Tax-Motivated Expense Allocations by Nonprofit Organizations.

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Abstract:
Although nonprofit organizations are generally exempt from income taxation, they pay taxes on profits from activities unrelated to their primary exempt purpose. Congress intended this tax on unrelated business activities to prevent unfair competition with for-profit businesses and to raise revenue. In the aggregate, nonprofits report annual losses on their taxable activities of more than $1 billion on $4 billion of revenues. In contrast, they report aggregate profits of over $50 billion on their tax-exempt activities. Analysis of a database of confidential tax returns suggests that medical and educational nonprofits allocate expenses from their tax-exempt to their taxable activities to reduce their tax liabilities, although unfortunately it is not possible to determine the extent to which these allocations represent noncompliance with tax laws. In contrast, I find no evidence that charitable nonprofits engage in tax-motivated allocation behavior.

Keywords: nonprofit organizations; unrelated business income tax; cost allocation.

Data Availability: Due to nondisclosure arrangements, data are not available from the author, but they may be obtained from sources identified in the text.

Full Text:
I. INTRODUCTION

This paper investigates the relation between income taxes and expense allocations made by tax-exempt, nonprofit organizations. Although nonprofits are generally exempt from income taxes, they are subject to an unrelated business income tax on income from activities not related to their exempt purpose. For example, a university that uses its basketball arena for private musical concerts must pay taxes on the net profits generated from the concerts. In computing its taxable income from a concert, the university may deduct reasonable expenses, which comprise expenses incurred only for the concert (e.g., parking attendants) and a portion of other expenses (e.g., electricity) that must be allocated between the taxable and tax-exempt uses of the arena. The differential taxation of related and unrelated activities provides nonprofits an incentive to shift expenses from tax-exempt-related activities to taxable-unrelated activities to reduce their tax liabilities.

Congress enacted the unrelated business income tax in 1950 in response to claims of unfair competition, such as those levied against the Mueller Macaroni Company that was tax-exempt because it was owned by New York University. Congressional records suggest two purposes for the tax: first, to prevent unfair competition with taxable businesses arising from nonprofits' tax-exempt status; and second, to raise revenue (U.S. House 1950).(1) In the aggregate, nonprofits report annual losses on their taxable activities of over $1 billion, a situation that has persisted for more than ten years and is unique among entities subject to income tax in the United States. In contrast, nonprofits report aggregate annual profits of more than $50 billion on their tax-exempt activities. Operating a truly unprofitable taxable activity would not only financially drain the nonprofit, but would also require exempt sources of income (such as donations) to subsidize the unprofitable taxable activities.

When expenses are not separable, such as joint expenses incurred for both tax-exempt and taxable activities, economic allocations across activities are not well defined (Demski 1994). One purpose of a cost accounting system is to allocate these nonseparable expenses. Prior analytical research suggests that managers will respond to tax incentives when selecting an expense allocation basis (Sansing 1998). The purpose of this paper is to provide empirical evidence on the extent that nonprofits respond to tax incentives by reallocating a portion of expenses from their tax-exempt activities to their taxable activities, and to measure the extent to which these tax-motivated expense allocations are responsible for the reported losses on nonprofit's taxable activities.

The analysis in this paper builds on prior research in nonprofit accounting, managerial accounting, and tax accounting to develop the

expense allocation models. The study represents the first large-sample, firm-level empirical analysis of the unrelated business income tax, one of only four types of income taxes in the United States.(2) By using a firm-level dataset of confidential tax returns, the study overcomes some limitations of prior income-shifting studies that were generally unable to estimate firm-level allocations (e.g., Klassen et al. 1993; Collins and Shackelford 1995).

Using a database of confidential nonprofit tax returns, I construct a model that partitions total expenses between nonprofits' taxable and tax-exempt activities. The difference between my estimates of taxable expenses and those the nonprofits actually report on their tax returns is my estimate of the portion of expenses that nonprofits reallocate from tax-exempt to taxable activities. Hereafter, I refer to this difference as tax-motivated expense allocations. Ideally, my estimation procedure would partition the expenses between taxable and tax-exempt activities based on the resources each activity actually consumes. Lacking access to usage data, I partition expenses based on each activity's reported revenues. This procedure implicitly assumes that: (1) nonprofits do not shift revenues across tax-exempt and taxable activities, and (2) expenses are proportional to revenues.(3)

My analysis is based on a database that matches nonprofits' publicly available information forms (IRS form 990) with their confidential income tax returns (IRS form 990-T). In response to a written request, 703 nonprofits voluntarily supplied an average of 2.6 years of data each, creating a pooled cross-section of 1,824 matched sets of forms 990 and 990-T.

Results suggest that medical nonprofits in the sample responded to tax incentives by reallocating a mean (median) of $405 ($86) thousand in expenses from their tax-exempt activities to their taxable activities. Educational nonprofits reallocated a mean (median) of $101 ($45) thousand in expenses from their tax-exempt activities to their taxable activities. I find no evidence of tax-motivated expense allocations for charitable nonprofits. The majority of the tax-motivated expense allocations occur in categories that aggregate miscellaneous expenses, such as "other" expenses. I find no tax-motivated expense allocations in categories that are subject to third-party reporting to the IRS. The median estimated tax-motivated expense allocations are sufficient to produce the median reported losses on taxable activities for the sample of medical and educational nonprofits. To the extent that these results are representative of the population, they help explain the aggregate losses nonprofits report on their taxable activities.

Cordes and Weisbrod (1998) examined the relation between tax incentives and nonprofits' variable employee compensation expense allocations, and found that the portion of compensation expenses allocated to taxable activities exceed estimates of marginal expenses. However, their sample sizes are very small (i.e., 7 charitable, 12 educational, and 24 medical nonprofits), they ignore fixed expenses, and they examine only employee compensation expense. My study uses a significantly larger dataset (1,824 organization-year observations), considers both fixed and variable expenses, and examines all categories of expenses. In another study of expense-shifting in nonprofit organizations, Eldenburg and Soderstrom (1996) find that hospitals appear to shift contractual adjustments (the difference between a reimbursable amount and the costs actually incurred for a treatment) to activities that are more likely to be reimbursed from nonpatient sources. I adapt a portion of Eldenburg and Soderstrom's (1996) research design to construct the expense allocation models.

The next section discusses the institutional characteristics of nonprofits. Section III develops a model of tax-motivated expense allocations, Section IV discusses the data, Section V reports the results of the empirical analysis, and Section VI concludes.

II. INSTITUTIONAL CHARACTERISTICS OF NONPROFITS

Although the taxable portion of nonprofit revenues averages only 1 percent of their total revenues, taxable revenues are growing three times faster than total revenues. The number of nonprofits reporting taxable activities has increased from less than 5 percent in 1975 to more than 12 percent in 1995 (Meckstroth and Arnsberger 1998). In response to this growth, the IRS created a separate division for tax-exempt organizations and doubled the number of employees in the tax-exempt section.

The individual states grant authority to operate on a tax-exempt basis. State approval of nonprofit status generally exempts an organization from state-level taxes, such as income, property, payroll, and sales taxes, but not from federal income taxes. A nonprofit may be exempt from state-level taxes but not from federal income tax.(4) In practice, most organizations that receive state-level tax exemption also receive approval at the federal level.

Not all income earned by nonprofits is tax exempt. Nonprofits must pay state and federal unrelated business income taxes on business activity not directly related to their tax-exempt purpose. Typical sources of unrelated business income include laundry facilities, catering services, clerical services, condominium rentals, daycare, farming, pharmaceutical sales, costume rentals, parking lot development, and advertising revenues. Nonprofits with taxable revenues must file two IRS forms, the 990-T and the 990. The form 990-T, which appears similar to an income statement, reports taxable revenues and expenses and is not subject to public disclosure. The form 990, a publicly available annual information return, reports the organization's total operations, aggregating both tax-exempt and taxable activities. One cannot determine the portion of revenues and expenses pertaining to taxable activities from the publicly available form 990 alone.

Nonprofits often use existing facilities and personnel in taxable activities; therefore the nonprofit must allocate dual-use expenses between the taxable and tax-exempt activities for tax-reporting purposes. The only guidance the IRS provides to nonprofits is that they must allocate dual-use expenses according to a "reasonable basis" (Treasury Reg. 1.512[a]-1 ©).(5) Unfortunately, the IRS and the appellate courts disagree as to what constitutes a reasonable basis. An appellate court decision permitted a university to allocate joint expenses based on actual use rather than capacity available for use (Rensselaer Polytechnic Institute v. Commissioner 1984). For example, if a facility was used 100 days for tax-exempt purposes and 20 days for taxable purposes, the allocation percentage under the court decision is 20 /(100+20) or 17 percent, while the allocation under IRS rules is only 20/365, or 5 percent. The IRS has not acquiesced to the court decision.(6) This disagreement, along with limitations inherent in any model estimating the expenses of (or resources consumed by) a nonprofit's activities, makes it difficult to interpret the results of this study as evidence of

noncompliance.

This study examines only nonprofit organizations exempt under Internal Revenue Code section 501(c)(3), which are those that can receive tax-deductible contributions. Nonprofits fall into one of three general categories: hospitals, schools, and other charitable organizations. These categories do not include pensions, social clubs, or local governments. Although religious organizations fall under the purview of 501(c)(3), they are not required to furnish the IRS with information reports and are excluded from the study.

III. A MODEL OF ORGANIZATION-LEVEL EXPENSE ALLOCATIONS

Model Development

Ideally, I would estimate expense allocations under both the IRS's and the Court's methods using detailed expense and facility use data, and then compare these estimates to the actual expense allocations reported on the nonprofit's 990-T. Without access to confidential expense data I must develop a model to estimate the expense allocations. I partition taxable and tax-exempt expenses using a two-step procedure. First, I use regression analysis to partition the variable expenses. Second, I partition any expenses that remain unallocated after the first step (ostensibly fixed expenses), based on average revenues.

To construct the model I make several assumptions. First, I assume that the relationship between revenues and expenses is constant within nonprofit types (i.e., medical, educational, and charitable). Second, I assume that taxable activity resource inputs and related sales revenues are proportional. Third, I assume that variable expenses are incurred on a marginal basis and that fixed expenses are incurred on an average revenue basis. Finally, I use a model to allocate expenses because I cannot directly associate expenses with any particular revenue source (except for fund-raising expenses, which are directly associated with donations revenue).

Estimated Variable Expense Allocations

To partition variable expenses between taxable and tax-exempt activities, I begin by estimating the following model in asset-scaled first differences:

(1) TOTAL_[EXP.sub.i] = [Alpha] + [.sub.1] [TAX_[REV.sub.i] + [.sub.2] EXEMPT_[REV.sub.i] + [.sub.3] INVEST_[REV.sub.i] + [[Epsilon].sub.i],(7)

where TOTAL_EXP is the change in total expenses from the form 990, less fund-raising expenses (incurred to generate donations) and grants (funds paid by one nonprofit to another); TAX_REV is the change in taxable business revenues from the form 990-T; EXEMPT_REV is the change in tax-exempt business revenues from the form 990, which is total revenues less taxable business revenues, donations, and investment revenues; and INVEST_REV is the change in investment revenues from the form 990, which includes interest and dividend revenues. I remove both donations revenue and their related fund-raising expenses from the model because they represent nonbusiness activity. This model is similar to Eldenburg and Soderstrom's (1996) model, except that I use revenues in lieu of volume because volume data are not available. I use first differences to control for organization-specific effects and time-invariant omitted variables.

[.sub.1], is a measure of the change in taxable expenses associated with an additional dollar of taxable revenues. An organization-level estimate of the total variable expenses incurred to generate taxable revenues is the product of [.sub.1] and TAX_REV. I perform similar calculations to estimate the portion of variable expenses allocated to tax-exempt and investment activities:

(2) estimated taxable variable expenses = [.sub.1] x TAX_[REV.sub.i],

(3) estimated tax-exempt variable expenses = [.sub.2] x EXEMPT_[REV.sub.i], and

(4) estimated investment variable expenses = [.sub.3] x INVEST_[REV.sub.i].

The sum of equations (2)-(4) is the total organization-level variable expenses incurred by a nonprofit. Although this method produces organization-level estimates of variable expenses based on organization-level revenues, the regression coefficients are cross-sectional constants. I attempt to mitigate the effects of constraining the coefficients by estimating equation (1) separately on educational, medical, and charitable nonprofits, and by allowing the coefficients to vary by revenue type (i.e., taxable, tax-exempt, and investment revenues). The next section outlines the method I use to partition the fixed expenses between taxable and tax-exempt activities.

Estimated Fixed Expense Allocations

I estimate fixed expenses by taking the difference between the total expenses the nonprofit reports and my estimate of total variable expenses using equations (2)-(4):

(5) [FIXED.sub.i] = TOTAL_[EXP.sub.i] - ([.sub.i] x TAX_[REV.sub.i] + [.sub.2] x EXEMPT_[REV.sub.i] + [.sub.3] x INVEST_[REV.sub.i]).

I partition my estimate of firm-level fixed expenses between taxable and tax-exempt activities based on average revenues. The portion allocated to taxable activities is:

(6) estimated taxable fixed expenses = [FIXED.sub.i] x (TAX_[REV.sub.i]/TAX_[REV.sub.i] + EXEMPT_[REV.sub.i]).

By excluding investment revenues from the denominator of equation (6), I assume that the nonprofit incurs no fixed expenses to generate investment revenues. To the extent that a nonprofit does incur this type of fixed expenses, the denominator of equation (6) is too small, causing estimated taxable fixed expenses to be too large. Overestimating the amount of estimated taxable expenses understates my measure of tax-motivated expense allocations, conservatively biasing the results.

Estimated Total Expense Allocations

The estimated total expenses that I allocate to the taxable activities are the sum of equations (2) and (6):

(7) estimated estimated taxable estimated taxable taxable = variable + fixed expenses expenses expenses.

This measure becomes my organization-level expectation of the taxable expenses a nonprofit incurs to earn its taxable revenues. The difference between these estimated expenses and the expenses as reported on the nonprofit's form 990-T is my measure of tax-motivated expense allocations from tax-exempt to taxable activities:

(8) tax-motivated reported estimated expense = taxable - taxable allocations expenses expenses.

One cannot directly map the above model to the reasonable basis standards of the IRS or the courts because those standards indicate that resource use is the appropriate allocation base, whereas my model allocates expenses based on resource output (i.e., revenues). Although my estimates of tax-motivated expense allocations are a plausible heuristic, they may not be interpreted as noncompliance with tax laws.

IV. DATA

Sample Selection

To collect a database of matched sets of tax returns, I requested, in writing, the past three years of forms 990 (publicly available) and 990-T (not publicly available) from the 2,316 nonprofits that filed both forms and that are included in the National Center for Charitable Statistics 1995 database (National Center for Charitable Statistics 1999).(8)

The National Center database includes all nonprofits with total assets of $10 million or more, plus a stratified random sample of smaller organizations, for a total sample of approximately 12,000 nonprofits.(9) The 2,316 nonprofits in the sample account for only 25 percent of the total number of nonprofits that filed a form 990-T in 1995, but more than 85 percent of the total assets and revenues of all nonprofits with taxable income. Of the 2,316 nonprofits, 703 voluntarily supplied matched sets of 990s and 990-Ts. Not all of the nonprofits that sent 990s and 990-Ts provided three years of data. On average, I received 2.6 years of data, yielding a pooled, cross-sectional sample of 1,824 matched sets of forms.

Table 1 describes the distribution of responses to the request for data. The distribution is increasing in time, with 549, 625, and 650 observations from the years 1995, 1996, and 1997, respectively. The highest response rate was for charitable nonprofits (40 percent), followed by educational nonprofits (36 percent), and medical nonprofits (24 percent).

TABLE 1 Distribution and Frequency of Responses by Nonprofits to a Written Request for Matched Sets of IRS Forms 990 and 990-T Educational Medical Charitable Description Nonprofits Nonprofits Nonprofits Total Nonprofits contacted 531 1,239 546 2,316 Unique respondents 189 296 218 703 Response rate 36% 24% 40% 30% Matched forms received 1995 160 245 144 549 1996 165 266 194 625 1997 161 263 226 650 Total 486 774 564 1,824 Average number of matched sets of annual returns received per respondent 2.57 2.61 2.59 2.60 This table summarizes the responses to two requests for data mailed to 2,316 nonprofit organizations. I mailed the first request on June 10, 1999 and the second on August 10, 1999. The 2,316 represent all nonprofits that are in the National Center for Charitable Statistics database and that had taxable activities for the 1995 tax year. I requested three years of data from each nonprofit; however, some nonprofits were unable to supply forms from all three years.

Sample Characteristics

Table 2 reports descriptive statistics of forms 990 and 990-T information for 486 educational nonprofits, 774 medical nonprofits, and 564 charitable nonprofits. All three types report positive total net income on their form 990, suggesting that nonprofits' aggregate activities are profitable. On average, charitable organizations are the most profitable, with a 43 percent profit margin, followed by 23 percent for educational organizations and 7 percent for medical organizations. Median profit margins are significantly smaller for charitable nonprofits (11 percent) and educational nonprofits (13 percent). Donations make up 24 percent of total revenues for educational nonprofits, just over 2 percent for medical nonprofits, and 22 percent for charitable nonprofits. Several of the variables are highly skewed, consistent with other studies (Hines 1999; Cordes and Weisbrod 1998). As a sensitivity check, I re-estimated all models using ranked data with no changes in the study's inferences.

TABLE 2 Descriptive Statistics for a Pooled Sample of 1,824 Matched Sets of Forms 990 and 990-T by Nonprofit Type Tax-Exempt Activities (amounts in $ thousands) Description Mean Median Std. Dev. Educational organizations (n = 486) Assets 213,519 60,826 714,355 Revenues 75,649 29,084 248,458 Expenses 58,395 23,145 200,680 Net income 17,253 3,816 59,055 Investment income 4,350 1,240 15,176 Donations 18,233 4,365 67,994 Fundraising expenses 1,179 621 2,572 Grants 5,168 1,934 10,713 Medical organizations (n = 774) Assets 134,484 79,282 191,984 Revenues 110,477 68,995 128,638 Expenses 102,335 66,534 120,787 Net income 8,142 4,343 13,174 Investment income 2,463 1,116 3,697 Donations 2,522 206 12,310 Fundraising expenses 199 0 1,828 Grants 592 0 4,638 Charitable organizations (n = 564) Assets 177,230 27,091 1,658,926 Revenues 37,288 12,317 174,940 Expenses 21,352 10,115 43,052 Net income 15,936 1,345 162,651 Investment income 4,935 461 51,505 Donations 8,467 2,258 25,696 Fundraising expenses 731 156 1,809 Grants 1,643 0 7,284 Taxable Activities (amounts in $ thousands) Description Mean Median Std. Dev. Educational organizations (n = 486) Assets Revenues 495 125 1,522 Expenses 442 132 1,137 Net income 53 -3 494 Investment income Donations Fundraising expenses Grants Medical organizations

(n = 774) Assets Revenues 608 121 1,358 Expenses 658 126 1,399 Net income -50 -4 437 Investment income Donations Fundraising expenses Grants Charitable organizations (n = 564) Assets Revenues 553 101 2,105 Expenses 560 103 2,050 Net income -7 0 371 Investment income Donations Fundraising expenses Grants Taxable amounts are from the form 990-T, which is an annual tax return that all nonprofits with taxable activity over $1,000 must file. Tax-exempt amounts are from the IRS form 990, which is an annual information return that all nonprofits with gross receipts of more than $25,000, excluding religious organizations, must file. Because the form 990 aggregates both taxable and tax-exempt activities, I take the difference between the aggregate and the taxable amounts to derive the portion attributable solely to tax-exempt activities.

Untabulated results reveal that 85 percent of the medical nonprofits consist of general and specialty hospitals, with the remaining consisting of family planning centers, ambulance services, and blood-supply related nonprofits. Of the educational nonprofits, 80 percent are private universities with the remainder consisting of private high schools, research institutes, and vocational schools. Charitable nonprofits include many different categories, including zoos, theaters, and aquariums, as well as organizations committed to such social causes as providing food, shelter, and clothing.

Only educational nonprofits report mean net profits on their taxable activities, although all nonprofit types report median losses. The sample organization's average loss on taxable activities is just over 1 percent of taxable revenues. In contrast, untabulated analysis based on IRS Statistics of Income files reveals that for the population of nonprofits with taxable activities in 1995, average taxable losses were over 33 percent of taxable revenues. This difference between my sample and the underlying population is consistent with less aggressive (or more profitable) nonprofits being willing to supply their otherwise confidential information on their taxable business activities. If the reported taxable activity profitability differences between my sample and the population are due to differences in expense allocation aggressiveness, then my estimates of tax-motivated expense allocations are biased downward. Other than the difference in taxable activity profitability, untabulated logit results suggest that the sample is not jointly different from the population of all nonprofits with taxable activity in 1995 across taxable and tax-exempt revenues, tax-exempt expenses, total assets, and total donations (p-values of 0.149, 0.115, and 0.351 for schools, hospitals, and charities, respectively).

V. TAX-MOTIVATED EXPENSE ALLOCATION TESTS

Variable and Fixed Expenses Estimation

Table 3 reports the results of estimating equation (1). The coefficient estimates for [.sub.1], which represent the increase in expenses for each additional dollar of taxable revenues, are $0.05, $0.11, and $0.11 for educational, medical, and charitable nonprofits (respectively). Although the coefficient estimates for medical and charitable nonprofits are statistically significant at the 5 percent level, the estimate for educational nonprofits is not. The coefficient estimates for [.sub.2], which represent the increase in expenses for each additional dollar of tax-exempt revenues, are $0.38, $0.74, and $0.38 for educational, medical, and charitable nonprofits (respectively), all of which are statistically significant at the 5 percent level. None of the coefficient estimates for [.sub.3] (the increase in expenses for each additional dollar of investment revenues) are statistically significant. One can interpret the intercepts from equation (1) as the average change in fixed expenses independent of a change in revenues. The point estimates of the intercept are small (ranging from -$0.01 to 0.02) and statistically significant only for charitable nonprofits.

TABLE 3 Regression Estimates Used to Partition Nonprofit Variable Expenses between Taxable and Tax-Exempt Activities TOT AL_[EXP.sub.i] = [Alpha] + [.sub.1] TAX_[REV.sub.i] + [.sub.2] EXEMPT_[REV.sub.i] + [.sub.3] INVEST_[REV.sub.i] + [[Epsilon].sub.i] [Alpha] [.sub.1] [.sub.2] Educational nonprofits -0.01 0.05 0.38(*) (-1.58) (0.90) (7.10) Medical nonprofits 0.01 0.11(*) 0.74(*) (0.67) (3.48) (24.2) Charitable nonprofits 0.02 0.11(*) 0.38(*) (4.89) (2.28) (7.76) Adj. [.sub.3] [R.sup.2] n Educational nonprofits 0.09 0.15 294 (1.72) Medical nonprofits 0.04 0.59 456 (1.40) Charitable nonprofits 0.02 0.17 347 (0.43) (*) Significant at the 5 percent level. Variable definitions: TOTAL_EXP = change in total business expenses (total expenses less fund-raising expenses and grants); TAX_REV = change in taxable business revenues; EXEMPT_REV = change in tax-exempt business revenues (total tax-exempt revenues less donations, and investment revenues); and INVEST_REV = change in investment revenues (interest and dividend income). All data are from the form 990 except taxable revenues, which are taken from the form 990-T. All models use first-differenced, asset-scaled variables. Influential observations that had a Cook's D statistic greater than 1 were deleted. All t-statistics (in parentheses) are asymptotically corrected (White 1980).

The coefficient estimates for tax-exempt activities (i.e., [.sub.2]) significantly exceed those of the taxable activities (i.e., [.sub.1]) for all three types of nonprofits at the 5 percent level. There are at least two reasons to expect that the marginal expenses associated with generating an additional dollar of taxable revenues will be less than those of generating an additional dollar of tax-exempt revenues. First, taxable activities may be more marginally profitable because of their role in a nonprofit's mission: to generate additional funds to support the nonprofit's tax-exempt functions. This would lead nonprofits to maximize taxable revenues and minimize taxable expenses in the absence of other objectives. At the same time, nonprofits aim to maximize expenditures on their exempt missions subject to the constraint of current and accumulated revenues (Cordes and Weisbrod 1998; James 1983). These two forces would tend to drive up the marginal profitability of nonprofits' taxable activities relative to their tax-exempt activities. Second, unrelated business revenues can cause the loss of tax-exempt status and evoke a negative public reaction, so nonprofits are likely to require a higher rate of return for taxable activities than for tax-exempt activities.(10)

Comparison of Expected to Actual Expense Allocations

Table 4 compares my estimates of nonprofits' taxable expenses calculated using equations (2)-(8), to the amounts reported on their forms 990-T. The difference represents my measure of tax-motivated expense allocations. The mean (median) tax-motivated expense allocations are $0.23 ($0.34), $0.62 ($0.69), and $0.00 ($0.00) per dollar of reported taxable expenses for educational, medical, and charitable nonprofits (respectively). The finding that medical nonprofits reallocate the largest proportion of expenses from tax-exempt to taxable activities is consistent with prior evidence that medical nonprofits behave more opportunistically than do educational and charitable nonprofits (Steinberg 1986). The finding that charitable nonprofits do not significantly reallocate expenses from tax-exempt to taxable activities suggests that the effects of the unrelated business income tax depends on the nonprofits'

primary purpose.

TABLE 4 Estimation of Tax-Motivated Expense Allocations from Tax-Exempt to Taxable Activities (amounts in $ thousands) estimated taxable variable expenses = [.sub.1] x [TAX_REV.sub.i] [FIXED.sub.i] = [TOTAL_EXP.sub.i] - ([.sub.1] x [TAX_REV.sub.i] + [.sub.2] x [EXEMPT_REV.sub.i] + [.sub.3] x [INVEST_REV.sub.i]) estimated taxable fixed expenses = [FIXED.sub.i] x ([TAX_REV.sub.i]/ [TAX_REV.sub.i] + [EXEMPT_REV.sub.i]) estimated taxable expenses = estimated taxable variable expenses + estimated taxable fixed expenses tax-motivated expense allocations = reported taxable expenses - estimated taxable expenses Mean Median Std. Dev. Educational nonprofits (n = 486) Estimated taxable expenses 341 67 1,689 Reported taxable expenses 442 132 1,137 Tax-motivated expense allocations 101(*) 45 949 Tax-motivated expense allocations as a percent of reported expenses 23% 34% Medical nonprofits (n = 774) Estimated taxable expenses 253 44 604 Reported taxable expenses 658 126 1,399 Tax-motivated expense allocations 405(*) 86 1,019 Tax-motivated expense allocations as a percent of reported expenses 62% 69% Charitable nonprofits (n = 564) Estimated taxable expenses 575 106 2,494 Reported taxable expenses 560 103 2,050 Tax-motivated expense allocations -15 4 1,332 Tax-motivated expense allocations as a percent of reported expenses 0(#) 0(#) (#) Reported as zero as the tax-motivated expense allocation estimates are not statistically different from zero. Variable definitions: [TOTAL_EXP.sub.i] = total business expenses (total expenses less fund-raising expenses and grants); [TAX_REV.sub.i] = taxable business revenues; [EXEMPT_REV.sub.i] = tax-exempt business revenues (total tax-exempt revenues less donations, and investment revenues); and [INVEST_REV.sub.i] = investment revenues (interest and dividend income). The coefficients [.sub.1], [.sub.2], and [.sub.3] are from Table 3. Reported taxable expenses are from Table 2. Tax-motivated expense allocations denoted by (*) are significantly different from zero at the 5 percent level (two-tailed) based on a Student's t-test of the null hypothesis that reallocated expenses are equal to zero. Inferences using a Wilcoxon signed-rank test are identical.

Some of the tax-motivated allocation percentages appear to be relatively large (e.g., I estimate that 62 percent of medical nonprofits' reported taxable expenses are the result of reallocations from their tax-exempt activities). In absolute terms, however, reallocating only 0.4 percent of tax-exempt expenses to taxable activities will produce a 62 percent tax-motivated expense allocation estimate for medical nonprofits.

Table 2 shows that medical nonprofits in the sample report average taxable net losses of $50 thousand. Adding back my estimate of tax-motivated allocations of $405 thousand (Table 4) suggests that medical nonprofits should report a net profit on taxable activities of $355 thousand ($405 - $50). A similar calculation for educational nonprofits suggests that, rather than reporting an average taxable net income of $53 thousand, average taxable net income should be $154 thousand ($101 + $53).

Of course, the accuracy of my estimated tax-motivated expense allocations is a function of the model, its related assumptions, and independent variable measurement error issues. Although plausible, the estimated tax-motivated allocations may not capture the true underlying (and inherently unmeasurable) allocations. However, to the extent that the estimates produced by my revenue-based models are good approximations for the estimates that would be produced by a resource-based model, the results are useful for calibrating the extent to which tax-motivated allocations contribute to the reported losses on nonprofits' taxable activities.

Differential Tax-Motivated Allocations across Expense Categories

Prior tax compliance research (Clotfelter 1983) suggests that aggressive tax behavior is more likely to occur in poorly defined expense categories (i.e., other expenses) and is less likely to occur in accounts that are subject to third-party reporting to the IRS. To test for this effect, I partition all expenses into one of three categories: (1) reported by third-parties and well-defined, such as officers' compensation and interest expense, (2) not reported by third parties but well-defined, such as depreciation expense, and (3) not reported by third parties and not well-defined, such as "other" expenses. I consider an expense to be well-defined if has a separate line item description on both the form 990 and 990-T. I expect that nonprofits are most likely to reallocate expenses from their tax-exempt to their taxable activities in the "not third-party reported and not well-defined" category, and least likely to reallocate expenses in the "third-party reported and well-defined" category.

Ideally, I would conduct this analysis by estimating three expense-category-specific coefficients using equation (1). Although it is possible to estimate three separate coefficients in equation (1), I could not use these coefficients to partition expenses between taxable and tax-exempt activities because equation (2) multiplies the coefficients by taxable revenues, which I cannot partition across the three expense categories. (Multiplying the three separate coefficients by total taxable revenues would overestimate the expenses allocable to the taxable activity because total revenues would be multiplied three times.) Therefore I must use the aggregate coefficients for this test.(11)

The results in Table 5 are consistent with expectations. For all nonprofit types, I do not find significant tax-motivated expense allocations in the "third-party reported and well-defined" category, suggesting that nonprofits avoid reallocating expenses from tax-exempt to taxable activities that are highly visible to the IRS. I find the most significant tax-motivated expense allocations in the "not third-party reported and not well-defined" expense category for educational and medical nonprofits, consistent with the notion that nonprofits reallocate expenses where they are least likely to draw attention. Finally, I find significant tax-motivated expense allocations in the "not third-party reported but well-defined" expense category for medical nonprofits only. Untabulated results reveal that the differences between each of the three expense categories are statistically significant at the 5 percent level for medical and educational nonprofits.

TABLE 5 Estimation of Tax-Motivated Expense Allocations by Expense Category (amounts in $ thousands) Mean as a Percent of Total Description Mean Median Expenses Educational nonprofits Third-party reporting and well-defined 1 0 0 No third-party reporting but well-defined 20 5 0 No third-party reporting and not well-defined 89(*) 33 31 Medical nonprofits Third-party reporting and well-defined 3 0 0 No third-party reporting but well-defined 153(*) 18 76 No third-party reporting and not well-defined 324(*) 63 73 Charitable nonprofits Third-party reporting and well-defined -1 0 0 No third-party reporting but well-defined -10 0 0 No third-party reporting and not well-defined -49 2 0 I estimated these amounts using the aggregate coefficient estimates from Table 3. Tax-motivated expense allocations denoted by (*) are significantly different from zero at the 5 percent level (two-tailed) based on a Student's t-test of the null hypothesis that tax-motivated allocated expenses are equal to zero. Inferences using a Wilcoxon signed-rank test are identical. Differences

across the three expense categories are statistically different at the 5 percent level for educational and medical nonprofits. For this analysis, expenses are separated into three categories based on the extent of third-party reporting to the IRS and whether the expense is well-defined with a separate line item description on the form 990 and 990-T. The first category is "Third-party reporting and well-defined" and includes interest, tax, and officers' compensation expenses, all of which are reported to the IRS by third parties and have separate line items. The second category is "No third-party reporting but well-defined" and includes expenses that have separate line items but are not subject to third-party reporting to the IRS. The third category is "No third-party reporting and not well-defined" and includes expenses in the "other" account.

VI. CONCLUSIONS

This study examines nonprofit organizations' expense allocation behavior in response to the tax on their unrelated business income. Although nonprofits are generally exempt from income taxation, they are taxed similarly to for-profit corporations on the portion of their activities not closely related to their exempt purpose. Because nonprofits can have both taxable and tax-exempt activities, they have an incentive to shift expenses from tax-exempt activities to taxable activities to reduce overall tax liabilities. In the aggregate, nonprofits report losses on their taxable activities of more than 30 percent of revenues. Using a database of more than 1,800 confidential income tax returns, I develop a model of expected expenses for taxable activities and then compare these estimates to those actually reported on nonprofits' tax returns to assess the extent to which the reported losses are likely due to tax-motivated expense allocations. Of course, the accuracy of these estimates is a function of the model, its related assumptions, and independent variable measurement error issues. Although plausible, my estimates capture the tree underlying (and inherently unmeasurable) tax-motivated allocations with error.

The study represents the first large-sample, organization-level empirical analysis of the unrelated business income tax, one of only four types of income taxes in the United States. The results suggest that medical (educational) nonprofits in the sample responded to tax incentives by reallocating an average of $400 ($100) thousand of expenses from their tax-exempt activities to their taxable activities. I did not find evidence of tax-motivated expense allocations by charitable nonprofits. Most of the tax-motivated expense allocations occur in categories that are not subject to third-party reporting to the IRS and are poorly defined, such as "other" expenses. On average, the sample's taxable activities are more profitable than the population's. If the profitability differences between my sample and the related population are due to differences in expense allocation aggressiveness, then my estimates of tax-motivated expense allocations are likely biased downward.

These results suggest that the recurring aggregate losses nonprofits report on their unrelated taxable activities are likely at least partially attributable to tax-motivated expense allocations. Given the ambiguity in applicable tax law, it is not clear whether these tax-motivated allocations are completely compliant. In any event, to the extent that nonprofits allocate expenses from their tax-exempt to their taxable activities to avoid the unrelated business income tax, the tax as currently structured fails to fully achieve its goals of preventing unfair competition and raising revenues.

Although these results provide an initial approximation of the effect of tax incentives on nonprofit behavior, future research may refine the analysis by using facility use data, examining why educational and medical nonprofits respond to tax incentives while charitable nonprofits do not, and expanding the analysis beyond 501(c)(3) organizations.

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(1) Some observers suggest that unfair competition may not occur in perfect markets with perfect compliance. In this setting, the purpose of the unrelated business income tax shifts from preventing unfair competition to preventing inefficient production. See Hansmann (1989) and Sansing (1998) for a discussion of this issue.

(2) In addition to nonprofit organizations, income taxes are levied on individuals, corporations, and decedent's estates.

(3) In addition to tax-motivated expense shifting, nonprofits may also engage in revenue shifting by reporting a portion of their taxable revenues as nontaxable. The inability to construct reasonable expectations models of revenues prevents me from estimating tax-motivated revenue reallocations, omitting a potentially important source of tax-motivated activity from the study.

(4) For example, the American Automobile Association (AAA) is a nonprofit membership organization for state purposes, but does not meet IRS criteria for federal income tax exemption.

(5) Expenses that are directly attributable to an activity are not subject to allocation.

(6) The IRS has formally issued a non-acquiescence, a Technical Advice Memorandum, and a Private Letter Ruling on this point. See Private Letter Ruling 9149006.

(7) I estimated many alternative specifications of this model: logarithmically transforming the data; including squares of the independent variables as additional regressors; using a levels specification; alternately deflating by assets, revenues, and wages; using only those observations where taxable revenues were at least 5 percent of total revenues; estimating separate models for taxable and tax-exempt revenues; using yearly fixed effects; splitting the sample on different dates of receipt of data to mitigate the

effects of nonresponse bias; and trimming based on Cook's D of 0.5. Results are generally not altered. In the case of the levels specification, the estimated tax-motivated allocations are higher than those reported in the paper.

(8) In addition to requesting the information, my letter stated, "specific information about your organization will not be made public. The study will present only aggregated data, no single organization will be identifiable in any way."

(9) The National Center for Charitable Statistics is a private agency with authority from the IRS to collect and disseminate data on nonprofits.

(10) TIAA-CREF, a retirement fund for educational employees, recently lost its tax-exempt status due to excessive unrelated business income. The president of the American Medical Association resigned under public pressure after entering into a contract to generate unrelated business income by providing the AMA seal of approval on appliances manufactured by Sunbeam Corporation (Chicago Sun-Times 1997).

(11) As a sensitivity test, I estimated three coefficients (one for each expense category) in equation (1) and tested for their differences. Untabulated results reveal that the coefficient estimates for the "not-reported-and-not-well-defined" and the "not-reported-but-well-defined" categories are not significantly different at the 5 percent level, providing some comfort that the results are unlikely to be sensitive to using aggregate coefficient estimates.

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