

Testing Competing Capital Structure Theories of Nonprofit Organizations

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The static trade-off and pecking order capital structure theories are analyzed and applied to nonprofit organizations. In addition, this paper also considers how nonprofits adjust their leverage over time. The analyses consider the unique role of donor-restricted endowments in the decision to borrow, as well as different types of borrowing by nonprofits. The results indicate that nonprofit capital structure choices are best explained using the pecking order theory, in which internal funds are preferred over external borrowing. Further, nonprofit endowment is not found to increase leverage. Despite the unambiguous findings across varying definitions of leverage, the results also suggest that a “modified pecking order” is a more apt descriptor of nonprofit behavior.

INTRODUCTION

Nonprofit organizations can finance their operations and capital investment through internal funds (such as accumulated profits), external funds (such as debt), or some combination of the two. The current nonprofit finance literature offers two competing theories that explain financing decisions: the static trade-off and pecking order theories. The static trade-off theory proposes that nonprofit managers balance the costs and benefits of debt to reach an optimal leverage level, while the pecking order theory suggests that managers simply prefer internal funds to external borrowing. This paper analyzes whether leverage varies across nonprofits as predicted by one of these competing theories, and also how nonprofits adjust their capital structures over time.

Nonprofit capital structure is complicated by the existence of endowments, which are donor-restricted resources intended to generate income for a nonprofit; unlike other assets owned by nonprofits, endowments cannot be expended as the nonprofit might wish, and in many circumstances cannot be used directly as collateral for debt. While this uniquely

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nonprofit financial feature has been shown to affect capital structure, data on endowments is not widely available and, therefore, has not been included as part of capital structure analyses except for Bowman.¹ Using a more representative sample of nonprofit organizations and a precise accounting definition of true endowment, this paper is able to incorporate endowment effects into the empirical analysis.

The results indicate that nonprofit capital structure choices are best explained by the pecking order theory. Further, nonprofit endowment is not found to increase leverage. Despite the unambiguous findings across varying definitions of leverage, the results also suggest that a “modified pecking order” is a more apt descriptor of nonprofit behavior. In this understanding, nonprofits do prefer internal financing to external financing, but also prefer to maintain some amount of internal pools of capital (for future growth, as a rainy day fund, etc.) and do not treat internal and external funds as perfect substitutes. In this understanding of nonprofit capital structure and adjustment, nonprofits may believe that having no internal capital to draw upon in the future is so costly that they assume lower cost now in the form of some leverage to maintain some level of internal resources.

The rest of the paper proceeds as follows. An overview of nonprofit capital structure is outlined, followed by a theoretical discussion of the two dominant capital structure theories. The next section discusses in detail endowment, the use of restricted gifts as collateral, bankruptcy protections of restricted gifts, and the potential effect these factors might have on nonprofit capital structure. Different types of debt available to nonprofits are then discussed. The existing literature and its limitations are addressed, followed by a description of the data, variable definitions, and empirical strategy. The results and discussion follow, ending with possible future research intended to continue clarifying the role of debt in nonprofit finance.

FINANCING STRATEGIES IN NONPROFIT ORGANIZATIONS

An organization’s financing decisions is best summarized using the fundamental accounting equation:

$$\text{Assets} = \text{Liabilities} + \text{Equity} \quad (1)$$

Assets—such as capital investments as well as working capital—need to be financed either through borrowing (liabilities) or accumulated net wealth (equity); the use of existing wealth for capital expansion is commonly known as pay-as-you-go financing. Borrowing can be

1. Woods Bowman, “The Uniqueness of Nonprofit Finance and the Decision to Borrow,” *Nonprofit Management and Leadership* 12, no. 3 (2002): 293–311.

either short term or long term in nature (a line of credit versus a mortgage, e.g.), and equity is accumulated through paid-in capital from investors or retained earnings from having revenues in excess of expenses. A firm's capital structure simply refers to this combination of debt and equity.²

In the context of nonprofit organizations, "equity" is termed "net assets," and paid-in capital is nonexistent (since there are no owners of investors). Further, the "nondistribution constraint," which prohibits the distribution of operating profits to owners keeps net assets (wealth) within the nonprofit as a financing source.³ Although nonprofit organizations lack investors and paid-in capital, they do have donors who might provide an organization with capital (contributions); unlike an investor, however, a donor cannot remove past donations and does not expect to receive a future financial return (such as a dividend) from the nonprofit.

When considering capital expansion, nonprofits may consider the use of debt, as other firms do. Capital financing theory indicates debt is an advantageous financing choice for such expenditures. In using debt, the nonprofit does not force current users of the asset to bear all of its cost while gaining only a fraction of its benefits; further, the use of debt does not require a nonprofit from using up large amounts of current resources that are necessary for operations. On the other hand, avoiding debt and using accumulated net assets uses up current resources but eliminates future debt payments, thereby freeing up future revenues and wealth for other operating purposes.⁴ For nonprofits, then, capital expansion is dependent upon large reserves of wealth on which to draw, the ability to generate large reserves (as in a capital campaign), debt, or a combination of wealth and debt. Because most nonprofits lack significant wealth,⁵ debt is crucial for capital investment. Whereas leverage may be desirable in the for-profit sector as a means of maximizing profitability, Jegers demonstrates that debt issuances help nonprofits maximize programmatic growth.⁶ Therefore, understanding the financing decisions made by nonprofits helps us understand not only their capital choices, but also how nonprofits can provide the maximum sustainable provision of public goods and services.

2. Ibid.

3. Henry Hansmann, "The Role of Nonprofit Enterprise," *The Yale Law Journal* 89, no. 5 (1980): 835–901.

4. Wenli Yan, Dwight V. Denison, and J. S. Butler, "Revenue Structure and Nonprofit Borrowing," *Public Finance Review* 37, no. 1 (2009): 47–67.

5. Defining available wealth as in Nicholas P. Marudas, "Effects of Nonprofit Organization Wealth and Efficiency on Private Donations to Large Nonprofit Organizations," *Research in Government and Nonprofit Accounting*, 11 (2004): 71–91, as (Unrestricted and Temporarily Restricted Net Assets)/(Total Expenses – Fundraising Expenses), the median nonprofit in the sample has approximately six months of accumulated wealth to draw upon, much lower than the three years suggested by the Better Business Bureau and the American Institute of Philanthropy.

6. Marc Jegers, "The Sustainable Growth Rate of Non-Profit Organisations: The Effect of Efficiency, Profitability, and Capital Structure," *Financial Accountability & Management* 19, no. 4 (2003): 309–313.

THEORIES OF CAPITAL STRUCTURE

Static Trade-Off Theory

Two dominant theories of financing decision-making have dominated both the corporate and nonprofit literature.⁷ The first is the static trade-off theory, in which firms determine an optimal amount of debt by comparing the costs and the benefits of the debt. A more profitable firm can take on greater leverage (for growth purposes or even simply to enhance profitability through leverage); therefore, increasing profitability leads to greater leverage, all else equal.

In the for-profit sector, the interest expense on the debt is tax deductible (thereby reducing the firm's tax liability), thereby reducing the effective price of using debt relative to equity. This reduction in operating expenses is a major benefit of debt usage. Although nonprofits are exempt from corporate and income taxes, Denison points out that nonprofits with taxable unrelated business activities may have an incentive to issue debt as a means of reducing tax liabilities generated from these ventures.⁸ Omer and Yetman find that nonprofits shift many expenses that are shared between taxable and tax-exempt activities to taxable activities, thereby reducing nonprofits' tax liabilities.⁹ Such evidence is indicative of nonprofits engaging in such tax minimizing behavior.

An additional benefit of debt is that an organization's free cash flow is reduced. Agency theory suggests that managers (agents) seek increased cash flow even when profitable growth opportunities do not exist, so that such cash flow can be used for perquisites rather than for enhancing firm value (i.e., at the expense of the owners, the principles). These agency problems also exist in nonprofits between governance bodies and management (see, e.g., Steinberg).¹⁰ Debt, then, may act as a control to ensure that managers use free cash to service debt rather than invest in unprofitable projects that generate cash so that salaries or perquisites may be enhanced.¹¹

The primary cost of debt is the potential for financial distress. Borrowing creates fixed and rigid payment schedules; even if larger economic events occur that reduce organizational revenues, debt service must be maintained. While such financial distress negatively affects a for-profit firm's market value, nonprofits lack such a market value (or, perhaps more correctly, their true market value is unknown). Fama and Jensen hypothesize, however, that nonprofit boards seek to protect donations (a major source of equity) in a manner

7. In the corporate literature, additional capital structure theories have been proposed and tested. The two mentioned here, though, are the most significant and important.

8. Dwight V. Denison, "Which Nonprofit Organizations Borrow?" *Public Budgeting and Finance* 29, no. 3 (2009): 110–123.

9. Tom C. Omer and Robert J. Yetman, "Near Zero Taxable Income Reporting by Nonprofit Organizations," *Journal of the American Taxation Association* 25, no. 2 (2003): 19–34.

10. Richard Steinberg, "Profits and Incentive Compensation in Nonprofit Firms," *Nonprofit Management and Leadership* 1, no. 2 (1990): 137–152.

11. Bowman, "Uniqueness of Nonprofit Finance," 300.

comparable to a business seeking to minimize the financial vulnerability of the firm.¹² The costs of financial distress for a nonprofit might include increased borrowing costs, inability to access credit when needed (resulting in missed investment opportunities), legal fees, asset liquidations, loss of retained net assets, and, subsequently, loss of future donors.

In capital structure theory, financing costs are also an important consideration. A firm may have optimal leverage targets, but be prevented from using certain types of debt due to the cost of using these debt instruments. For example, there are usually significant issuance fees associated with a bond issue (e.g., fees for underwriters, bond raters, insurers, etc.), fewer for a mortgage, and even fewer for a note.

Pecking Order Theory

The pecking order theory is an alternative explanation to predict organizational leverage. Unlike the static trade-off theory, increased profitability is expected to result in a decline in leverage, because a more profitable firm is better able to finance capital needs with internal financial resources (such as retained earnings). At the core of the pecking order theory is the notion that leverage decisions are driven by information asymmetry between management and investors: because investors will view equity (stock) issuances negatively, firms will prefer to finance capital from retained earnings, then debt, and, only having exhausted these options, new equity.¹³

Similarly, nonprofits may prefer to finance capital expansion through internal capital generated from operating profits because of information asymmetries. In the nonprofit sector, only unrestricted profits can be used as an internal capital source in this manner. Just as managers in the for-profit sector may have more information about their firm that allows them to capitalize on opportunities, nonprofit managers often have information about the social benefits of their organizations' programs; however, these benefits are less observable and measurable than in the private sector.¹⁴ Further, nonprofit managers may be wary of tarnishing their own or organization's reputation by defaulting on debt obligations, making such managers prefer internal financing to avoid these costs of default.¹⁵ Information asymmetry, therefore, may be a significant obstacle to external financing for nonprofits. The potential information asymmetry is further complicated because donors may be more or less involved in the governance of the nonprofit; as noted by Denison, donors willing to give large restricted donations often exercise considerable oversight of the nonprofit

12. Eugene F. Fama and Michael C. Jensen, "Separation of Ownership and Control," *Journal of Law and Economics* 26, no. 2 (1983): 301–325.

13. Stewart C. Myers and Nicholas S. Majluf, "Corporate Financing and Investment Decisions When Firms Have Information that Investors Do Not Have," *Journal of Financial Economics* 13 (1984): 187–221.

14. George C. Triantis, "Organizations as Internal Capital Markets: The Legal Boundaries of Firms, Collateral, and Trusts in Commercial and Charitable Enterprises," *Harvard Law Review* 117 (2004): 1102–1162.

15. Bowman, "Uniqueness of Nonprofit Finance," 299.

(decreasing the potential information asymmetry), while small donors frequently provide no oversight at all (implying an increase in this potential information asymmetry).¹⁶ Further, some nonprofits may have donors willing to finance a capital campaign, thereby reducing or eliminating the need to ever enter debt markets.¹⁷ Capital campaigns, unlike routine fundraising activities, tend to solicit large and multiyear pledges from donors specifically for investment in property or improvements (so-called “bricks and mortar campaigns”). This option, however, is generally unavailable to small nonprofits that lack adequate donor pools, long-range planning skills, solicitation tools, cost analysis techniques, and staff devoted to managing the endeavor.¹⁸

Overall, the pecking order theory of capital financing suggests that nonprofits have no target leverage and instead prefer internal (accumulated unrestricted profits) to external (borrowing) capital. The information asymmetries causing this preference in the nonprofit sector, however, are different than those found in the corporate sector because of less-observable benefits to outsiders, and also because of variation in donor oversight, willingness, and ability to finance capital.

NONPROFIT CAPITAL STRUCTURE AND ENDOWMENTS

An important difference between nonprofits and for-profits is that nonprofits may hold endowments, which is rare among for-profits. Bowman points out that because nonprofits have no owners, these endowments do not invite takeovers by other organizations as they would in the for-profit sector;¹⁹ he also empirically shows that endowments are an important variable in a nonprofit’s decision to use debt or not. A significant minority of nonprofits actually own endowments; nearly 19 percent of nonprofit organizations contained in the final sample report holding endowments (defined as permanently restricted net assets).

Prior research indicates that endowments serve as buffers for fiscal shocks to nonprofits’ revenue streams.²⁰ Endowments are intended to provide income (from interest, dividends, and gains) that a nonprofit can use for programmatic output or for growth in its asset base. Endowment, therefore, is part of a nonprofit’s capital structure, but also part of its revenue generation.²¹ Funds restricted by donors are technically termed endowments or

16. Denison, 114.

17. Ibid.

18. Diana S. Newman, “The Risk of Capital-Campaign Fatigue,” *The Chronicle of Philanthropy*, August 4, 2005, sec. Endowments, p. B22. Data on capital campaigns are not available for inclusion in the proposed empirical model.

19. Bowman, “Uniqueness of Nonprofit Finance,” 296.

20. See Henry Hansmann, “Why Do Universities Have Endowments?” *Journal of Legal Studies* 19 (1990): 3–42; and Raymond Fisman and R. Glenn Hubbard, “Precautionary Savings and the Governance of Nonprofit Organizations,” *Journal of Public Economics* 89 (2005): 2231–2243.

21. Woods Bowman, “Managing Endowment and Other Assets,” in *Financing Nonprofits: Putting Theory Into Practice*, ed. Dennis R. Young (Lenham, MD: Rowman-Altamira Publishing, 2007).

true endowments, while resources restricted by the organization itself (presumably by the board) are technically unrestricted and referred to as quasi-endowments. Bowman suggests that endowed nonprofits can best be thought of as having an operating entity (for the day-to-day programmatic functions of the organization) and a customized mutual fund generating investment earnings for this operating entity.²² Rather than separating the organization on operations versus endowments, another framework might differentiate between those resources that are controllable or available to managers and creditors versus those that are unavailable or protected from these same actors. Since capital structure focuses on financing policies of organizations, this alternate framework focuses on how nonprofit managers use available resources; it also brings the nonprofit financial reporting model—which is also focused on available and restricted resources—explicitly into the capital structure analysis.

The distinction between available and restricted is not just a simple analytic framework; there are legal consequences to these distinctions with respect to capital structure as well. While an organization might liquidate and expend a quasi-endowment with no legal ramifications—as a nonprofit in financial distress might do—such an action may not be permitted for a true restricted endowment. Unrestricted quasi-endowments may easily serve as collateral for borrowing; however, restricted endowed assets may require court permission for such use. Pledging a restricted donation as collateral for purposes unrelated to the donor’s intent might be viewed by state Attorneys General or the courts as an unacceptable deviation from the donor’s intent;²³ a nonprofit with true endowment may own a significant asset with no collateral value.²⁴ Even if such borrowing were consistent with donor intent, lenders may be reluctant to enter into borrowing contracts with restricted assets serving as the collateral. Tuckman and Chang note that banks are reluctant to lend in these circumstances because their ability to lay claim to these restricted assets is difficult, and they

22. Bowman, “Uniqueness of Nonprofit Finance,” 296–297.

23. Evelyn Brody, “Charitable Endowments and the Democratization of Dynasty,” *Arizona Law Review* 39, no. 3 (1997), 873–948 ; see 888–892 specifically. Evelyn Brody, “The Charity in Bankruptcy and Ghosts of Donors Past, Present, and Future,” *Seton Hall Legislative Journal* 29, no. 2 (2005): 471–530; see 487 specifically. Also, see Triantis, 1150–1155.

24. For example, the New York State Attorney General explicitly states that “the use of endowment funds as collateral for a loan is an invasion that requires court approval” (New York State Office of the Attorney General, Charities Bureau, *A Guide for New York Not-for-Profit Corporations Considering the Expenditure of Endowment or Other Restricted Funds*, 2009; available from: <http://www.charitiesnys.com/pdfs/Endowment%20Guide.pdf>, 2; accessed 17 December 2010). Triantis gives several examples of court cases involving nonprofit organizations in which restricted assets were either unable to be pledged as collateral or were protected through a nonprofit’s bankruptcy proceedings (1153). Brody, “Charity in Bankruptcy,” discusses the legal and ethical considerations of using museum collections as collateral (485–486). Lelia Helms, Alan B. Henkin, and Kyle Murray, “Playing by the Rules: Restricted Endowment Assets in Colleges and Universities,” *Nonprofit Management and Leadership* 15, no. 3 (2005): 341–356 discuss how restrictions on assets complicate asset usage by nonprofits.

would suffer bad publicity in trying to claim its collateral from a failed nonprofit.²⁵ Even spending restricted endowment to keep a nonprofit from ceasing to exist often involves court or Attorney General involvement, and is not certain.²⁶

Although creditors cannot force a nonprofit into bankruptcy (Chapter 7), the organization can enter voluntarily (Chapter 11),²⁷ and it can certainly default on its debt obligations. Creditors in either situation may have a claim on the nonprofit's assets; however, the courts have extended bankruptcy protection to the principal of restricted gifts. Thus, while a creditor may seize the income generated from restricted endowments, the restricted asset itself is often legally protected.²⁸ True endowment—which is part of the nonprofit capital structure—is often not available for direct support of debt. Because financial distress is a major cost of debt, the existence of a restricted endowment complicates any analysis of nonprofit leverage, because it—unlike a quasi-endowment—will generally be exempt from such costs. Restricted endowments, however, may generate unrestricted income for the nonprofit, which subsequently releases other operating assets for collateral purposes that would otherwise be unavailable.²⁹ This possibility suggests that nonprofit with restricted endowments may increase leverage as a result of these restricted assets, even if direct collateralization is not possible. On the other hand, endowed nonprofits, by virtue of investment income from the endowment, may need and use debt less than nonprofits without endowments. The theoretical effect of endowment on borrowing is ambiguous because of these competing forces, yet it is clear that endowment should influence a nonprofit's borrowing decision.

NONPROFIT CAPITAL STRUCTURE AND TYPES OF DEBT

An additional consideration is that unlike for-profit firms in general, nonprofits may be able to access the tax-exempt municipal debt market. These debt obligations carry lower interest costs to the issuer since the interest is exempt from investors' taxable federal (and in some cases, state and local) income taxes. Access to this debt, however, is limited because such

25. Howard P. Tuckman and Cyril F. Chang, "Accumulating Financial Surpluses in Nonprofit Organizations," in *Governing, Leading, and Managing Nonprofit Organizations*, eds. Dennis R. Young, R.M. Hollister, and V. Hodgkinson (San Francisco: Jossey Bass Publishers, 1993): 253–278.

26. Brody, "Charity in Bankruptcy," provides several case examples in which the desire to maintain donor intent has led courts to impede nonprofits' use of restricted endowments in times of fiscal stress; see 483–485.

27. Robert J. Yetman, "Borrowing and Debt," in *Financing Nonprofits: Putting Theory Into Practice*, ed. Dennis R. Young (Lenham, MD: Rowman-Altamira Publishing, 2007).

28. Triantis, 1153. Also, Brody, "Charity in Bankruptcy," notes that the case *Hobbs v. Board of Education of Northern Baptist Convention* (1934) established the argument that donor-restricted contributions should not be distributed to creditors in bankruptcy cases (487). Evelyn Brody, "The Legal Framework for Nonprofit Organizations," in *The Nonprofit Sector: A Research Handbook*, 2nd ed., eds. Walter W. Powell and Richard Steinberg (New Haven: Yale University Press, 2006): 243–266.

29. This is also noted in Standard and Poor's, *Public Finance Criteria* (New York: McGraw-Hill Companies, 2007), 179.

borrowings must be issued through a government conduit (usually a public authority), and also because the cost savings are only realizable if a large amount of money is borrowed.³⁰

In addition to tax-exempt borrowing, nonprofits may also use mortgages or notes to finance capital expenditures. Bowman³¹ also points out that nonprofits often acquire capital assets with short-term debt; hence, capital financing may not even include bonds, mortgages, or notes at all and may include such mundane sources of borrowing as “accounts payable.”³² Another complicating consideration of nonprofit capital structure, then, is the manner in which nonprofits might choose to finance capital—through conventional financial debt instruments or through other (nonfinancial) liability accounts. This indicates that how capital structure is defined is an important consideration in any empirical analysis.

LIMITATIONS OF EXISTING LITERATURE

Much of the existing literature on nonprofit borrowing has focused on hospitals exclusively.³³ While these analysis are theoretically important for identifying motivational differences between nonprofits and for-profit firms, hospitals are unrepresentative of the sector as a whole in several important ways: they are larger in general (the average total assets for hospitals in the current sample, e.g., are nearly \$56 million compared to \$14.2 million for all nonprofits), derive more of their revenue from programs and investments than other nonprofits on average (on average, nearly 60 percent of hospital revenues are derived from these sources, compared to less than 30 percent for nonprofits in general) have more stable revenues which makes securing debt easier,³⁴ and better accounting systems than other

30. Bowman, “Uniqueness of Nonprofit Finance,” 297.

31. Bowman, “Uniqueness of Nonprofit Finance,” 303.

32. For example, a nonprofit might acquire a computer (capital) from a retail store and purchase it on credit (accounts payable). Hence, capital assets are acquired with no long-term debt instrument. An empirical explanation is also possible. The inverse of Total Liabilities/Total Assets is Total Equity/Total Assets. In Ivo Welch, “A Bad Measure of Leverage: The Financial Debt-to-Asset Ratio,” (2010) available from: <http://ssrn.com/abstract=931675>; accessed 17 December 2010. SSRN-id931675.pdf, Welch points out that regressing Total Equity (Net Assets)/Total Assets on Financial Debt/Total Assets will indicate the extent that organizations substitute nonfinancial debt for financial debt. A coefficient near 1 with an R^2 close to 1 would indicate no such substitution occurs on average, because the variation is wholly explained by financial debt. For the final sample in this paper, such an analysis produces a coefficient of -0.9 and an R^2 of only 0.31 . Nonfinancial debt does seem to substitute for financial debt in the nonprofit sector, as Bowman suggests.

33. Gerard J. Wedig, Frank A. Sloan, Mahmud Hassan, and Michael A. Morrissey, “Capital Structure, Ownership, and Capital Payment Policy: The Case of Hospitals,” *The Journal of Finance* 43, no. 1 (1988): 21–40; Peter W. Bacon, “Do Capital Structure Theories Apply to Nonprofit Hospitals,” *Journal of the Midwest Finance Association* (1992): 86–90; Gerard J. Wedig, Mahmud Hassan, and Michael A. Morrissey, “Tax-Exempt Debt and the Capital Structure of Nonprofit Organizations: An Application to Hospitals,” *The Journal of Finance* 51, no. 4 (1996): 1247–1283; William M. Gentry, “Debt, Investment, and Endowment Accumulation: the Case of Not-for-Profit Hospitals,” *Journal of Health Economics* 21 (2002): 845–872.

34. Yan et al., 51.

nonprofits.³⁵ Hence, the generalizability of these studies to other types of nonprofits is limited.

To date, only three studies have examined the nonprofit sector in whole with respect to leverage: Bowman,³⁶ Jegers and Verschueren,³⁷ and Denison.³⁸ Both Bowman and Denison test their models using Statistics of Income (SOI) data, which are generally limited to large nonprofits with more than \$10 million in assets (in which endowed organizations may be overrepresented). Jegers and Verschueren use the more representative Core data file, but limit their analysis to a single year of data within a single state. The state of nonprofit capital structure research focused on the 97 percent of nonprofits reporting less than \$10 million in assets is extremely limited.³⁹

Only Bowman controls for endowment effects in analyzing sector-wide capital structure; the variable, however, is a proxy and captures operating reserves as well as true endowment.⁴⁰ Further, the SOI data do not distinguish between restricted and unrestricted net assets, preventing an analysis that differentiates between true endowment and quasi-endowment. Since restricted endowment is difficult to borrow against, and also better protected from financial distress costs—both of which should influence nonprofit financing decisions—the inability to segregate these resources has meant a uniquely nonprofit capital structure issue has not been explored. In addition, only unrestricted profits are potentially available to collateralize (trade-off theory) or use in lieu of borrowing (pecking order theory), and the current literature—due to data constraints—has not been able to define profitability excluding restricted (and unavailable) profits.

Since financing costs of debt may be significant, these costs may be especially relevant for testing existing theories of capital structure. If nonprofits do have targets for leverage, such financing costs likely affect adjustments toward these targets. In fact, if these financing costs are significant enough, they may completely overwhelm any potential benefits of debt. None of the existing literature has explicitly examined how nonprofits adjust their capital structures over time, providing evidence of the stickiness or flexibility of these capital financing decisions.

Finally, the limited empirical tests of nonprofit capital structure have varied what types of liabilities are included in the capital financing decision. For example, Bowman models

35. Gentry, 854.

36. Bowman, “Uniqueness of Nonprofit Finance.”

37. Marc Jegers and Ilse Verschueren, “On the Capital Structure of Non-Profit Organisations: An Empirical Study for Californian Organisations,” *Financial Accountability & Management* 22, no. 4 (2006): 309–328.

38. Denison (2009).

39. Based on the Internal Revenue Service (IRS), Exempt Organization Business Master File, April 2010; available from the National Center for Charitable Statistics, at <http://nccsdataweb.urban.org/>.

40. Because of data limitations, Bowman defines endowment as the sum of all investment assets, which comingles endowment and operating funds, as well as restricted and unrestricted funds. Gentry controls for endowment in his analysis of hospital tax-exempt borrowing using net assets. His definition of endowment, however, fails to distinguish between endowment and operating funds as well, as well as restricted and unrestricted net assets.

debt as total liabilities (capturing both financial and nonfinancial liabilities), while Yan et al. and Denison examine only long-term financial debt (tax-exempt debt and mortgages). These differing definitions of capital structure make it difficult to compare results across papers.

The current paper adds to the existing literature in four ways. First, a more representative data source is used that is not weighted exclusively toward large nonprofit organizations or a single type of nonprofit organization, greatly enhancing the generalizability to the sector as a whole. Second, the data allow for a precise measurement of true restricted endowment, and a measure of profitability that includes only unrestricted profits. Third, the analysis examines how nonprofits adjust their capital structures over time, which the current literature has not considered. Finally, the empirical analysis addresses different measures of capital structure (financial debt and total liabilities), allowing comparisons to the existing literature.

HYPOTHESES

The primary research question asks whether leverage varies across nonprofits as predicted by the competing static trade-off or pecking order theories, in light of the potential effects of unavailable true endowment on capital structure. The secondary analysis examines how nonprofits adjust their capital structures over time. The specific research hypotheses related to the first research question (using two differing definitions of capital structure) are:

- H1: The static trade-off theory predicts a positive coefficient on profitability, and an inverse relationship with financial distress costs. Increasing profitability and decreasing distress costs imply an increased willingness by lenders to provide capital to nonprofits.
- H2: The pecking order theory predicts a negative coefficient on profitability, and an inverse relationship with financial distress costs. As profits increase, external debt usage is expected to decrease because the nonprofit will prefer to first use these internal capital sources generated from profits before seeking out external financing; further, internal financing is preferred to avoid financial distress costs.
- H3: The ratio of assets in a true permanently restricted endowment will positively influence capital structure. Better endowed nonprofits may be more stable due to the investment income generated, and better able to secure debt as a result.
- H4: The ratio of assets in a true permanently restricted endowment will negatively influence capital structure because these nonprofits have less need for debt given their better financial stability.

TABLE 1
Summary of Sample Selection and Data Cleaning

Total sample size	1,388,480
Less: Organizations filing 990EZ (no detail on net asset restrictions)	283,814
Less: Organizations not compliant with FASB 117 (no detail on net asset restrictions)	307,358
Less: Organizations not reporting on the accrual basis (no liabilities reported)	219,251
Less: Organizations with data flagged as erroneous by NCCS (line item totals do not sum correctly and are more than 25 percent inaccurate)	6,067
Less: Organizations with obvious data errors (such as negative assets or liabilities, negative expenses, no program expenses, no administrative expenses)	144,949
Final sample size	427,041

DATA

Data for the empirical analysis come from the National Center for Charitable Statistics (NCCS)—GuideStar National Nonprofit Research Database. This database covers all public charities required to file the Form 990, a standardized report that must be submitted by public charities with gross receipts in excess of \$25,000 annually; religious organizations and private foundations do not file the Form 990 and are not included in the data. All financial variables are adjusted for inflation using the Consumer Price Index (CPI). The NCCS-GuideStar database is verified by the NCCS, thereby increasing the quality of the reported data, and covers fiscal years 1998 through 2003. Table 1 summarizes the sample selection and data cleaning process. The initial sample of 1,388,480 observations covering 338,863 individual nonprofit organizations was reduced to 427,041 observations covering 116,476 organizations. The majority of eliminated observations either did not have needed data on restricted net assets (591,172 observations, or more than 61 percent of the eliminated observations) or use a basis of accounting that does not report liabilities (219,251 observations, or 23 percent of the eliminated observations). The remaining 151,016 observations (nearly 16 percent of the eliminated observations) were eliminated over data quality concerns, as outlined in Table 1.

VARIABLES

A measure of capital structure is needed for the dependent variable. The two definitions used in the existing literature are Total Liabilities/Total Assets, and Total Financial Debt/Total

Assets.⁴¹ Both definitions of capital structure are employed in the current analysis to empirically test differing definitions of capital structure.

The crucial independent variable is a measure of profitability. Because only unrestricted profits can be used in lieu of borrowing or easily as collateral, an unrestricted return on assets (change in unrestricted net assets/total assets) variable is used to measure the profitability of organization *i* in year *t*.

Nonprofits with unrelated business income may face tax liabilities, providing them with an incentive to use tax-deductible leverage, implying a positive coefficient on leverage. This variable is suggestive of a static trade-off theory because it implies a balancing of the costs and benefits of borrowing. A dummy variable is included if the nonprofit organization reports filing the 990T.⁴²

A nonprofit's endowment is measured as the ratio of permanently restricted net assets to total assets. This variable measures how much of an organization's asset base has donor-imposed restrictions attached as endowment. This precise definition of endowment has not been tested in the existing literature. This definition of endowment is not strongly correlated with Bowman's definition, which is the ratio of investments to total assets ($\rho = 0.09$).⁴³

Financial distress costs (which are related to both capital structure theories) are captured in several independent variables. Any firm (whether for-profit or nonprofit) that is heavily invested in fixed assets will survive bankruptcy in better financial condition than a firm valued primarily with intangible assets.⁴⁴ Theory suggests that lenders are more willing to extend credit when there are durable assets that serve as collateral,⁴⁵ since bankruptcy costs are lower. Therefore, the ratio fixed assets/total assets is included, as in Bowman, Denison, and Yan et al.; increasing fixed assets reduce financial distress costs, implying a predicted positive coefficient.

Risk and financial distress are also linked. As Yan et al. notes, the relationship between risk and capital structure can be explored from a nonprofit's choices in revenue structure.⁴⁶

41. Welch (2010) argues that the Total Financial Debt/Total Assets ratio is problematic because the inverse ratio is not Equity/Total Assets—and does not include nonfinancial debt, which can be significant. He argues that a better definition is Total Financial Debt/Financial Capital. In the nonprofit context, financial capital would equal net assets plus mortgages and notes. The correlation between Total Financial Debt/Total Assets and Total Financial Debt/Financial Capital is over 93 percent in the current sample, which suggests that the results should not be sensitive to either definition. In fact, the reported results are unchanged by using Total Financial Debt/Financial Capital definition rather than the Financial Debt/Total Assets definition. No variable changes direction or significance.

42. The data do not provide detail on the unrelated business income, simply an indication that the form was filed (found in Part VI, line 78b of the Form 990).

43. Bowman, "Uniqueness of Nonprofit Finance," 296.

44. Denison, 113.

45. Bacon, 88.

46. More specifically, Yan et al. point out that financial risk has internal and external components (56). The controllable internal component is determined by revenue structure, and the uncontrollable external component is the general economic environment. The focus on Yan et al. and this study on the internal component of financial risk explicitly examine factors controllable and changeable by nonprofit boards and managers.

A nonprofit organization can reduce its financial risk by diversifying its revenue sources (assuming they are not perfectly correlated), and, by reducing its risk, may increase the probability that lenders will finance the organization through debt. Revenue concentration, on the other hand, may lower the probability of external lending due to increased risk (because a greater proportion of total revenues may be affected by the external economic environment). Carroll and Slater find, for example, that revenue diversification does in fact lead to increased revenue stability.⁴⁷ Finally, such revenue diversification efforts reflect financial management choices by a nonprofit and the related risks of such choices.⁴⁸ For purposes of this study, revenues are classified into four distinct sources: donations, government grants, program revenue, and investment income.⁴⁹ Revenue diversification is measured as in Yan et al. using

$$RD = \frac{1 - \sum_{i=1}^4 R_i^2}{0.75} \quad (2)$$

where R_i is the ratio of revenue generated by each revenue source. An increasing value in the diversification index indicates greater revenue diversity (with implied increased revenue stability) of the organization. Both the pecking order and trade-off theories would suggest that as the diversity index increases, leverage would increase as well due to lower financial risk.⁵⁰

Closely linked with the diversification index, the shares of revenue derived from donations, government, and program services are also included as control variables. A nonprofit's revenue portfolio may influence its leverage. Because government funding is often ongoing and stable, the proportion of revenue generated from government grants is expected to have a positive relationship with leverage. Because donors expect nonprofit boards to

47. Deborah A. Carroll and Keely Jones Stater, "Revenue Diversification in Nonprofit Organizations: Does It Lead to Financial Stability?" *Journal of Public Administration Research and Theory* 19 (2009): 947–966.

48. Yan et al., 56.

49. Donations include direct and indirect contributions from individuals, as well as net special events revenue; government grants are limited to reported grants and do not include government contracts—which likely are reported under program revenue; program revenue include dues and assessments, profits or losses from inventory sales, program service revenue, and other revenue; and investment income is comprised of interest, dividends, net rental expenses, gains or losses from sales of assets other than inventory, and any other investment income.

50. Risk was also measured as the five-year coefficient of variation of operating revenues (excluding investments) measured at the industry level (defined using the 633 National Taxonomy of Exempt Entities Classification Codes), which is similar to a measure of industry risk used in Tim Opler, Lee Pinkowitz, Rene Stulz, and Rohan Williamson, "The Determinants and Implications of Corporate Cash Holdings," *Journal of Financial Economics* 52 (1999): 3–46. The results were unchanged from those reported, and the risk variable was not significant. Risk was additionally measured as the four-year coefficient of variation of operating revenues measured at the organization level. This allowed the use of lags and fixed effects estimation. Again, the risk variable was not significant in this additional specification.

exercise stewardship over donated assets, the proportion of revenue generated from donations is expected to have a negative relationship with leverage. Because self-generated program revenue is less risky than donative revenue,⁵¹ the proportion of self-generated revenue is expected to have a positive relationship with leverage. Doing so allows us to ascertain the marginal change in leverage from changes in particular revenue sources.⁵²

Potential agency costs are included as a control variable, and measured using the ratio of executive compensation and other salaries and wages to total expenses, as in Yan et al.

Finally, organizational size is included as a control variable, and measured with the natural logarithm of total assets, as in Bowman, Denison, and Yan et al. Organizational size may influence debt usage because larger firms are more likely to have access to debt. Further, Nitterhouse finds that small nonprofits lack expertise and specialization,⁵³ and Hager et al. indicate that small nonprofits tend to have inadequate organizational infrastructure for financial management and reporting;⁵⁴ with respect to leverage, therefore, smaller nonprofits may be unable to handle the additional financial management demands required of debt usage. Hence, the expected relationship between leverage and size is positive.

All variables are defined in Table 2, with descriptive statistics presented as well.

EMPIRICAL METHODOLOGY

The primary research question asks whether the level of leverage (with alternative definitions) varies across nonprofit organizations in ways consistent with either the static trade-off or pecking order theory; these results are presented in columns 1 and 2 of Table 3. Then, similar to Bowman, endowments are removed from the empirical specifications so that the primary research question can focus on the available resources of the nonprofits by subtracting permanently restricted net assets from total assets.⁵⁵ In addition, as in Bowman, earnings from endowment are removed from the measure of profitability (to again isolate operating profits); in this case, dividends, realized gains, and other investment income are

51. Karen A. Froelich, "Diversification of Revenue Strategies: Evolving Resource Dependence in Nonprofit Organizations," *Nonprofit and Voluntary Sector Quarterly* 28, no. 3 (1999): 246–268.

52. Yan et al., 58.

53. Denise Nitterhouse, "Financial Management and Accountability in Small, Religiously Affiliated Nonprofit Organizations," *Nonprofit and Voluntary Sector Quarterly* 26, Supplement (1997): S101–S121.

54. Mark A. Hager, Thomas Pollak, Kenneth Wing, and Patrick M. Rooney, "Getting What We Pay For: Low Overhead Limits Nonprofit Effectiveness," in *Nonprofit Overhead Cost Project: Fact and Perspectives*, brief number 3 (Indianapolis, IN and Washington, DC: Center on Nonprofits and Philanthropy, Urban Institute and Center on Philanthropy, Indiana University, 2004).

55. Because endowments are defined as permanently restricted net assets, the accounting identity indicates that these net assets must be balanced with assets (see equation [1]). Therefore, these permanently restricted net assets are subtracted from assets to arrive at "operating assets." This modified definition of operating assets is then used in the various definitions of capital structure (LEVERAGE and FIN_LEV), UNROA, and LNASSETS.

TABLE 2
Descriptive Statistics of Variables

Variable	Definition	Mean	Standard deviation	Minimum	Maximum
LEVERAGE	Total liabilities/total assets	0.40	0.50	0	3.10
FIN_LEV	Sum of tax-exempt debt and mortgages/total assets	0.15	0.30	0	1.35
UNROA	Change in unrestricted net assets/total assets	0.02	0.32	-1.74	0.95
PCTENDOW	Ratio of permanently restricted net assets to total assets	0.04	0.13	0	0.79
RDI	Revenue diversification index	0.35	0.29	0	1.00
PCTGOV	Percent total revenue from government grants	0.26	0.37	0	1.00
PCTPUB	Percent total revenue from donations and special events	0.45	0.38	0	1.00
PCTGSVC	Percent total revenue from goods and services	0.16	0.26	0	1.00
LNASSET	Natural log of total assets	13.43	2.30	0	27.38
PCTFIX	Ratio of fixed assets to total assets	0.32	0.32	0	0.97
PCTCOMP	Ratio of total compensation to total expenses	0.41	0.26	0	0.85
990T	Equals 1 if organization reports filing Form 990T for unrelated business income	0.07	0.25	0	1.00

subtracted from profits.⁵⁶ The results are presented in columns 3 and 4 of Table 3. Because a minority of nonprofits is endowed, columns 5 and 6 replicate the initial analysis but limit the sample to those nonprofits that report true endowments (permanently restricted net assets). Finally, true endowment is removed from these endowed nonprofits, and the results are presented in columns 7 and 8 of Table 3.

One of the empirical issues to address is that not all nonprofits have financial debt, and in general do not switch back and forth between having debt and not having debt. Rather, nonprofits make decisions to have such leverage or not, and then maintain this

56. Bowman does not explicitly identify which income line items he excludes from profitability in his analysis; see Bowman, "Uniqueness of Nonprofit Finance," 305. Dividends (line 5), other investment income (line 7), and realized gains (line 8d) are used to estimate financial investment returns in this study. Interest (line 4) is excluded because it includes temporary cash investments that would not be considered part of true endowment. The results are unchanged, however, whether interest is excluded or not. The definition in this study is conservative since it assumes all these revenues are unrestricted. If these are treated instead as restricted (and not affecting unrestricted profitability), the results are generally unchanged.

TABLE 3
Fixed Effect Estimation of Nonprofit Capital Structure

	LEVERAGE (1)	FIN_LEV (2)	LEVERAGE— no endow, whole sample (3)	FIN_LEV— no endow, whole sample (4)	LEVERAGE— endowed NPOs only (5)	FIN_LEV— endowed NPOs only (6)	LEVERAGE— no endow, endowed NPOs only (7)	FIN_LEV— no endow, endowed NPOs only (8)
UNROA	-0.10*** (0.01)	-0.02*** (0.00)	-0.08*** (0.01)	-0.01*** (0.00)	-0.07*** (0.01)	-0.02*** (0.01)	-0.05*** (0.01)	-0.01*** (0.00)
PCTENDOW	-0.08*** (0.01)	-0.03*** (0.01)	0.02*** (0.01)	0.00 (0.00)	-0.06*** (0.02)	-0.02** (0.01)	0.01 (0.01)	-0.00 (0.00)
RDI	0.01* (0.00)	0.00* (0.00)	0.01 (0.00)	0.00* (0.00)	-0.01 (0.01)	0.01 (0.00)	-0.02* (0.01)	0.01 (0.00)
PCTGOV	0.00 (0.01)	-0.00 (0.00)	0.00 (0.01)	-0.00 (0.00)	0.01 (0.01)	-0.00 (0.01)	-0.00 (0.02)	-0.01 (0.01)
PCTPUB	0.01** (0.01)	0.00 (0.00)	0.01* (0.01)	0.00 (0.00)	0.00 (0.01)	0.01*** (0.01)	-0.03 (0.02)	0.01** (0.01)
PCTGSVC	0.00 (0.01)	-0.01** (0.00)	0.00 (0.01)	-0.01** (0.00)	-0.01 (0.01)	-0.01* (0.01)	-0.03 (0.02)	-0.01** (0.01)
LNASSET	-0.01*** (0.00)	0.00 (0.00)	-0.00** (0.00)	0.00 (0.00)	-0.00 (0.02)	0.00 (0.00)	0.01* (0.00)	0.00 (0.00)
PCTFIX	0.05*** (0.01)	0.06*** (0.00)	0.05*** (0.01)	0.06*** (0.01)	0.05*** (0.02)	0.05*** (0.01)	0.07*** (0.02)	0.07*** (0.01)
PCTCOMP	0.02 (0.01)	-0.00 (0.00)	0.01 (0.01)	-0.00 (0.00)	0.01 (0.02)	-0.00 (0.01)	-0.02 (0.03)	-0.00 (0.01)
990T	-0.00 (0.00)	0.00 (0.00)	-0.00 (0.01)	0.00 (0.00)	-0.01 (0.01)	-0.00 (0.00)	-0.00 (0.01)	-0.00 (0.00)

TABLE 3
(Continued)

	LEVERAGE— no endow, whole sample (1)	FIN_LEV— no endow, whole sample (2)	LEVERAGE— no endow, whole sample (3)	FIN_LEV— no endow, whole sample (4)	LEVERAGE— no endow, whole sample (5)	FIN_LEV— no endow, whole sample (6)	LEVERAGE— no endow, whole sample (7)	FIN_LEV— no endow, whole sample (8)
CONSTANT	0.49*** (0.02)	0.14*** (0.01)	0.43*** (0.02)	0.13*** (0.01)	0.24*** (0.03)	0.04* (0.02)	0.17*** (0.06)	0.05** (0.02)
F-test	34.31***	24.42***	26.62***	22.20***	6.30***	4.14***	5.35***	4.20***
Year effects	9.94***	1.64	8.22***	1.43	6.82***	2.67**	2.40*	1.95
Adjusted R ²	0.82	0.91	0.81	0.91	0.87	0.88	0.80	0.87
N	274,138	274,138	274,138	274,138	50,327	50,327	50,327	50,327
Organizations	92,858	92,858	92,858	92,858	19,774	19,774	19,774	19,774

Note: Independent variables are lagged one year. Robust standard errors clustered by organizations are in parentheses. LEVERAGE is total liabilities/total assets, and FIN_LEV is defined as the sum of tax-exempt debt and mortgages/total assets. Columns 1 and 2 contain the whole sample; columns 3 and 4 also include the whole sample, but remove organizational true endowment assets and income to analyze the available resources of a nonprofit (separately from this endowment). Columns 5 and 6 include only those nonprofit organizations (NPOs) reporting permanently restricted net assets (true endowment); columns 7 and 8 include these endowed nonprofits as well, but remove organizational true endowment asset and income to analyze the operations separately, as in columns 3 and 4. UNROA is the change in unrestricted net assets/total assets; PCTENDOW is the ratio of permanently restricted net assets to total assets; RDI is a revenue diversification index; PCTGOV is the percent total revenue from government grants; PCTPUB is the percent total revenue from donations and special events; PCTGSVC is the percent total revenue from goods and services; LNASSET is the natural log of total assets; PCTFIX is the ratio of fixed assets to total assets; PCTCOMP is the ratio of total compensation to total expenses; and 990T is a dichotomous variable coded 1 if an organization reports filing Form 990T for unrelated business income.

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

behavior pattern over time; Yan et al. also note this behavior pattern.⁵⁷ Only 37 percent of the organizations in the final sample report financial debt, and 94 percent maintain either positive or no financial debt across the six years of data. However, 94 percent of nonprofits report total liabilities, and 97 percent of the organizations maintain either positive or no liabilities across the observed years. In the case of financial debt, this choice to have a specific type of leverage is an omitted variable problem, because this organizational decision is obviously affecting the variable of interest (capital structure), especially when analyzing financial capital structure.

Because the data are longitudinal, a fixed effects estimator is employed to address this omitted variable concern. The organizational effect is used to control for this decision to use debt or not, as well as other unobserved but relevant variables (such as an organization's preference for debt, the financial sophistication of the board and managers, the ease of issuing debt through government conduits within different states, as several specific examples). The explanatory variables are lagged one year to mitigate potential endogeneity problems. Further, year dummies are included in the models, but the results are not presented due to space constraints. Robust standard errors clustered by nonprofit organization are used to address potential problems with autocorrelation and heteroskedasticity.

RESULTS

Table 3 reports the results of the fixed effects model predicting leverage for the years 1999–2003. Each model is statistically significant as indicated by the *F*-test.

The profitability variable (UNROA) is negative and significant in all specifications, providing support for the pecking order theory. Further, this provides evidence that the pecking order theory dominates with different measures of capital structure, excluding or including endowment or its income, and even limiting the sample to endowed nonprofits. The results also indicate that leverage (however measured) and internal funds (i.e., unrestricted net assets generated from operating profits) are not perfect substitutes; a simple pecking order theory would predict a UNROA coefficient of -1.0 , indicating perfect substitutability. In all specifications, the coefficient is lower, and supports past findings by Bowman who finds a similar result for nonprofits with no endowments. What is different from Bowman's results, however, is that the coefficient on the profitability variable remains negative even when the analysis isolates the nonprofits' available resources from endowment: whereas Bowman finds evidence of the static trade-off theory (since profitability is positive), the current analysis still finds evidence of the pecking order theory (since profitability remains negative).

57. Yan et al., 57–58. Yan et al. use a two-step Heckman selection model to address this concern. Using a similar approach here, the results are generally unchanged. The variable UNROA is significant and negative in all specifications. PCTENDOW is also unchanged except for columns 7 and 8 (the endowed subsample) in which the variable is significant. The difference may be attributable to other omitted variables captured by the fixed effects beyond the decision to have debt that are not captured by the Heckman correction.

The endowment variable (PCTENDOW) is negative in the specifications that treat nonprofits as a single indivisible entity (columns 1, 2, 5, and 6). The results suggest that having true endowment reduces nonprofit leverage, perhaps because these restricted endowments generate available resources (unrestricted revenues) that can be used as internal financing sources. Hence, true endowment may reduce leverage because it serves as a generator of internal reserves, rather than providing nonprofit managers with increased confidence in the organization's ability to take on increasing leverage (which would imply a positive coefficient).

Once endowment and its income are removed from the financial operations of the nonprofit and we focus on available resources (columns 3, 4, 7, and 8), endowment generally is not significant (the exception is column 3).⁵⁸ Thus, increases in endowment do not increase leverage in general, despite theory to suggest it might increase leverage due to increased investment income (which could serve as collateral more easily than the restricted endowment corpus). One explanation is that lenders do in fact segregate these restricted and unavailable endowments in their lending decisions with nonprofits; these lending decisions, then, would be based primarily on those available resources only and exclude restricted endowment completely. In this calculation, it is unsurprising that endowment has no effect—since lenders completely discount these restricted assets. Alternately, these results might suggest that nonprofit managers in general take these restricted endowments seriously and do not try to leverage them. Hence, restricted endowment in general has no effect on borrowing decisions.

Not surprisingly, increases in the ratio of fixed assets (PCTFIX) also increase leverage consistently, regardless of the definition of capital structure or the sample analyzed, because such increases in fixed assets may reduce financial distress costs.

The results also find general support for the findings in Yan et al. who find that revenue diversity (RDI) does not increase debt ratios. In all specifications, RDI is not significant at the 5 percent or higher level. This finding is counter to the theory presented, in which increased revenue diversity decreases risk; decreased risk ought to result in lenders being more willing to lend to an organization. One reason might be that the preference for internally generated capital outweighs the benefits of reduced risk with respect to debt issuance. In other words, while lenders and vendors may be more willing to extend credit (or extend cheaper credit) to nonprofits with less risk from diverse revenue streams, the preference to use internal rather than external funds still dominates. In fact, revenue diversification may both reduce risk and increase internal funds for capital expansion and growth, hence the negative coefficient.

58. One potential explanation for the positive and significant coefficient in column 3 might be related to the sample. Since this column is estimated using the entire sample—including those nonprofits without true endowment—the results on PCTENDOW might suggest that moving from having no true endowment to having such an endowment does in fact increase nonfinancial leverage. However, increasing endowment when an organization already has endowment (column 7) results in no effect on leverage. Hence, obtaining true endowment may make managers initially more confident in assuming increased nonfinancial leverage, but the effect might be limited to this initial change and not part of ongoing operations.

The ratios of revenues derived from government, donations, and goods and services are not consistently significant across the specifications. The ratio of total revenue derived from goods and services is consistently negative in the financial leverage specifications, although it was expected to be positive. These results might suggest that as nonprofits become increasingly commercial, they decrease their leverage because they are able to use retained earnings instead for capital expansion or a source of funds for maintenance. Such revenues are by definition unrestricted (since there are no donors involved), making all profits derived from commercial activity available for use and possibly reducing the need for external financing. The government grants variable is not significant in any specifications. One explanation may be that such grants are frequently restricted for use (temporarily restricted); for example, a nonprofit may receive a grant to expand a particular program, or acquire a particular property, etc. Therefore, the government grant—despite being relatively certain and stable—may not be suitable as collateral and have no effect on borrowing.

Increasing size (LNASSET) actually decreases leverage when the whole sample is examined; however, when the results focus on financial debt only, no effect is found. The results indicate that larger nonprofits are not better able than smaller nonprofits to access financial debt markets. Another explanation is that small nonprofits do have limited access to these markets, but take on more relative leverage than large nonprofits when they actually do access these markets. These counteracting forces may help explain the results despite theory to the contrary.

Finally, increasing employee compensation (PCTCOMP) and filing a Form 990T have no effects on leverage. These results, then, seem to indicate that the tax advantage of debt is more complicated for nonprofits with unrelated business income tax liabilities than theory may suggest. In addition, the use of debt as a control mechanism by boards may be more complicated as well.

Overall, then, the results in Table 3 point to four important insights into nonprofit capital structure and financial decision-making. First, nonprofits reveal behavior consistent with the pecking order theory; however, the results also show that leverage and internal funds (such as unrestricted net assets) are not perfect substitutes. In other words, a nonprofit will not decrease its debt dollar for dollar as internal capital is generated; rather, it will retain a portion of this internal capital, perhaps for future capital purposes or simply as a rainy day fund. Second, the results are robust to the alternate definitions of capital structure used in the extant literature. Whether capital structure is defined as total leverage or financial debt, pecking order behavior still holds. Third, endowment does not increase leverage when nonprofits' operations are examined separately from restricted endowment, and endowed nonprofits still prefer internal capital to debt. Finally, revenue diversification and sources have little effect on a nonprofit's capital structure. Rather, internal capital generation (profitability), endowments, and fixed assets are the primary explanatory factors in understanding nonprofit borrowing.

CAPITAL STRUCTURE ADJUSTMENT

The next research question addresses whether nonprofits have target leverage ratios, and whether nonprofits adjust toward these values over time. To test this question, a simple partial adjustment model is estimated using the following form:

$$\text{LeverageRatio}_t - \text{LeverageRatio}_{t-1} = \beta_0 + \beta_1[\text{Target}_t - \text{LeverageRatio}_{t-1}] + \varepsilon_t \quad (3)$$

where *LeverageRatio* is the alternate definitions of capital structure employed in Table 3 and *Target* is an estimated organizational-specific capital structure. Equation (3) measures the difference between the observed leverage ratio and the target ratio. The research hypothesis is that a positive and significant coefficient on the variable *Target* is indicative of a nonprofit moving to partially adjust this discrepancy. Equation (3) is estimated using a two-step regression approach, as in Fama and French.⁵⁹ The variable *Target* is estimated by using the original regression (reported in Table 3) to determine the fitted values of the capital structure measures. These fitted values are then used as a proxy for *Target* in equation (3). The results of equation (3) are presented in Table 4.

The partial adjustment model shows consistently positive and significant coefficients on the target variable, indicating that nonprofit organizations on average do target their capital structure and change it toward the target over time. The change in capital structure, however, is extremely small; the coefficients suggest that the average nonprofit adjusts its total leverage only 13 percent per year, and adjusts its financial debt only 6 percent per year. The rate of change is only slightly increased when segregating the operating subsidiaries from endowment, as leverage changes only 14 percent per year and financial debt 6 percent. Nonprofits in general, then, are slow to adjust toward their target leverage ratios. This suggests that financing costs are significant since nonprofits are slow to adjust.

The important question to address is how to reconcile the positive coefficients on the target adjustment variable with the pecking order theory found in Table 3? Recall, the pecking order theory indicates that nonprofits have no targets for leverage; instead, organizations simply prefer internal to external capital and will turn to external financing when internal financing is insufficient for their needs. The adjustment model actually provides some proof of a static trade-off theory, where nonprofits would seek a target based on maximizing the benefits of debt given its costs. The results in Table 4, then, seem to conflict with the results of Table 3.

A potential explanation is that nonprofits do not want to use up all their internal reserves before turning to external debt. A simple pecking order theory would suggest just this behavior. Using debt even with available internal capital allows a nonprofit to maintain reserves; in fact, a nonprofit with no reserves could actually acquire reserves by issuing debt. In this understanding of capital structure behavior, capital expenditures are partly

59. Eugene F. Fama and Kenneth R. French, "Testing Trade-Off and Pecking Order Predictions about Dividends and Debt," *The Review of Financial Studies* 15, no. 1 (2002): 1-33.

TABLE 4
Capital Structure Partial Adjustment Model

	Change in LEVERAGE (1)	Change in FIN_LEV (2)	Change in LEVERAGE— no endow assets, whole sample (3)	Change in FIN_LEV— no endow assets, whole sample (4)	Change in LEVERAGE— endowed NPOs only (5)	Change in FIN_LEV— endowed NPOs only (6)	Change in LEVERAGE— no endow assets, endowed NPOs only (7)	Change in FIN_LEV— no endow assets, endowed NPOs only (8)
TARGET	0.13*** (0.00)	0.06*** (0.00)	0.14*** (0.00)	0.06*** (0.00)	0.11*** (0.01)	0.08*** (0.00)	0.13*** (0.01)	0.08*** (0.00)
ADJ	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00** (0.00)	0.00*** (0.00)	0.01*** (0.00)	0.00*** (0.00)
CONSTANT	2,244.49*** 0.06	1,790.75*** 0.03	2,304.96*** 0.06	1,888.59*** 0.03	162.43*** 0.05	281.75*** 0.04	238.39*** 0.05	310.02*** 0.04
F-test								
R ²								
N		274,138	274,138	274,138	50,327	50,327	50,327	50,327

Note: Robust standard errors clustered by nonprofit organization in parentheses. Samples and included organizations follow Table 3. LEVERAGE is total liabilities/total assets, and FIN_LEV is defined as the sum of tax-exempt debt and mortgages/total assets. TARGET ADJ is β_1 from equation (3). ***Significant at 1%; **significant at 5%.

financed pay-as-you-go (with internal reserves) and partly financed with debt, but the debt financing is restrained so that financial distress costs remain low and future-borrowing power is not eliminated. Nonprofits, then, may make capital and financing decisions based not solely on current resources, but probable future resources as well. Therefore, even with no explicit target leverage level, nonprofits may adjust toward having some leverage so that internal capital is maintained, thereby lowering potential costs of not having capital for future growth, transactions, opportunities, etc. Myers makes a similar argument for for-profit entities, that organizations may account not only for current debt costs, but for future costs as well;⁶⁰ even more to the point, nonprofits may believe that having no internal capital to draw upon in the future is so costly that they assume less cost now in the form of some leverage to maintain those internal capital pools. This modified pecking order theory of nonprofit financial behavior also helps explain why debt and earnings are not perfect substitutes, as suggested in Table 3.

CONCLUSIONS

This study has examined the capital structure decisions of nonprofit organizations, and how these decisions adjust over time. The results of the empirical analysis indicate that nonprofits display preferences consistent with the pecking order theory of capital structure, where internal capital is preferred over external borrowing. The results suggest, however, that nonprofits also prefer to maintain some level of internal capital so that future resources are available for usage. Further, by segregating endowment from operations, it is determined that endowed nonprofits do not borrow more than unendowed nonprofits. Finally, the results suggest that differing definitions of capital structure that capture different types of leverage do not significantly alter the findings, and the findings of pecking order preferences are robust to alternate specifications.

Given nonprofits' pecking order preference, how do nonprofits acquire internal funds that they may use in lieu of borrowing for organizational expansion and investment? These internal funds must be free of donor-imposed restrictions so that the nonprofit can utilize the resources as it sees fit, yet donors may be unwilling to fund capital campaigns with no known purpose except raising money for the nonprofit. Rather, operating profits are the likely source of the majority of nonprofit internal capital. Yet, several analyses reveal that nonprofits produce almost nonexistent profits; for example, Yan et al. show that the average nonprofit in their sample has a negative profit margin,⁶¹ Calabrese demonstrates that nonprofits have operating profits below 3 percent on average with very low targets,⁶²

60. Stewart C. Myers, "The Capital Structure Puzzle," *The Journal of Finance* 39, no. 3, Papers and Proceedings, Forty-Second Annual Meeting, American Finance Association, 1984, San Francisco, CA, pp. 575–592.

61. Yan et al., 60.

62. Thad D. Calabrese, "The Accumulation of Nonprofit Profits: A Dynamic Analysis." *Nonprofit and Voluntary Sector Quarterly*, forthcoming (2011), 13–15. doi: 10.1177/0899764011404080.

and even the current analysis shows profitability of less than 3 percent (see UNROA in Table 2). One potential issue might be that nonprofits are not exploiting growth potential or reaching their sustainable growth rate since they are not capitalized sufficiently. Also, given pecking order preferences coupled with low profit accumulations, nonprofits may be foregoing needed capital investment due to a lack of internal funds. Further, given these low profit levels, it is not surprising that nonprofits lack reserves to finance periodic operating deficits as revealed in the 2008 economic crisis. Future research should reexamine nonprofit capital structure preferences following the credit contraction experienced by the sector.

A remaining unanswered question remains with respect to the potential effect of capital campaigns on nonprofit capital structure. Due to data limitations, the analysis considered only internal (from operating profits) versus external (from borrowing) resources. Future research might consider how capital campaigns might alter the inferred capital financing preferences of nonprofits. Yetman, for example, suggests that nonprofits may prefer capital campaigns to bank debt.⁶³ Understanding the effect of these capital campaigns seems like an important but relatively unexplored avenue for future research related to nonprofit capital structure, fund-raising, and organizational capacity.

Interestingly, the profitability reported in Bowman's study using data from 1990–1994 is relatively high (a 9.5 percent return on assets) as compared to the low or nonexistent profitability of the more recent studies mentioned above. It is possible that the static trade-off preference found by Bowman reflected a specific time in the nonprofit sector of strong financial growth coupled with the need for capital investment—resulting in increased debt issuance (and, hence, a revealed static trade-off preference). Further studies on nonprofits capital structure might examine whether the displayed preferences for leverage change with the macroeconomy, or whether they are relatively stable over time. Another important question to ask is whether nonprofits used to be more profitable than they currently are, or whether the tremendous growth of the nonprofit sector during the 1990s somehow negatively affected the average profitability of organizations. Answering these questions seem critical if the nonprofit community is to be capitalized adequately to provide public goods efficiently and effectively, while avoiding the constant financial weaknesses that appear to consistently plague much of the sector.

NOTE

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63. Yetman, p. 260.