expansion needs (and, by extension, reducing the need for net assets to accomplish uncertain future expansion).

The results also suggest that uncertainty about future resources may be mitigated by public entitlement spending, as reflected in specific population variables (namely the elderly, the unemployed, and youth). The elderly, youth, and the unemployed may affect demand for nonprofit output, but entitlement spending (such as Medicare, education, and unemployment insurance) seems to mitigate total net asset accumulation by nonprofits. In other words, public entitlements seem to reduce the financial uncertainties faced by nonprofit organizations.

Unrestricted Net Assets – All Subsectors

Column 2 in Table 3 presents the results of the model where the dependent variable is changed to unrestricted net assets, and the independent variables are all identical the total net asset model. Differences in results between the two models are discussed.

Unrestricted Net Assets: Uncertainty about Output (Q)

Only the youth variable is significant at the 5 percent or better level in this estimation, and the effect is smaller than in the total net asset model. The coefficient still has a negative coefficient, contrary to expectations, as in the original model.

Unrestricted Net Assets: Uncertainty about Expansion (E)

The results are fairly consistent between the total net asset and the unrestricted net asset estimations with respect to the uncertainty about expansion vector. Depreciation, which is not significant in the total net asset model, is significant and positive – as hypothesized – in the

unrestricted net asset model. Since annual depreciation expenses (or any expense for that matter) are debited under unrestricted funds, the restricted net assets may have obfuscated the original results.

The other difference between the two models is reflected in the interaction term between fixed assets and access to debt. Whereas this variable is not significant in the total net asset model (Column 1), it is significant in the unrestricted net asset model. The results suggest that organizations that have access to debt and are more capital intensive may retain higher levels of net assets. One explanation for this behavior might be that nonprofits accumulate some financial slack so that any potential debt assumed can be paid back with a reduced possibility of default; another explanation might be that debt may require some level of resources for down payments, fees, transaction costs, etc. These potential costs all increase as the amount of debt increases; so a nonprofit with large capital needs and access to debt may need unrestricted net assets to actually acquire debt.

Unrestricted Net Assets: Revenue Uncertainty (R)

Results are also largely in line with respect to revenue uncertainty variables. The single exception is that self-generated funding is not significant in the unrestricted net asset estimation, versus negative and significant in the total net asset model. The difference is likely based on the fact that self-generated revenues are by definition unrestricted. They cannot increase restricted net assets because there is no donor to restrict the revenue. This result indicates that nonprofits do not alter their unrestricted net asset levels due to self-generated revenue levels. In this respect, they are not as certain as government contracts (with a negative effect), but more certain than donations (with a positive effect), as originally hypothesized.

Interestingly, the coefficient on the donations variable is still positive and significant, as hypothesized. However, the size of the coefficient is much smaller in the unrestricted net assets model in comparison to the total net assets model (0.10 versus 0.05). This finding indicates that a significant portion of net assets within the sector may not be the result of organizational choice, but a requirement from donors.

Unrestricted Net Assets: Control Variables (C)

The Attorney General oversight variable is, not surprisingly, not significant in the unrestricted net asset model. The Attorney General is likely going to focus on the nonprofit as a whole, not as individual funds that comprise the whole. Further, one aspect of potential Attorney General oversight is ensuring that nonprofits comply with the terms of restricted donations. In many states, the Attorney General is responsible for bringing suit against nonprofits charged with ignoring donor wishes. The number of employees variable is also not significant predictor of unrestricted net assets.

Overall, the results for the unrestricted net asset model (Column 2, Table 3) suggest that uncertainty about capital expansion has greater effects on unrestricted net assets than total net assets. When Tuckman (1993) discusses net asset accumulation as a source of capital funds, he implicitly describes unrestricted net assets since the restricted portion cannot be spent on capital expansion. The results here empirically support his conjecture.

These results also suggest lower elasticity of unrestricted net assets with respect to donation revenues. The effect of restrictions on net asset levels does not seem trivial in these estimations, despite its exclusion from prior research.

Unrestricted and Temporarily Restricted Net Assets – All Subsectors

Column 3 in Table 3 presents the results of an estimation with the dependent variable defined as unrestricted and temporarily restricted net assets. The results are generally consistent with the total net assets model (Column 1). Although only 10 percent of the sample has both permanently and temporarily restricted net assets, the average difference between total net assets (the dependent variable in Column 1) and temporarily restricted plus unrestricted net assets (the dependent variable in Column 3) is only \$40,026 (compared to a \$122,432 average difference between total net assets and unrestricted net assets). This low level of variation between the two dependent variables is likely why there is little difference between the first and third models estimated.

The results in Table 3 include subsector fixed effects. To examine the specific effects of the independent variables on net assets, additional regression analyses are presented by four specific subsectors: health, human services, arts, and education. These four subsectors account for over one-half of the sample organizations.

Regression Results – By Individual Subsector

Table 4 presents the regression estimation using the natural log of total net assets as the dependent variable. Column 1 repeats the total net asset estimation for all subsectors (included in Table 3) to aid in comparing individual subsector results with the results for the entire nonprofit sector. Table 5 presents the regression estimation using the natural log of unrestricted net assets as the dependent variable.

Contrary to expectations, the change in youth population is negative across subsectors in the total net assets estimation, mirroring the results for the entire nonprofit sector. This result suggests that nonprofits reduce total net assets in response to uncertainty about future output. The change in the elderly population was included based on prior theory that this sector of the population might seek health-related output in greater quantity than other subgroups of the population. The results presented here, however, suggest a more complicated story, perhaps due to the presence of entitlement spending. The change in the elderly population is not significant in the health subsector in all three regressions. This might suggest that nonprofit health organizations do not increase net asset levels based on uncertain future elderly populations, perhaps because this sector of the population has a lower poverty level than the general population (implying an increased ability to pay for services), or, alternatively, perhaps because the elderly all have access to health insurance through Medicare, or perhaps health organizations have already accumulated desired levels of net assets to hedge against future output demands. Health organizations in the sample have higher levels of net assets than other nonprofits (nearly \$1.6 million on average between 1999 and 2003, which is nearly four-times greater than the average total net asset balance in the full sample).

Only the education subsector reflects a positive and significant coefficient on the demographic changes in communities coefficient. On the one hand, this might suggest that education organizations are prepared (financially speaking) to cope with shifting output demand from changing communities. On the other hand, this variable is significant within education only in the total net asset specification and not in the unrestricted net asset specification; it is not significant in the other specifications that ignore permanently restricted net assets. Hence, the net assets retained by education organization seem donor-imposed and permanently restricted, which

likely severely limits the extent to which these resources can be fully utilized in meeting these changing output needs.

The variables related to expansion show mixed results across the subsectors. The access to debt and borrowing cost variables are very consistent across all subsectors, indicating that the negative effect of each on net assets is consistent within the sector. Furthermore, the level of fixed assets is also consistently positive and significant across subsectors; this is not surprising given that these particular subsectors have higher average levels of fixed assets than other nonprofit subsectors: for example, the average fixed asset level in these four subsectors is between \$8,000 and \$9,000 (between 1999 and 2003), while the average fixed asset level for all other nonprofit subsectors is between \$3,300 and \$3,500 (also between 1999 and 2003). The amount of depreciation (approximating how much of these fixed assets has been used up) is generally significant and positive (as hypothesized) across the subsectors and across regression estimations, consistent with expectations. Nonprofits generally seem to retain some level of net assets to replace used up capital if necessary in the future.

In regards to the subsidization of clients variables (vector S), the change in welfare recipients per capita is consistently positive across all subsectors in the total net assets estimation, although it is not significant in the human services estimation. Human service organizations might be expected to retain net assets, especially to ensure necessary resources to subsidize clients in need. These results do not support this hypotheses, however. In the unrestricted net asset estimation, however, the consistency of this variable is not found, being significant only in the health subsector. This implies that the findings in the total net asset estimation – that nonprofits retain net assets to subsidize future clients – are related to donor restrictions requiring nonprofits to save these net assets. The results suggest, however, that the

bulk of these donor-imposed restrictions are permanent, so it is unclear how donors expect nonprofits to actually use these net assets to serve future clients. Perhaps the donors' intent is simply to ensure organizational survival (supported by permanently restricted donations) to help needy populations rather than funding the direct provision of services to the needy.

The change in the unemployment rate is significant and positive in the health subsector specification, the only instance in which the results support the hypothesis that nonprofits will accumulate net assets to hedge against uncertainly increased needy clients in the future. This increase in total net assets might suggest that health organizations increase net assets in anticipation of decreased ability to pay by possible clients. The change in unemployment rate is actually significant and negative in the education subsector. This might reflect that increased unemployment might lead to increased school enrollment (and, hence, more needy students with financial aid), as anecdotally suggested, or that education nonprofits simply do not hedge against this uncertainty.

Total net asset levels and the revenue uncertainty variables show consistency across estimations. Government funding tends to reduce total net asset levels, except in arts organizations – where the variable is not statistically different from 0. Perhaps arts organizations do not perceive government funding with the level of certainty as other nonprofit subsectors do, given the sometimes-contentious relationship between arts organizations and sponsoring governments.

The coefficients on the donation variable are consistently positive and relatively strong in the total net asset estimation, indicating that nonprofits do retain a portion of donations to hedge against future uncertainties with respect to donations. Arts organizations retain the lowest level of donations (0.07 percent for every one percent increase in donations), while education

organizations retain the highest level of donations (0.12 percent for every one percent increase in donations). These results do suggest that nonprofits do devote a significant portion of donations to current services.

The total net asset estimation, however, includes those donations restricted by donors. The unrestricted net asset estimation shows that the amount of retained net assets is much lower once the focus is on those unrestricted donations with which nonprofits may use as they see fit. The elasticity of retaining unrestricted net assets for education organizations is only 0.04 compared to 0.12 for restricted net assets, 0.03 versus 0.08 for health, and 0.08 versus 0.11 for human services. Clearly, donor-imposed restrictions are an important reason that certain subsectors have high levels of total net assets, as nonprofits appear to retain lower levels of unrestricted net assets.

Nonprofits also apparently view investment revenue as relatively uncertain revenue sources since all subsectors appear to retain significant levels of investment income. Human service organizations retain the lowest level, at 0.26 percent for every one percent increase in investment revenue, while education organizations (again) retain the highest level, at 0.38 percent for every one percent increase in investment income. These results suggest that while nonprofits do spend a majority of these investment revenues on current services, sizable amounts of investment revenues are being held in reserve against possible future losses in these revenues. Importantly, the investment income elasticities do not appear sensitive to the inclusion or exclusion of donor-imposed restrictions. Whereas retention amounts are largely driven by donor choice with respect to donation revenue, retention of investment income seems to be relatively independent of donor will. This likely indicates that donors are not restricting large amounts of permanently restricted donation earnings, allowing nonprofits instead to use these earnings as

desired.

Coefficients on self-funded revenues are consistently negative and significant. This might indicate that rather than nonprofits retaining net assets to hedge against the uncertainties of these self-generated revenues as hypothesized, nonprofits might view these self-generated revenues as a source of diversifying away other revenue uncertainties (such as from donations or investments). So rather than having to retain as many total net assets from riskier revenues, self-generated revenues might be perceived as more stable, less volatile, and more in the control of the organization – hence, the negative association with total net assets.

The coefficient on the Attorney General oversight variable is consistently negative as expected, but significant only in the Arts and Education subsectors. If Attorney Generals are drawn to more intensely oversee larger organizations with more donations and more name recognition, these two subsectors make sense. While Attorney General oversight is only marginally significant in the total net asset estimation for health organizations, it is significant at the one percent level in the unrestricted net asset estimation. This finding suggests that Attorney General oversight has a stronger effect on unrestricted net assets than total net assets for health organizations. This is especially odd given that health organizations have lower levels of donations than other nonprofits – only between \$1,600 and \$2,300 on average between 1999 and 2003, while other nonprofits average over \$5,000 in donations during the same period. To the extent that Attorney General oversight is primarily about protecting donors, health organizations should have lower levels of oversight. However, Attorneys General also have investigative powers in relation to public insurance payments to health organizations, and these net assets would be classified as unrestricted. Since health organizations have higher levels of self-generated funding – much of it from public insurance programs – it is reasonable that increased

Attorney General oversight would have a different and stronger effect on health organizations' unrestricted net assets. Overall, then, Attorney General oversight seems to have effects on nonprofits' net asset levels, but the effects are not identical across subsectors. This is unsurprising given that the oversight itself is likely not identical across subsectors. Attorney General oversight is not homogenous across the nonprofits sector and has a more nuanced effect.

Overall, the subsector analyses presented suggest that while some commonalities seem to exist between nonprofit subsectors, each tends to have unique characteristics that make testing hypotheses of a “nonprofit sector” difficult. These findings of different effects within different subsectors mirrors similar empirical findings in Tuckman and Chang (1992).

Policy Implications and Conclusions

This paper examines the determinants of nonprofit net assets within the framework of the uniqueness of nonprofit finance, in which donors can limit organizational discretion. Unlike for-profit firms, nonprofits do not necessarily have access to all resources held within the organization due to these donor restrictions. The results suggest that nonprofits increase total net asset levels to protect against future revenue uncertainty and to purchase and replace capital assets as future possible expansion demands it. In the first instance, total net assets act as a hedge against having to cut program services in the face of financial difficulties; in the latter, total net assets act as a source of funds to overcome incomplete capital markets – due largely to the nondistribution constraint (the lack of ownership structure) - for nonprofit organizations. When restrictions are removed from the analysis, the revenue uncertainty variables are still indicative of hedging behavior, but to a much lower extent. Overall, then, nonprofits have lower levels of

net assets for reserves than perhaps suggested because many of these net assets are not accessible to the organization. On the other hand, having access to debt appears to induce nonprofits to retain less, whether considering donor-imposed restrictions or not.

Several policy implications arise from these findings. First, if the contract failure theory of nonprofit organizations accurately describes the economic rationale for nonprofits, then nonprofits must inform donors and other stakeholders that net assets are necessary to ensure program continuity across times and during uncertain times. Recall, the contract failure theory rests on the notion that nonprofits are more trustworthy economic actors than for-profits. If donors, clients, or society at large lose confidence in the sector, then the rationale for the sector itself is eroded. For example, the Red Cross was publicly criticized when it intended to retain (as is organization policy) a portion of the donations it raised in the aftermath of the 9/11 terrorist attacks. Nonprofits need to publicly make the case for the importance of net assets – especially unrestricted net assets – by protecting programs from cuts due to fiscal shocks. Failing to do so may lead to a lack of public confidence in the sector and a questioning of the benefits received by nonprofits from the public at large. As suggested by Irvin (2007), a loss of confidence in the sector as a whole could lead to increased public regulation that is not necessarily appropriate for the entire sector.

Secondly, attempts to urge nonprofits to use their net assets for current spending, as recent Congressional actions suggest, should take into account the realities of the sector and the findings presented here. In this sample, the average nonprofit retains about two years worth of expenses when measured against total net assets, and only about one and one-half years worth of expenses when measured against unrestricted net assets. As noted by Fisman and Hubbard (2003), the National Center for Nonprofit Boards recommends that net assets not exceed two

years worth of expenses. In this regard, nonprofits in general seem to hold the proper suggested level of net assets. When restricted net assets are excluded, nonprofits in general appear to hold less than recommended for emergency situations. Recent public scrutiny of wealthy universities can distract from this reality, that the bulk of the sector does not have large endowments, does not maintain excessive levels of net assets, and appears to be hedging against potential revenue losses.

Third, calls for increased accountability of the nonprofit sector through increased state-level regulations – especially through Attorneys General offices – is likely to have a minimal effect on the accumulation of nonprofit net assets. The results of this analysis suggest that increased oversight does have an effect on net asset levels, but the effect is small. Further, between-state variation in Attorney General oversight is such that significant portions of the sector would likely see no change in their oversight regime. Echoing Irvin (2005), these results suggest that increased nonprofit regulation at the state level is unlikely to result in the policy shift desired (that is, a spenddown by wealthy organizations).

The results here do suggest, though, that organizational size (when measured by total revenues) is a strong determinant of net assets, be they restricted or unrestricted. Recent proposals to induce wealthy nonprofits to spend their net assets – such as requiring wealthy universities to spend five percent of net assets annually as foundations are required – perhaps are more appropriately focused. In other words, policies ought not to dampen net assets sectorwide since net assets can aid nonprofits in continuity of service provision; rather, policies should be progressive and tilted towards inducing larger and wealthier nonprofits into spending down their net assets.

The results presented here also suggest that the current economic recession coupled with

impaired credit markets have potentially serious consequences for the nonprofit sector.

Anecdotal accounts have emerged that “certain and safe” government funding has recently been delayed and even cut, while, simultaneously, banks have reduced loans and access to debt to nonprofits (Strom 2009). The findings here suggest that both government funding and access to debt reduce net asset levels, but now both are either limited or completely eliminated, leaving many organizations with reduced reserves. The real possibility emerges that nonprofits will choose (quite rationally) to increase net asset levels in response to this loss in government funding and access to debt – as the results here suggest they will - despite recent increases in demand for nonprofit output. Increased funding, in this case, may in part be used to shore up nonprofits rather than go completely to increased program services.

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Tables and Charts

Table 1: Variable Definitions

<u>Variable Name</u>	<u>Definition (line numbers refer to Form 990 fields)</u>
<i>Dependent Variables: Net Assets</i>	
$\log TNA_{it}$	Natural logarithm of End-of-Year Total Net Assets of organization i in year t (line 67b+68b+69b)
$\log UTNA_{it}$	Natural logarithm of End-of-Year Unrestricted plus Temporarily Restricted Net Assets of organization i in year t (line 67b+68b)
$\log UNA_{it}$	Natural logarithm of End-of-Year Unrestricted Net Assets of organization i in year t (line 67b)
<i>Independent Variables: Maximizing Preferences (Output) Variables - Q</i>	
$pcichangelag_{it}$	One year lag of year-over-year change in average per capita income by FIPS code, deflated using the CPI-U (base year = 1998)
$lagdeltayouth_{it}$	One year lag of year-over-year change in proportion of organization i 's FIPS code population aged 5 – 24
$lagdeltaelderly_{it}$	One year lag of year-over-year change in proportion of organization i 's FIPS code population aged 65 and older
$lagdelta_diversity_{it}$	One year lag of year-over-year change in racial concentration index of organization i in year t 's FIPS code, with the index defined as the $\Sigma (\text{Race}_j/\text{Total Population})^2$; index approaching 0 indicates racial diversity and index approaching 1 indicates racial homogeneity
<i>Independent Variables: Organizational Expansion - E</i>	
$accessdebt_{it}$	Dummy variable, coded 1 if organization i in year t reports long-term liabilities at the end of year $t-1$, 0 otherwise (line 64a or 64b)

logint_rate _{it}	Estimated cost of debt of organization <i>i</i> in year <i>t</i> , calculated as interest expense (line 41a)/beginning of year total liabilities (line 66a)
logFixed_Assets _{it}	Natural logarithm of land, buildings, and equipment of organization <i>i</i> in year <i>t</i> (line 57c)
logDepreciation _{it}	Natural logarithm of accumulated depreciation of organization <i>i</i> in year <i>t</i> (line 57b)
FAXDebt _{it}	Interaction term of logFixed_Assets and accesdebt
DepXDebt _{it}	Interaction term of logDepreciation and accesdebt

Independent Variables: Subsidization Variables - S

welfaredeltalag _{it}	One year lag in year-over-year change in per capita TANF population in organization <i>i</i> 's state
joblessdeltalag _{it}	One year lag in year-over-year change in unemployment rate in organization <i>i</i> 's state

Independent Variables: Revenue Variables - R

logGF _{it}	Natural logarithm of government contributions and grants of organization <i>i</i> in year <i>t</i> (line 1c)
logDon_Fund _{it}	Natural logarithm of direct public support of organization <i>i</i> in year <i>t</i> (line 1b)
logSelf_Fund _{it}	Natural logarithm of program service revenue + membership dues and assessments + gross revenue from special events and activities + gross profit or loss on sales of inventory + other revenue of organization <i>i</i> in year <i>t</i> (line 2 + 3 + 9a + 10c + 11)
logInvest_Fund _{it}	Natural logarithm of interest + dividends + gross rents + net gain or loss from sales of assets other than inventory + other investment income of organization <i>i</i> in year <i>t</i> (line 4 + 5 + 7 + 8d)

Independent Variables: Additional Control Variables - C

logTR _{it}	Natural logarithm of total revenues of organization <i>i</i> in year <i>t</i> ,
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(line 12)

AGOversight_{it} Index of State Attorney General powers ranging from 0 (lowest) to 8 (highest) for primary state of operations of organization *i* in year *t*

logemp_{it} Natural logarithm of number of employees reported by organization *i* in year *t*

Variable	1999				2003			
	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
logTNA	12.97	2.19	0.00	23.59	12.98	2.20	0.00	23.86
logUNA	12.63	2.20	0.00	23.18	12.66	2.20	0.00	23.15
logUTNA	12.87	2.17	0.00	23.41	12.89	2.18	0.00	23.68
pcichangelag	2.54	2.16	-17.90	34.91	-0.57	2.34	-28.57	29.62
lagdeltayouth	0.95	1.42	-7.06	12.00	0.21	1.80	-9.58	9.33
lagdeltaelderly	0.52	1.41	-21.89	25.17	0.68	1.45	-10.10	14.71
lagdelta_diversity	-0.01	0.01	-0.32	0.02	-0.01	0.01	-0.07	0.32
accessdebt	0.27	0.44	0.00	1.00	0.26	0.44	0.00	1.00
L1.logint_rate	-7.44	2.76	-16.69	-1.39	-7.54	2.68	-15.20	-1.39
L.logFixed_Assets	8.65	5.68	0.00	21.52	8.55	5.80	0.00	22.30
L1.logDepreciation	7.68	5.72	0.00	20.97	7.80	5.76	0.00	22.28
L1.FAXDebt	3.75	6.14	0.00	21.52	3.60	6.12	0.00	22.30
L1.DepXDebt	3.33	5.73	0.00	20.97	3.25	5.75	0.00	22.28
welfaredeltaag	-0.75	0.32	-2.13	0.17	-0.13	0.32	-1.11	0.32
joblessdeltaag	-0.45	0.29	-1.50	0.50	1.03	0.36	-0.20	1.90
L1.logGF	3.91	5.71	0.00	20.43	3.98	5.77	0.00	20.99
L1.logDon_Fund	8.44	5.09	0.00	20.39	8.66	5.04	0.00	21.16
L1.logSelf_Fund	9.88	5.13	0.00	23.24	9.87	5.14	0.00	22.46
L1.logInvest_Fund	8.02	3.96	0.00	21.46	6.52	4.16	0.00	21.24

L1.logTR	13.11	1.71	3.33	23.24	13.07	1.77	3.53	22.50
L1.logemp	1.07	1.72	0.00	10.23	1.36	1.82	0.00	10.40
L1.AGOversight	4.36	2.67	0.00	8.00	4.33	2.67	0.00	8.00

Table 3: Regression Results of the Determinants of Nonprofit Net Assets All Subsectors Included, 1999-2003

	logTNA	logUNA	logUTNA
pcichangelag	-0.001**	-0.000	-0.000
	(0.001)	(0.001)	(0.001)
lagdeltayouth	-0.003***	-0.001**	-0.002***
	(0.001)	(0.001)	(0.001)
lagdeltaelderly	-0.002***	-0.001*	-0.002***
	(0.001)	(0.001)	(0.001)
lagdelta_diversity	0.237***	-0.015	0.175**
	(0.067)	(0.075)	(0.068)
accessdebt	-0.156***	-0.146***	-0.151***
	(0.008)	(0.009)	(0.008)
L.logint_rate	-0.021***	-0.019***	-0.021***
	(0.001)	(0.001)	(0.001)
L.logFixed_Assets	0.260***	0.268***	0.256***
	(0.002)	(0.003)	(0.002)
L.logDepreciation	-0.002	0.017***	0.003
	(0.002)	(0.003)	(0.002)
L.FAXDebt	0.002	0.010***	0.005***
	(0.002)	(0.002)	(0.002)
L.DepXDebt	-0.012***	-0.020***	-0.015***
	(0.002)	(0.002)	(0.002)
welfaredeltalag	0.040***	0.015**	0.027***
	(0.007)	(0.007)	(0.007)
joblessdeltalag	-0.012**	-0.017***	-0.013***
	(0.005)	(0.005)	(0.005)
L.logGF	-0.033***	-0.036***	-0.031***
	(0.002)	(0.002)	(0.002)
L.logDon_Fund	0.104***	0.053***	0.092***
	(0.002)	(0.002)	(0.002)
L.logSelf_Fund	-0.033***	-0.002	-0.029***
	(0.002)	(0.002)	(0.002)

L.logInvest_Fund	0.328*** (0.002)	0.294*** (0.002)	0.303*** (0.002)
L.logTR	0.381*** (0.004)	0.348*** (0.004)	0.392*** (0.004)
L.AGOversight	-0.005*** (0.001)	-0.002 (0.001)	-0.004*** (0.001)
L.logemp	-0.022*** (0.003)	-0.005* (0.003)	-0.018*** (0.003)
Constant	1.386*** (0.067)	1.714*** (0.071)	1.464*** (0.067)
F-Test	11,140.88***	8,352.02***	10,489.91***
Subsector F-Test	141.91***	103.50***	131.14***
Year F-Test	906.40***	730.47***	826.86***
Observations	506,744	506,744	506,744
R-squared	0.73	0.68	0.72

Robust standard errors in parentheses

significant at 10%; ** significant at 5%; *** significant at 1%

Coefficients in bold represent those variable that switched sign and significance between the total and unrestricted net asset estimations.

Table 4: Regression Results of the Determinants of Nonprofit Total Net Assets, by Individual Subsectors, 1999-2003

	All Subsectors	Health	Human Services	Arts	Education
pcichangelag	-0.001** (0.001)	-0.003** (0.002)	-0.002 (0.001)	0.002 (0.002)	-0.001 (0.002)
lagdeltayouth	-0.003*** (0.001)	-0.005*** (0.002)	-0.001 (0.001)	-0.006*** (0.002)	-0.006*** (0.002)
lagdeltaelderly	-0.002*** (0.001)	0.003 (0.002)	-0.004** (0.002)	0.002 (0.002)	-0.002 (0.002)
lagdelta_diversity	0.237*** (0.067)	0.169 (0.211)	0.022 (0.152)	0.222 (0.190)	0.385** (0.161)
accessdebt	-0.156*** (0.008)	-0.173*** (0.026)	-0.213*** (0.015)	-0.155*** (0.026)	-0.197*** (0.024)
L.logint_rate	-0.021*** (0.001)	-0.028*** (0.004)	-0.022*** (0.002)	-0.026*** (0.003)	-0.025*** (0.003)
L.logFixed_Assets	0.260*** (0.002)	0.186*** (0.007)	0.307*** (0.005)	0.305*** (0.007)	0.212*** (0.006)
L.logDepreciation	-0.002 (0.002)	0.035*** (0.007)	0.024*** (0.006)	0.007 (0.006)	0.020*** (0.006)

L.FAXDebt	0.002	0.003	-0.001	0.019***	0.008**
	(0.002)	(0.005)	(0.004)	(0.005)	(0.003)
L.DepXDebt	-0.012***	-0.013***	-0.010**	-0.023***	-0.009**
	(0.002)	(0.005)	(0.004)	(0.005)	(0.004)
welfaredelta	0.040***	0.085***	0.005	0.034*	0.040**
	(0.007)	(0.019)	(0.014)	(0.020)	(0.017)
joblessdelta	-0.012**	0.060***	-0.039***	-0.005	-0.037***
	(0.005)	(0.014)	(0.010)	(0.015)	(0.012)
L.logGF	-0.033***	-0.045***	-0.031***	-0.006	-0.039***
	(0.002)	(0.006)	(0.005)	(0.007)	(0.006)
L.logDon_Fund	0.104***	0.083***	0.112***	0.065***	0.122***
	(0.002)	(0.004)	(0.003)	(0.006)	(0.004)
L.logSelf_Fund	-0.033***	-0.065***	-0.018***	-0.086***	-0.063***
	(0.002)	(0.006)	(0.004)	(0.007)	(0.005)
L.logInvest_Fund	0.328***	0.346***	0.262***	0.320***	0.380***
	(0.002)	(0.005)	(0.004)	(0.005)	(0.004)
L.logTR	0.381***	0.458***	0.327***	0.428***	0.404***
	(0.004)	(0.012)	(0.010)	(0.015)	(0.010)
L.AGOversight	-0.005***	-0.006*	-0.001	-0.011***	-0.006**
	(0.001)	(0.003)	(0.002)	(0.003)	(0.003)
L.logemp	-0.022***	-0.016**	-0.001	-0.000	-0.019***
	(0.003)	(0.007)	(0.006)	(0.009)	(0.006)
Constant	1.386***	1.585***	1.695***	1.300***	1.408***
	(0.067)	(0.103)	(0.077)	(0.108)	(0.092)
F-Test	11,140.88***	3,105.92***	3,023.75***	2,085.23***	6,073.42***
Year F-Test	141.91***	107.00***	122.80***	90.85***	220.47***
Subsector F-Test	906.40***	N/A	N/A	N/A	N/A
Observations	506,744	58,758	92,795	47,157	72,912
R-squared	0.73	0.78	0.72	0.74	0.81

Robust standard errors in parentheses
significant at 10%; ** significant at 5%; *** significant at 1%

	All Subsectors	Health	Human Services	Arts	Education
pcichangelag	-0.000	-0.003*	-0.001	0.003	0.000
	(0.001)	(0.002)	(0.001)	(0.002)	(0.002)
lagdeltayouth	-0.001**	-0.004*	-0.001	-0.005**	-0.000

	(0.001)	(0.002)	(0.001)	(0.002)	(0.002)
lagdeltaelderly	-0.001*	0.002	-0.003*	0.004*	-0.007***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
lagdelta_diversity	-0.015	0.197	-0.280*	0.310	-0.044
	(0.075)	(0.229)	(0.169)	(0.213)	(0.189)
accessdebt	-0.146***	-0.166***	-0.192***	-0.136***	-0.194***
	(0.009)	(0.028)	(0.016)	(0.028)	(0.027)
L.logint_rate	-0.019***	-0.024***	-0.019***	-0.026***	-0.021***
	(0.001)	(0.004)	(0.002)	(0.004)	(0.004)
L.logFixed_Assets	0.268***	0.207***	0.307***	0.329***	0.234***
	(0.003)	(0.008)	(0.006)	(0.008)	(0.007)
L.logDepreciation	0.017***	0.041***	0.032***	0.031***	0.057***
	(0.003)	(0.008)	(0.006)	(0.008)	(0.007)
L.FAXDebt	0.010***	-0.002	0.007	0.033***	0.021***
	(0.002)	(0.006)	(0.004)	(0.006)	(0.004)
L.DepXDebt	-0.020***	-0.010*	-0.017***	-0.035***	-0.025***
	(0.002)	(0.006)	(0.005)	(0.006)	(0.005)
welfareltag	0.015**	0.084***	0.008	0.022	-0.033*
	(0.007)	(0.021)	(0.015)	(0.023)	(0.020)
joblessdtag	-0.017***	0.065***	-0.040***	-0.023	-0.058***
	(0.005)	(0.015)	(0.011)	(0.017)	(0.014)
L.logGF	-0.036***	-0.042***	-0.042***	-0.017**	-0.013*
	(0.002)	(0.006)	(0.005)	(0.008)	(0.007)
L.logDon_Fund	0.053***	0.032***	0.079***	-0.008	0.041***
	(0.002)	(0.004)	(0.004)	(0.007)	(0.005)
L.logSelf_Fund	-0.002	-0.030***	-0.004	-0.079***	0.010*
	(0.002)	(0.007)	(0.005)	(0.008)	(0.006)
L.logInvest_Fund	0.294***	0.330***	0.250***	0.271***	0.310***
	(0.002)	(0.005)	(0.004)	(0.005)	(0.005)
L.logTR	0.348***	0.423***	0.312***	0.433***	0.316***
	(0.004)	(0.012)	(0.011)	(0.016)	(0.012)
L.AGOversight	-0.002	-0.009***	0.000	-0.006*	0.002
	(0.001)	(0.003)	(0.002)	(0.004)	(0.003)
L.logemp	-0.005*	-0.002	0.009	-0.018*	0.004
	(0.003)	(0.007)	(0.007)	(0.011)	(0.007)
Constant	1.714***	1.740***	1.936***	1.511***	1.808***
	(0.071)	(0.108)	(0.086)	(0.124)	(0.106)

F-Test	8,352.02***	2,867.62***	2,410.46***	1,305.42***	3,322.38***
Year F-Test	103.50***	85.89***	117.32***	63.30***	158.02***
Subsector F-Test	730.47***	N/A	N/A	N/A	N/A
Observations	506,744	58,758	92,795	47,157	72,912
R-squared	0.68	0.76	0.68	0.67	0.73

Robust standard errors in parentheses
significant at 10%; ** significant at 5%; *** significant at 1%

Table 6: Regression Results of the Determinants of Nonprofit Unrestricted plus Temporarily Restricted Net Assets, by Individual Subsectors, 1999-2003

	All Subsectors	Health	Human Services	Arts	Education
pcichangelag	-0.000	-0.003*	-0.001	0.003*	0.001
	(0.001)	(0.002)	(0.001)	(0.002)	(0.002)
lagdeltayouth	-0.002***	-0.004**	-0.001	-0.006***	-0.003*
	(0.001)	(0.002)	(0.001)	(0.002)	(0.002)
lagdeltaelderly	-0.002***	0.002	-0.004**	0.001	-0.004**
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
lagdelta_diversity	0.175**	0.177	0.020	0.224	0.196
	(0.068)	(0.213)	(0.156)	(0.193)	(0.167)
accessdebt	-0.151***	-0.173***	-0.201***	-0.144***	-0.182***
	(0.008)	(0.026)	(0.015)	(0.026)	(0.024)
L.logint_rate	-0.021***	-0.027***	-0.022***	-0.025***	-0.025***
	(0.001)	(0.004)	(0.002)	(0.003)	(0.003)
L.logFixed_Assets	0.256***	0.187***	0.303***	0.305***	0.217***
	(0.002)	(0.007)	(0.006)	(0.007)	(0.006)
L.logDepreciation	0.003	0.034***	0.022***	0.013*	0.025***
	(0.002)	(0.008)	(0.006)	(0.007)	(0.006)
L.FAXDebt	0.005***	0.001	0.003	0.025***	0.011***
	(0.002)	(0.005)	(0.004)	(0.005)	(0.004)
L.DepXDebt	-0.015***	-0.011**	-0.013***	-0.027***	-0.014***
	(0.002)	(0.005)	(0.004)	(0.005)	(0.004)
welfareltag	0.027***	0.086***	0.004	0.039*	-0.003
	(0.007)	(0.019)	(0.014)	(0.021)	(0.017)
joblessdeltalag	-0.013***	0.064***	-0.039***	-0.013	-0.047***
	(0.005)	(0.014)	(0.010)	(0.015)	(0.012)
L.logGF	-0.031***	-0.043***	-0.030***	0.001	-0.029***
	(0.002)	(0.006)	(0.005)	(0.007)	(0.006)
L.logDon_Fund	0.092***	0.072***	0.106***	0.043***	0.097***
	(0.002)	(0.004)	(0.004)	(0.006)	(0.004)

L.logSelf_Fund	-0.029*** (0.002)	-0.063*** (0.006)	-0.018*** (0.004)	-0.093*** (0.007)	-0.044*** (0.005)
L.logInvest_Fund	0.303*** (0.002)	0.334*** (0.005)	0.250*** (0.004)	0.281*** (0.005)	0.333*** (0.004)
L.logTR	0.392*** (0.004)	0.468*** (0.012)	0.336*** (0.010)	0.463*** (0.015)	0.408*** (0.011)
L.AGOversight	-0.004*** (0.001)	-0.006* (0.003)	-0.002 (0.002)	-0.008** (0.003)	-0.003 (0.003)
L.logemp	-0.018*** (0.003)	-0.014** (0.007)	0.001 (0.006)	-0.009 (0.009)	-0.017*** (0.006)
Constant	1.464*** (0.067)	1.567*** (0.102)	1.736*** (0.078)	1.229*** (0.111)	1.447*** (0.094)
F-Test	10,489.91***	3,078.28***	2,878.55***	1,876.76***	5,108.13***
Year F-Test	131.14***	100.37***	119.20***	74.86***	203.50***
Subsector F-Test	826.86***	N/A	N/A	N/A	N/A
Observations	506,744	58,758	92,795	47,157	72,912
R-squared	0.72	0.78	0.71	0.72	0.79

Robust standard errors in parentheses
significant at 10%; ** significant at 5%; *** significant at 1%

¹ Not all income tax filers itemize, and some income tax peculiarities – such as the Alternative Minimum Tax – can reduce the value of deductions. However, the point stands that governments collect less taxes because of the existence of tax deductibility.

² For example, one New York City nonprofit organization had received a City contract in 1997 to house homeless people living with HIV. The organization was engaged in advocacy activities that City administrators did not approve of. After the nonprofit organization had spent \$600,000 (a sizable portion of their operating budget), the City refused to reimburse the organization. The nonprofit organization sued the City and the case was settled out of court nearly ten years later.

³ While managers are unable to benefit through an equity stake in the organization, they might instead seek increased salaries or perquisites. These agency problems of the nonprofit firm are addressed in the section describing nonprofit behavior.

⁴ Concerns about the data in the Form 990 have been raised (see Lampkin and Boris 2002 for a cataloguing of potential limitations). Despite the limitations, Froelich and Knoepfle (1996) and Froelich, Knoepfle, and Pollack (2000) found that Form 990 data are generally accurate. Further, the Form 990 databases are widely used by academic researchers. Chang and Tuckman (1990), Tuckman and Chang (1992), Chang and Tuckman (1996), and Fisman and Hubbard (2002, 2003, 2005) have all utilized Form 990 data to test their hypotheses regarding nonprofit retained earnings.

⁵ The results are largely unchanged when the current (not lagged) variables are used.

⁶ Average per capita income is used as a measure of desired nonprofit output level in

Netzer (1992), Chang and Tuckman (1996), Corbin (1999), and Andreoni and Payne (2003), among others.

⁷ Tuckman and Chang (1992) do not indicate whether the beginning of year or end of year liability balance is used in calculating the interest rate proxy. Interest cost for the year should depend upon the beginning of year balance, and that is the specification used in the current analysis.

⁸ One shortcoming of the data is that only realized investment gains or losses are reported, whereas GAAP accounting requires unrealized gains or losses to also be reported.

⁹ An alternative definition of size is Total Assets. Regressions using the natural log of Total Assets were estimated as well. The results suggested significant multicollinearity between Total Assets and other independent variables, to the extent that the coefficients could not be accurately estimated.

¹⁰ Variables with \$0 values were replaced with \$1 to avoid losing observations when transforming variables with logarithms.

¹¹ Dummy variables are interpreted as suggested by Kennedy (1981) as: $g = \exp(c - 1/2 V) - 1$ where g is the estimated elasticity, c is the regression coefficient, and V is the variance of the regression coefficient.