

THE EFFECT OF TAX EXEMPTION AND OTHER FACTORS ON THE MARKET SHARE OF NONPROFIT VERSUS FOR-PROFIT FIRMS**

HENRY HANSMANN*

ABSTRACT

Most jurisdictions exempt nonprofit firms from property, sales, and corporate income taxes in various industries, such as health care and education, in which both nonprofit and for-profit firms compete. Cross-section estimates using state tax data indicate that these exemptions significantly increase the market share of nonprofit firms vis-à-vis their for-profit counterparts. The relative market shares of nonprofit and for-profit firms is also affected by rapid increases in demand for an industry's services and by the size of the governmental sector.

I. Introduction

THERE are a number of important industries in which both nonprofit and for-profit firms have substantial market share—including, for example, hospital care, nursing care, prepaid group medical practice, day care, vocational education, and publishing. Many of the nonprofit firms in these industries are not charitable organizations in the traditional sense, providing free or below-cost services financed by philanthropic contributions, but rather are "commercial" nonprofits that, like their for-profit counterparts, provide services to the public almost exclusively on a fee-for-service basis and receive little or no donative financing (Hansmann, 1980).

Two different, though not necessarily competing, theories have been offered to explain the presence of commercial nonprofit firms in such industries. One theory focuses on problems of agency, asymmetric information, or "contract failure" (Nelson and Krashinsky, 1973; Hansmann, 1980; Easley and O'Hara, 1983). According to this theory, nonprofit firms

tend to arise where, owing to the complexity of the service itself or to the circumstances under which it is provided, consumers have difficulty judging the quality of a firm's performance. In such situations, some consumers prefer to patronize nonprofit firms because, owing to the constraints that characterize the nonprofit form, such firms may have less incentive or ability than for-profit firms to behave opportunistically.

Another theory is that the substantial market share of nonprofit firms in many service industries is in large part a response to the explicit or implicit subsidies that are available to nonprofits but not to their for-profit competitors. These subsidies include, for example, tax exemption, reduced postal rates, the ability to issue tax-exempt bonds, and preferential treatment under the unemployment insurance laws. Without such subsidies, it has been argued, the inherent inefficiencies of the nonprofit form as contrasted to the for-profit form—such as lack of access to equity capital and poor incentives for cost minimization—would cause the market share of nonprofit firms to be much smaller than it presently is (Schoenfeld, 1970; Fama and Jensen, 1983).

The latter theory has been echoed in the complaints of for-profit firms that nonprofit firms have an unfair competitive advantage as a consequence of the various subsidies they receive. These complaints have recently begun to receive the attention of policymakers. The Small Business Administration has issued a report highly critical of the special preferences given nonprofit firms that compete with for-profit firms (U.S. Small Business Administration, 1984). In addition, the Treasury has proposed to curtail corporate income tax exemption and the right to issue tax-exempt bonds for some classes of nonprofits, arguing that such tax preferences create an inappropriate bias in

*Yale University.

favor of the nonprofit form (U.S. Dept. of the Treasury, 1985).

This article presents an empirical test of the subsidy theory by exploring the extent to which the market share of nonprofit firms is responsive to one particular kind of subsidy—tax exemption. The results provide an estimate of the change in the size of the nonprofit sector that would result if tax exemption or other similar fiscal preferences were eliminated. In addition, other factors that might influence the balance between nonprofit and for-profit firms are explored, including rapid increases in demand for an industry's services and competition from governmental enterprise.

II. General Method

The federal corporate income tax is the most conspicuous, and perhaps the most financially important, tax from which nonprofit organizations are commonly exempt. Because the federal tax does not vary geographically, however, longitudinal data are necessary to examine its effects, and sufficient longitudinal data on most industries that contain a substantial number of nonprofit firms are unavailable. Consequently, to study the effects of tax exemption it is necessary to focus on exemption from state and local taxes, for which cross-sectional analysis can be employed.

In nearly all states, nonprofit firms are exempt from each of the three taxes that are commonly used by state and local governments: property taxes, sales taxes, and corporate income taxes. Therefore, one cannot simply test whether the market share of nonprofit firms is significantly higher in states that provide an exemption than in states that do not.

The value of tax exemption, however, varies directly with the local tax rate. Exemption from the property tax, for example, is worth roughly twice as much where the tax rate is 3 percent as it is where the rate is 1.5 percent. (The differential burden imposed by the higher rate will, of course, be mitigated to the extent that firms are able to substitute away from taxable real estate as a factor of produc-

tion.) As it is, tax rates vary significantly from one jurisdiction to another; the average effective property tax rate, for example, ranges from 4.05 percent in Massachusetts to .42 percent in Alabama. If tax exemption is an important inducement to the development of nonprofit firms, then the ratio of nonprofit to for-profit firms should be larger in jurisdictions where tax rates are high than in jurisdictions where rates are low.

Consequently, the general approach employed here was to determine, for each of several industries, the percentage (denoted *P*) of nongovernmental (nonprofit plus for-profit) firms that are nonprofit in each of a sample of jurisdictions, and then to regress this figure on (a) the tax rates prevailing in those jurisdictions for property taxes, sales taxes, and corporate income taxes and (b) a vector of various other demand-side and supply-side factors that were included both to serve as controls and because they are of interest in their own right. Data are for 1975, or for a year as close to that as possible.

Two separate jurisdictional samples were employed: one using states as the units of observation, and employing data averaged across each state, the other employing the largest city¹ within each state as the unit of observation.² For each jurisdictional sample, the model was estimated separately for each of several industries in which both nonprofit and for-profit firms have substantial market shares: (1) residential nursing homes; (2) hospitals providing short-term general care; (3) post-secondary vocational schools; and (4) (for the state sample only) primary and secondary schools. Results of these regressions are reported in Table 1. Table 2 presents results of regressions in which the data from all four industries were pooled in the statewide sample, and Table 3 presents results for the pooled city sample. In each case, the model was estimated in logit form using weighted least squares.

In the case of hospitals and nursing homes, the dependent variable *P* was computed as the percentage of beds that are in nonprofit facilities. In the case of vocational schools, *P* reflects the percent-

TABLE 1: WEIGHTED LEAST SQUARES LOGIT REGRESSION COEFFICIENTS*

Dependent Variable: $\ln[P/(1-P)]$; P = Percent Institutions Nonprofit

(Coefficients are transformed to show mean impact on P of unit change in independent variables)

	STATEWIDE SAMPLE				CITY SAMPLE		
	Nursing Homes	Hospitals	Primary and Secondary Schools	Voc'l Schools	Nursing Homes	Hospitals	Voc'l Schools
Property Tax Rate Differential	2.85 (1.46)	3.64 (1.32)	-.914 (0.47)	3.56 (2.39)	-2.33 (1.28)	.460 (0.27)	3.37 (2.45)
Sales Tax Rate Differential	1.38 (1.96)	.594 (1.05)	2.23 (2.69)	.425 (0.60)	.308 (0.36)	.320 (0.89)	2.09 (0.72)
Corporate Tax Rate Differential	1.42 (1.95)	.0229 (0.06)	.333 (0.45)	1.15 (2.03)	.627 (1.09)	1.02 (2.08)	2.09 (3.19)
% Change in Population	-.241 (2.16)	-.0799 (0.91)	-.343 (1.65)	.0175 (0.14)	-.0996 (2.66)	-.216 (2.66)	-.0038 (0.07)
% Change in Real Per Capita Income	.637 (2.73)	-.358 (1.56)	-.387 (1.44)	-.537 (2.41)	.376 (1.27)	.0819 (0.32)	.852 (2.95)
Southern States Dummy			-.197 (3.89)				
% Governmental Institutions	1.00 (5.21)	-.301 (2.86)	.284 (0.59)	.228 (1.92)	.317 (0.93)	.345 (2.53)	.0706 (0.81)
Contribution Ratio	-4.94 (0.69)	-1.82 (0.33)	-9.04 (1.15)	-11.6 (2.38)			
Per Capita Income	.0152 (0.49)	-.0966 (3.20)	-.0310 (0.91)	-.106 (3.32)	-.0266 (0.74)	-.0238 (1.00)	-.101 (2.60)
Constant	-3.49 (2.71)	10.2 (3.21)	1.12 (0.51)	3.31 (1.98)	-.0507 (0.23)	.239 (1.44)	.051 (0.26)
Degrees of Freedom	42	42	41	42	41	41	42
R ²	.71	.73	.60	.63	.48	.74	.52
R ₁ ²	.41	.07	.44	.19	.01	.01	.17
R ₂ ²	.27	.08	.47	.30	.01	.03	.06
Joint F Test for Tax Rate Variables	5.25	2.03	2.41	4.65	.95	1.72	4.63

*t statistics are given in parentheses beneath estimated values for coefficients

age of total enrollment accounted for by nonprofit firms.

In the case of primary and secondary schools, data limitations required that P be computed using just the respective numbers of nonprofit and for-profit firms in each jurisdiction, and prevented religious schools from being included in the count of nonprofit schools. Data on primary and secondary schools could not be obtained for the city sample. For these

reasons, and also because the data on primary and secondary schools appear to be somewhat unreliable (Cooper and McLaughlin, 1982) and because the weights used in the logit model give particular emphasis to the data on primary and secondary schools in the pooled regressions,³ columns (3) and (5) of Table 2 report pooled statewide regressions from which the data on primary and secondary schools have been omitted.

TABLE 2: WEIGHTED LEAST SQUARES LOGIT REGRESSION
COEFFICIENTS (TRANSFORMED) FOR POOLED STATEWIDE DATA

	(1)	(2)	(3)	(4)	(5)
Property Tax Rate	1.95	1.86	3.37	-1.54	.460
Differential	(1.94)	(1.81)	(2.75)	(1.46)	(0.37)
Sales Tax Rate	1.10	1.10	1.35	.945	.912
Differential	(2.86)	(2.89)	(3.02)	(2.11)	(2.14)
Corporate Tax	1.03	.932	1.25	.297	1.10
Rate Differential	(3.60)	(3.21)	(3.99)	(0.96)	(3.47)
% Change in	-.169	-.204	-.241	-.326	-.252
Population	(2.56)	(3.10)	(3.49)	(4.44)	(3.49)
% Change in Real	.136	.058	.624	-.130	.120
PCI: Nursing Homes	(1.14)	(0.48)	(3.80)	(0.98)	(0.92)
Hospitals	-.697	-.644	-.454	-.066	-.458
	(1.46)	(1.32)	(0.95)	(0.98)	(0.85)
Voc'l Schools	-.883	-.886	-.912	-.775	-.695
	(2.60)	(2.54)	(2.68)	(2.07)	(2.00)
P & S Schools	-.154	-.213		-.381	-.166
	(0.63)	(0.85)		(1.63)	(0.60)
Southern States	-.128	-.128		-.142	-.124
Dummy for Schools	(2.83)	(2.78)		(2.76)	(2.42)
% Governmental:	.846	.839	1.03	.675	
Nursing Homes	(6.36)	(6.17)	(7.40)	(4.40)	
Hospitals	-.688	-.750	-.702	-.478	
	(2.39)	(2.55)	(2.45)	(1.61)	
Voc'l Schools	.290	.253	.321	.270	
	(1.75)	(1.50)	(1.93)	(1.49)	
P & S Schools	.363	.352		-.168	
	(0.99)	(0.93)		(0.40)	
Contribution	-10.8				
Ratio	(3.07)				
Per Cap. Income:	-.056	-.072	.013		-.061
Nursing Homes	(5.03)	(7.20)	(0.57)		(5.66)
Hospitals	-.184	-.182	-.170		.0750
	(2.35)	(2.27)	(2.16)		(0.95)
Voc'l Schools	-.116	-.112	-.123		-.129
	(2.29)	(2.17)	(2.44)		(2.38)
P & S Schools	-.029	-.0266			.0145
	(0.95)	(0.86)			(0.42)
Hospital	1.75	1.61	2.13	.627	.731
Dummy	(2.84)	(2.56)	(3.38)	(5.90)	(1.21)
Voc'l School	.491	.378	1.09	.182	.731
Dummy	(1.37)	(1.04)	(2.82)	(0.54)	(1.47)
Pri. & Sec.	.00635	-.110		.463	.121
School Dummy	(0.02)	(0.27)		(1.26)	(0.46)
Constant	.0261	.0294	-.677	-.0515	.0518
	(0.55)	(0.61)	(4.24)	(4.55)	(0.86)
Deg. of Freedom	182	183	137	187	187
R ²	.83	.82	.85	.76	.78
R ₁ ²	.63	.60	.65	.66	.61
R ₂ ²	.79	.77	.81	.79	.80
Joint F Test for Tax Rate Variables	9.47	8.13	12.2	2.03	5.94

TABLE 3: WEIGHTED LEAST SQUARES LOGIT REGRESSION
COEFFICIENTS (TRANSFORMED) FOR POOLED CITY DATA

	(1)	(2)	(3)
Property Tax Rate:	-3.08	-2.26	-3.23
Nursing Homes	(2.02)	(1.62)	(2.16)
Hospitals	3.70	4.05	4.10
	(0.76)	(0.82)	(0.84)
Voc'l Schools	2.32	3.47	2.19
	(1.26)	(1.96)	(1.21)
Sales Tax Rate	.163	.463	.0852
Differential	(0.31)	(0.95)	(0.16)
Corporate Tax	.914	.899	.832
Rate Differential	(2.29)	(2.25)	(2.13)
% Change Pop.:	-.0693	-.0981	-.0640
Nursing Homes	(0.74)	(1.04)	(0.70)
Hospitals	-.493	-.620	-.420
	(1.73)	(2.33)	(1.50)
Voc'l Schools	-.0176	-.0104	-.00710
	(0.24)	(0.12)	(0.10)
% Change in Real	.0591	.161	.111
Per Capita Income	(0.32)	(0.91)	(0.62)
% Governmental:	.261	.330	
Nursing Homes	(0.91)	(1.21)	
Hospitals	-.591	-.513	
	(1.37)	(1.19)	
Voc'l Schools	.0859	.0239	
	(0.70)	(0.20)	
Per Cap. Income:	-.0288		-.0358
Nursing Homes	(1.01)		(1.31)
Hospitals	-.0753		-.0598
	(1.00)		(0.80)
Voc'l Schools	-.113		-.103
	(2.04)		(1.92)
Hospital	.700	.441	.441
Dummy	(1.58)	(3.26)	(1.06)
Voc'l School	.197	-.210	.121
Dummy	(0.61)	(3.00)	(0.38)
Constant	-.0337	-.228	.00748
	(0.18)	(3.22)	(0.04)
Degrees of Freedom	130	133	133
R ²	.70	.69	.70
R ₁ ²	.39	.36	.42
R ₂ ²	.67	.66	.69
Joint F Test for Tax Rate Variables	2.54	2.74	2.61

The estimated coefficients that appear in Table 1 have been transformed to show the impact on P of a unit change in each independent variable, computed at the mean value of P for each institutional type. These mean values are: nursing homes, P = 24 percent; hospitals, P = 91 percent; primary and secondary schools, P = 63 percent; vocational schools, P = 15 percent. In Tables 2 and 3 the coefficients have been similarly transformed using a value of P = 24 percent, the mean value of P for nursing homes.

In the pooled regressions, the coefficients for some of the variables have been permitted to vary for the four different types of institutions because these coefficients take substantially different values for the different industries. In particular, coefficients for the independent variables in the pooled regressions were constrained to be equal for the four institutional types if and only if the hypothesis that the coefficients for that variable are all equal in value could not be rejected at the 25 percent level of confidence (a confidence level chosen for the sake of conservatism in pooling).⁴

III. Explanatory Variables and Results

A. Tax Exemption

As discussed above, for each of the three taxes, the rate of taxation was employed as a measure of the value of exemption. There are a few jurisdictions in which both nonprofit and for-profit institutions in a given industry are exempt from one or another tax, or in which neither nonprofit nor for-profit institutions are exempt. For such jurisdictions, the corresponding tax rate variable was set equal to zero. Thus, the tax rate variable measures the effective *difference* in tax rates applied to nonprofit and for-profit institutions for a given industry in a given jurisdiction.⁵

Property Taxes. For the state sample, the property tax variable is based on a statewide weighted average effective real property tax rate. Such averaging has the disadvantage that it obscures the vari-

ation in property tax rates that occurs from one local jurisdiction to another within each state. In fact, however, local property tax rates are relatively uniform within any given state.⁶ Moreover, in the city sample there is no intra-jurisdictional variation in rates.

In the regressions reported in Tables 1-3, the coefficient for the property tax variable is, as one would expect, generally (though not always) positive. It is both positive and significant, however, only in the separate regressions for vocational schools, and in the pooled statewide regressions from which primary and secondary schools have been omitted. The magnitude of the estimated coefficient for the property tax variable is generally relatively modest, though not insubstantial. For example, based on the transformed coefficients in the first column of Table 1, elimination of the property tax exemption in the average state (where the tax rate is 1.73 percent) would lead to a drop of 5 points ($=2.85 \times 1.73$ percent) in the (average) percentage of nursing homes that are nonprofit, from 24 percent to 19 percent.⁷

Sales Taxes. The sales tax variable reflects taxes on sales to nonprofit organizations. (For the service industries involved here, sales by firms, whether nonprofit or for-profit, are untaxed in nearly all states.) In the state sample, this variable reflects the rate for the sales tax levied at the state level. For the city sample, the rate used was the sum of the rate levied at the state level and the rate levied, if any, separately by the city or county.

The coefficient for the sales tax variable is nearly always positive, and is significant in the pooled statewide regressions. Based on the Table 1 estimates, elimination of the sales tax exemption in the average state (with a sales tax rate of 4 percent) would reduce the percentage of nursing homes that are nonprofit by approximately 5.5 points, from 24 percent to 19.5 percent.

Corporate Income Taxes. The corporate tax variable reflects the maximum rate of tax levied by the state.⁸ The coefficient for this variable is positive in all of the regressions and significant in most of

them. Moreover, this variable is not only more clearly significant than the other tax variables, but also more pronounced in the magnitude of its effect. For example, eliminating the exemption in a state with an average corporate tax rate (6 percent) would, on the basis of the Table 1 results, reduce the percentage of nursing homes that are nonprofit by roughly 8.5 points, from 24 percent to 15.5 percent.

It is interesting that the effects of corporate tax exemption should show up so strongly, while the effects of property tax exemption appear so weak. One might expect, *a priori*, that the pattern would be the reverse. Most of the types of institutions covered by this study make substantial, and to a degree unavoidable, investments in real estate. (Vocational schools may be an exception.) State corporate income tax rates, in contrast, are relatively low, and one might think small proprietary service firms such as those that are frequently found in these industries would find it easy to avoid substantial income tax liabilities by devices such as paying out profits through real estate transactions and large salaries.

Combined Tax Effects. The F test reported with each regression indicates that the three tax exemption variables are jointly significant at the 5 percent level in four of the seven regressions in Table 1 and in all of the pooled regressions except for (4) in Table 2. As the latter regression indicates, the magnitude and significance of all three of the tax exemption coefficients decline in the statewide regressions with omission of the per capita income variable (discussed below), although the reverse is the case with the pooled city regressions. Such sensitivity to inclusion of the per capita income variable, the reason for which is not obvious, evidently has its source in the (somewhat questionable) primary and secondary schools data; when primary and secondary schools are omitted from the pooled sample, as in (5) of Table 2, omission of the per capita income variable does not decrease either the magnitude or the significance of the three tax exemption coefficients.

When combined, the tax effects are

substantial in magnitude. For example, based on the figures in Table 1, elimination of all three exemptions in a state in which the value of P and all tax rates are equal to the national averages would reduce the percentage of private nursing homes that are nonprofit from 24 percent to 5 percent.

Indirect Tax Effects. High tax rates could affect the nonprofit market share in two different ways. The first is by increasing the value of the exemption from taxation, as discussed above. The second is through competition from governmental firms. States with high tax rates might use the resulting large revenues to provide unusually high levels of public services, and in particular to finance governmental hospitals, nursing homes, or schools that compete with private firms offering similar services. If this were the case, and if the governmental firms in these industries tended for some reason to displace nonprofit (or for-profit) firms disproportionately, then there would be an additional source of negative (or positive) correlation between high tax rates and the dependent variable P. For the four industries and three taxes involved here, however, the simple correlation between tax rates and the market share occupied by governmental firms is in nearly all cases *negative*, and is quite small and insignificant in the two (out of twelve) cases in which it is positive. Moreover, this same pattern continues to hold when the governmental market share is regressed on all of the other right-hand variables for each of the four industries.

In any event, competition from governmental firms was separately controlled for, as discussed below.

B. Other Factors

Demand Growth. Steinwald and Neuhauer (1970) have shown that the proportion of hospitals that are for-profit has grown during periods in which the demand for hospital services has expanded rapidly, and has then declined again when demand has leveled off. This presumably reflects the greater ease that for-profit firms have in raising capital by virtue of

their access to equity financing, as well as the greater incentives for entry and expansion felt by for-profit entrepreneurs and managers than by their counterparts in the non-profit sector.

Three variables were employed to capture demand growth. The first is the percentage change in population, over the preceding ten years, in the age group served by the industry in question. The age groups used were: nursing homes, 65 years and older; primary and secondary schools, 5-17 years; vocational schools, 18-20 years; hospitals, all ages. This variable nearly always has the expected negative sign, and is significant in all of the pooled statewide regressions and in several of the other regressions as well.

The second demand growth variable is the percentage change in real per capita income over the preceding ten years. This variable behaves somewhat erratically. In the statewide regressions it is generally negative, as expected, though it is not significant in most cases.⁹

Finally, a dummy variable for states in the Southeast was employed in regressions involving primary and secondary schools in an effort to control for the rapid increase in the demand for private schooling that developed in the Southeast in the late 1960s and early 1970s as a result of the racial integration of public schools. The coefficient is negative and significant in all cases.¹⁰

Governmental Competition. In many industries, including the four involved here, services are supplied by governmentally owned and operated firms as well as by private nonprofit and for-profit firms. It is difficult to predict *a priori* what effect the presence of such governmental firms should have on the balance between nonprofit and for-profit firms. If, for example, nonprofit firms in a given industry are sometimes philanthropically financed and serve the poor, while for-profit firms serve the more well-to-do, and if governmental firms also target their services largely to the poor, then one would expect that governmental firms would displace nonprofit firms disproportionately. That is, if the number of governmental firms is established exogenously

(i.e., independently of the existing numbers of nonprofit and for-profit firms), then one would expect to find a smaller nonprofit market share in jurisdictions with relatively large numbers of governmental firms.

There may, however, be industries in which nonprofit firms tend to serve a relatively elite clientele, while for-profit and governmental firms share the low-price/low-quality end of the market. In such cases, governmental firms would substitute primarily for for-profit firms. For example, residential nursing care, in which nonprofit firms have higher average charges than for-profit firms, may be such an industry.

To measure the extent of competition from governmental firms, a variable was constructed giving the percentage of all institutions (governmental, nonprofit, and for-profit) in each jurisdiction that are governmental. The estimated coefficient for this variable is consistently positive for nursing homes and vocational schools, and negative for hospitals; the coefficient is significant in some of the regressions and not in others. The comparable coefficient for primary and secondary schools is not consistent in sign, and is never significant. This suggests that governmental firms are better substitutes for nonprofit firms than for for-profit firms where hospitals are concerned, while the reverse is the case where nursing homes and vocational schools are concerned.

It is possible that the number of governmental firms in these industries is not exogenous. For example, where for some reason philanthropically financed nonprofit firms do not arise in sufficient numbers to meet the needs of the poor, the government might step in to fill the gap. Consequently, the correlations between the number of governmental firms and the number of nonprofit firms observed here must be interpreted with caution; these results can indicate whether governmental firms are substitutes or complements for nonprofit firms, but cannot clearly establish whether governmental firms arise to fill gaps left by the private sector or vice versa.

Omission of the governmental compe-

tion variables does not have a substantial effect on the estimated coefficients for the tax rate variable (compare (2) and (6) in Table 2), suggesting that high tax rates do not have an important indirect effect on nonprofit market share by financing an expanded governmental sector—a result that is consistent with the generally negative correlation noted previously between tax rates and the market share of governmental firms in these industries.

Philanthropic Support. Although the nonprofit firms involved here generally rely on user fees to provide nearly all of their income, some also depend in part on donations. The latter firms will presumably thrive best where philanthropy is a well-established custom. It is sometimes suggested that the degree of philanthropy or voluntarism that characterizes communities varies from one region of the country to another. In particular, voluntarism is commonly thought to be well-established in the Northeast and relatively weak in the Southeast. Consequently, a variable was constructed for each state that reflects the ratio of philanthropic contributions to personal income. Contributions were measured by itemized federal income tax deductions for charity. These data were not available for the city sample.

Surprisingly, this variable has a negative coefficient in all cases, and is in fact significant in the vocational school regression and in the pooled statewide regression. Presumably this result is spurious. In fact, the contribution variable is, contrary to intuition, inversely correlated with per capita income, and has unusually high values in southern states; it achieves its highest values in Utah, South Carolina, and Alabama. This suggests that the variable largely reflects donations to religious institutions, and thus is a poor measure of the proclivity for contributing to the service institutions involved here.

The contributions variable has been omitted from all but the first regression in Table 2, both to avoid any spurious effect that may result from its inclusion and to improve comparability with the results for the city sample. As Table 2 shows, its omission does not substantially affect the

magnitude of the other estimated coefficients.

Wealth of Clientele. Although we commonly think of nonprofit firms as philanthropic, nonprofits in the industries involved here, as noted above, provide relatively modest amounts of charitable service. For schooling the poor typically attend public institutions while Medicare and Medicaid commonly pay for nursing care and hospital care for the poor (whether they patronize proprietary or nonprofit firms). Indeed, nonprofit firms are frequently among the elite institutions in these four industries, and commonly cater to the relatively affluent. To determine whether in fact the services of nonprofit firms tend to be a superior good in these industries, per capita income was included among the independent variables. For all four industries, the coefficient for this variable is negative in most of the regressions and is often significant; it is never both positive and significant. This suggests that the services of nonprofit firms in these industries are not, overall, a superior good.¹¹

V. Conclusion

The results reported here provide support for the proposition that tax exemption—or at least exemption from sales and, particularly, corporate income taxes—offers nonprofit firms a significant advantage in establishing market share vis-à-vis for-profit firms offering similar services. In addition, they strongly support the proposition that rapid increases in demand increase the market share of proprietary firms. Finally, they suggest that competition from governmental firms also influences the market share of nonprofit firms, though the direction and strength of the effect differ among industries.

It follows that exemption from the federal corporate income tax, which has rates substantially higher than the corresponding state taxes studied here, may provide a particularly strong subsidy to the nonprofit form. Another implication is that the various other state and federal exemptions and subsidies that are available to nonprofit firms have also contributed

to the strong presence that such firms have in many service industries.

It has been argued that, whatever its consequences for the market share of nonprofit firms in general, the availability of property tax exemption may have an important effect on the *location* of nonprofit firms (Quigley and Schmenner, 1975). In particular, nonprofit firms have a strong incentive to locate in central cities, where property tax rates are especially high. The taxes will be capitalized into land prices, driving them down; nonprofit firms can take advantage of these reduced prices since they avoid the compensating disadvantage of paying the property taxes. This should aggravate the tendency of property tax exemption to deplete the tax roles of central cities, and provides another argument against the prevailing practice of determining the scope of property tax exemption at the state rather than the local level. The city regressions reported here, however, suggest that this is not a serious problem: cities with high property tax rates do not have a significantly higher proportion of nonprofit firms than cities with low tax rates, indicating that the locational decisions of nonprofits are not particularly responsive to local property taxes.

Evidence, such as that presented here, concerning the influence of tax exemption on the market share of nonprofit and for-profit firms helps inform the ongoing debate over the wisdom of maintaining the current widespread system of exemptions for nonprofit organizations.¹² Such evidence cannot, however, decide the issue by itself. If the market share of nonprofit firms is largely unaffected by the exemption, it does not necessarily follow that the exemption constitutes poor or ineffective policy; for example, if nonprofit firms in a given industry serve an impoverished clientele that would not otherwise be served by for-profit firms, and if the effect of tax exemption is not to increase the number of poor people served, but rather just to improve the quality of services rendered, exemption might nevertheless be thought justified on distributional grounds. Conversely, if exemption *does* yield nonprofit firms a significant in-

crease in market share, then the exemption is justified as a matter of policy if, but only if, there is a coherent rationale for subsidizing a service when it is provided by nonprofit, but not by for-profit, firms. There are several possible rationales of this sort, though none of them are without difficulties (Hansmann, 1981, 1986).

One rationale for exempting commercial nonprofits from corporate income taxes (and perhaps from property taxes as well) is that exemption can help to compensate for obstacles that nonprofits face in raising capital. Such obstacles may impose inefficient constraints on expansion of the nonprofit sector where nonprofits offer services—such as protection from opportunism in the face of contract failure—that are not as well supplied by their for-profit competitors. The empirical results presented here provide partial support for this theory of the exemption. First, they indicate that in fact nonprofit firms tend to lose ground to their for-profit competitors in the face of rapidly growing demand (though it is not possible to determine from these results alone how much of this effect is due to capital constraints and how much is due to lack of entrepreneurial incentives). Second, they indicate that corporate income tax exemption may well be an effective—though not necessarily the most efficient—means of promoting the expansion of the nonprofit sector. Final acceptance or rejection of such a theory, however, must await further information about the relative qualities of services provided by nonprofit and for-profit firms.

FOOTNOTES

**Preparation of this paper was supported by a grant from the Program on Non-Profit Organizations, Institution for Social and Policy Studies, Yale University. Special thanks are due to Robert Inman, Peter Linneman, Jon K. Peck, Robert Pollak, John M. Quigley, Samuel Rea, Richard Steinberg, and Burton Weisbrod, and to participants in workshops at SUNY Stony Brook, the University of Pennsylvania, and Yale, for helpful discussions and for comments on earlier drafts.

¹Defined as a political jurisdiction, not as a metropolitan area.

²For detailed description of data sources and vari-

ables see Hansmann (1985).

³To correct for heteroscedasticity, each observation in the separate institutional regressions was weighted by the factor $[P(100-P)N]^{1/2}$, where N is the number of institutions (for-profit plus nonprofit) for the given industry and state, and P is the corresponding percent of private firms that are nonprofit. (See Pindyck and Rubinfeld, 1981: p. 292.) The same weights were used in the pooled regressions. As a consequence, those institutional types—namely, nursing homes and primary and secondary schools—with high average values of N and with average values of P closest to 50% were weighted more heavily, on average, in the pooled regressions.

⁴The usual R^2 statistic is misleadingly large here owing to the weighting of the observations and the logit transformation on the dependent variable. Consequently, two alternative R^2 statistics are also reported. The first, R_1^2 , is the square of the correlation coefficient for the actual and predicted *unweighted* dependent variable (in logit form). The second, R_2^2 , is the square of the correlation coefficient for the actual (unweighted) value of P and the value of P that would be predicted from the regression coefficients.

⁵Tax exemptions are generally established at the state level, even for local taxes. For the four industries and three taxes considered here, the pattern of exemptions appears not to vary among local jurisdictions within states.

⁶The variance for the statewide average property tax rates is .58; the average intrastate variance is .10. One-way analysis of variance permits rejection of the hypothesis that the statewide average rates are equal at the .01% level of confidence.

⁷The transformed coefficients in Table 2 properly apply only to marginal changes in the independent variables; their application to gross changes such as elimination of the exemption can only be suggestive.

⁸For the corporate income tax, as opposed to the property or sales tax, tax neutrality between nonprofit and for-profit firms can be accomplished only by extending exemption to for-profit firms as well as nonprofit firms, and not also by eliminating the exemption for nonprofit firms so that both types of firms are taxed (see Hansmann, 1985). The corporate tax variable employed here effectively reflects the consequences of exempting both types of firms.

⁹Steinwald and Neuhauser (1970) report a regression in which the dependent variable is the change between 1960 and 1967, for each of forty-eight states, in the percentage of hospitals that are proprietary, and the independent variables are (1) the percentage change in population in the state between 1960 and 1967, and (2) the percentage change in per capita income in the same period. They find that the first of the independent variables has a significantly positive coefficient, while the second has a significantly negative coefficient. They interpret the first of these results as supporting their theory that for-profit hospitals respond more rapidly to increases in demand than do nonprofit hospitals; they offer no clear interpretation for the second result. The results reported here support Steinwald and Neuhauser's findings concerning population growth, while they suggest that those authors' results for the change in real income variable may be spurious.

¹⁰For regressions involving nursing homes and hos-

pitals, variables were also constructed for each of these industries reflecting the sum of Medicare and Medicaid payments per capita in each state. (For nursing homes, the variable reflected payments per person aged sixty-five or over.) These variables were devised to capture the increase in demand for hospital and nursing home services that came with the advent of Medicare and Medicaid in 1965. The magnitude of these variables differs considerably among the states, in part because of differing demographic profiles and in part because of state discretion concerning the programs. The coefficients on these variables were not significantly different from zero, and the magnitude and significance of the other variables were not sensitive to their inclusion. For simplicity, these variables have been omitted in the regressions reported here.

¹¹The two variables reflecting the sum of Medicare and Medicaid payments per capita, described in note 10, were positively correlated with per capita income—mildly in the case of hospitals and strongly in the case of nursing homes. Nevertheless, the magnitude and significance of the coefficients on the per capita income variable were almost completely unaffected by inclusion of the Medicare/Medicaid variables, indicating that the former are not surrogates for the latter in the regressions reported here.

¹²See, in addition to the sources cited above, Gabler and Shannon, 1977; Netzer, 1973; Rose-Ackerman, 1982; Warren et al., 1971.

REFERENCES

- Cooper, Bruce, and Donald McLaughlin, "An Analysis of Private School Growth: The Latest Data and the Newest Survey Techniques" (paper prepared for the American Educational Research Association Meeting, March 22, 1982, New York City).
- Easley, David, and Maureen O'Hara, "The Economic Role of the Nonprofit Firm," *Bell Journal of Economics*, 1983, 14, pp. 531-38.
- Fama, Eugene, and Michael Jensen, "Agency Problems and Residual Claims," *Journal of Law and Economics*, June 1983, 26, pp. 327-49.
- Gabler, L., and J. Shannon, "The Exemption of Religious, Educational, and Charitable Institutions from Property Taxation," in Commission on Private Philanthropy and Public Needs, *Research Papers*, pp. 2335-72, U.S. Department of the Treasury, 1977.
- Hansmann, Henry, "The Role of Nonprofit Enterprise," *Yale Law Journal*, 89, April 1980, pp. 835-901.
- Hansmann, Henry, "The Rationale for Exempting Nonprofit Organizations from the Corporate Income Tax," *Yale Law Journal*, Nov. 1981, 91, pp. 54-100.
- Hansmann, Henry, "Economic Theories of Nonprofit Organization," in Walter Powell, ed., *Between Public and Private: The Nonprofit Sector*, Yale University Press, 1986 (forthcoming).
- Hansmann, Henry, "The Effect of Tax Exemption and Other Factors on Competition Between Nonprofit and For-Profit Enterprise," Working Paper 65, Program on Non-Profit Organizations, Institution for Social and Policy Studies, Yale University, 1985.
- Nelson, Richard, and Michael Krashinsky, "Two Ma-

- for Issues of Public Policy: Public Subsidy and Organization of Supply," in R. Nelson and D. Young, eds., *Public Policy for Day Care of Young Children*, D.C. Heath and Company, 1973.
- Netzer, Dick, "Property Tax Exemptions and Their Effects: A Dissenting View," National Tax Association, *Proceedings of the 65th Annual Conference on Taxation*, 1973, pp. 268-74.
- Pindyck, Robert, and Daniel Rubinfeld, *Econometric Models and Economic Forecasts*, 2d ed., McGraw-Hill, 1981.
- Quigley, John, and Roger Schmenner, "Property Tax Exemption and Public Policy," *Public Policy*, Summer 1975, 23, pp. 259-97.
- Rose-Ackerman, Susan, "Unfair Competition and Corporate Income Taxation," *Stanford Law Review*, May 1982, 34, pp. 1017-39.
- Schoenfeld, M., "Federal Taxation and Non-Profit Organizations," *Cleveland State Law Review*, May 1970, 19, pp. 292-302.
- Steinwald, Bruce, and Duncan Neuhauser, "The Role of the Proprietary Hospital," *Law and Contemporary Problems*, 1970, 35, pp. 817-38.
- Warren, Alvin, Thomas Krattenmaker, and Lester Snyder, "Property Tax Exemptions for Charitable, Educational, Religious, and Governmental Institutions in Connecticut," *Connecticut Law Review*, Fall 1971, 4, pp. 182-309.
- U.S. Department of the Treasury, *Tax Reform for Fairness, Simplicity, and Economic Growth: A Treasury Department Report to the President*, November 1984.
- U.S. Small Business Administration, Office of Advocacy, *Unfair Competition by Nonprofit Organizations with Small Business: An Issue for the 1980s*, 3d ed., June 1984.

Copyright of National Tax Journal is the property of National Tax Association. The copyright in an individual article may be maintained by the author in certain cases. Content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.