Cyril F. Chang[a] and Howard P. Tuckman[b]

Revenue diversification among non-profits

Abstract

Although the non-profit literature has grown substantially, the issue of how revenue diversification affects non-profits has not been fully explored. This paper presents several disciplinary perspectives regarding the financing of non-profits, what determines their ability to diversify, and the consequent effects on their behaviour. It first develops an index for measuring revenue diversification and applies it to a national sample of charitable non-profits. The results indicate that, while the perception that most non-profits rely on a single revenue source is exaggerated, the institutions in our sample have somewhat concentrated revenue. Our findings also suggest that the activity of a non-profit and the proportion of its expenditures that it devotes to fund-raising affect its ability to diversify its revenues concentration. While a number of anomalies exist, the weight of our evidence suggests that diversified revenue sources are more likely to be associated with a strong financial position than are concentrated revenue sources. Researchers interested in studying the life-cycle of non-profits, the factors that give rise to stability and growth, and the constraints on non-profit behaviour would do well to consider the diversification index presented in this paper.

Introduction

Until recently, researchers have paid scant attention to how diversified the revenue sources of non-profit organisations are. While a recent book by Gronbjerg (1993) provides a rich set of materials from which researchers can frame interesting behavioural hypotheses, many interesting issues remain to be studied. In part, this is because of the absence of good data, but it also reflects the difficulty in finding acceptable

measures of revenue diversification.

In this paper, we contrast several disciplinary perspectives regarding how funding sources affect non-profit behaviour. A resource measure is then developed to compress many revenue sources into a single diversification index. We use this index, and a taxonomy based on the activities that non-profits engage in, to measure revenue diversification among charitable non-profits. The paper is organised as follows. The second section contains a brief exploration of several disciplinary perspectives on the relationship between revenue sources and non-profit behaviour. A diversification index is then developed and quantitative estimates of the degree of diversification are presented. Several propositions are then explored regarding the relationship between revenue diversification and the attributes of non-profits. Finally, we explore the relationship between diversification and financial position. The paper ends with a discussion of how our results support several of the disciplinary theories regarding non-profit behaviour.

Disciplinary perspectives on non-profit revenue sources

Economists approach the role of non-profit revenues from a different perspective than non-economists. At least two branches of economics shed light on how revenues affect decision-making. The first focuses on non-profit organisations as firms maximising an objective function, subject to a legal constraint of non-distribution of surplus, and an economic constraint of a limited budget and resources. The second focuses on portfolio management and sees revenue diversification as a source of stability and a strategy to reduce risk for a financial entity.

In contrast, non-economists focus on the internal and external environments in which non-profits operate, and the strategies used to cope with the uncertainties resulting from symbiotic relationships between resource suppliers and users. A variant of this perspective explains and predicts non-profit behaviour by focusing on the social and regulatory pressures placed on non-profits. The following is a brief comparison and evaluation of the different perspectives.

The maximisation perspective

The maximisation perspective assumes that non-profit managers seek to *maximise* one or more objectives. The two best-known theories of this type are Weisbrod's 'public goods theory' (1974, 1977, 1988) and Hansmann's 'contract failure theory' (1980, 1987). The former focuses on the need to produce social goods collectively, while the latter is concerned primarily with assuring that profits do not accrue to the

managers of non-profit organisations. Many other economists have also made valuable contributions in this area. These include Niskanen (1971), who assumes that non-profits maximise total revenue or budget; Newhouse (1970), who argues that non-profits maximise managers' preferences; Pauly and Redisch (1973) and James and Neuberger (1981), who see certain organisations such as hospitals as maximising total quantity and/or quality of output; Lee (1971) who sees hospitals as maximising the use of certain inputs such as medical technology and hospital personnel; and Chang and Tuckman (1990) who see non-profits as maximising financial surplus and equity along with other objectives. Common to these arguments is the assumption that non-profit behaviour is affected by the objectives that non-profits pursue and the financial constraints that they face.

The financial perspective

Theories in finance also assume a linkage between finance and behaviour, albeit a less direct one. A number of scholars have suggested that it is advantageous for the future of non-profits to develop multiple revenues (Evans and Archer, 1968; Fuller and Farrell, 1987). Through diversification, non-profits increase the probability of remaining financially viable by reducing the instability of their funding. Heavy reliance on a single revenue source is seen as imprudent, as in the study of key financial ratios of non-profit organisations in higher education conducted by Chabotar (1989). Moreover, revenue stability is treated as a variable over which non-profit managers have some control. Greater stability is expected if non-profit managers develop multiple revenue sources which are not statistically correlated (Chang and Tuckman, 1991). Hence, conscious planning designed to diversify revenue sources can affect the behaviour of non-profit managers.

Resource dependence theories

Resource dependence theories (for example, Thompson, 1967; Galbraith, 1977; Bielefeld, 1992) focus on political and social relationships between non-profits and the entities that support them. These theorists argue that the way a non-profit delivers service is influenced by its external funders (Pfeffer and Salancik, 1978). This symbiotic view leads Gronbjerg to observe that 'the composition of funding structures provides the critical context within which non-profit decision making takes place' (1992, p.74). For Gronbjerg, organisations relying heavily on either government funding or prolonged relationships with a few steady private funding sources perform better than those relying on multiple and/or unsteady funding sources. However, it is important to note

that this finding only holds true where such funding provides continuity and where the limited sources are not unstable and highly correlated.

The institutional perspective

More recent, and less refined as a theoretical perspective of the non-profit funding environment, is the institutional view proposed by Meyer and Rowan (1977), Scott (1987), and Bielefeld (1992). This set of studies focuses on non-profit concerns for social acceptance and legitimacy. Their main contributions are the behavioural predictions that non-profits with multiple funding sources tend to model themselves after other successful organisations; and that revenue heterogeneity increases a non-profit's likelihood of addressing community problems to gain legitimacy and recognition (Bielefeld, 1992).

Given the differences in both perspectives and methodology, several interesting empirical questions arise that warrant further study. First, to what extent are the revenues of non-profit organisations diversified? Second, are there identifiable factors that account for differences in revenue diversification among non-profits? We explore these questions below.

The diversification index and empirical data source

This section presents three aspects of the methodology used in this study: the index used to measure revenue diversification; the data base used to empirically estimate diversification; and the taxonomy used to classify non-profits by type of activity.

The revenue diversification index

The Diversification Index (DI) is based on the Herfindahl-Hirschman Index used for industrial organisation applications. It captures two dimensions of concentration, the number of sources and the extent to which dollars of revenue are dispersed across sources (Scherer, 1980, p.58). The index is computed by the formula:

$$DI = (r_1/R)^2 + (r_2/R)^2 + \ldots + (r_n/R)^2$$

$$= \sum_{i=1}^{N} (r_i/R)^2, \quad i=1, \ldots, n,$$

where N = the number of revenue sources, r_i = revenue from the ith source, and R = the total revenues from all sources.

This index has several properties as a measure of revenue concentration. If total revenue comes from one source (N=1 and r_1=R), then DI = 1. As N increases, DI declines. The value of DI also falls as the shares of the several revenue sources become more equal. When revenue is distributed *equally* among the revenue sources, for example, DI has a minimum value of 1/N. Conversely, DI rises when N declines and/or when one revenue source's share of total revenue rises relative to that of others. In addition, DI is unrelated to the size of an organisation. Large or small non-profits can have the same value if they have the same number of revenue sources and their revenues are equally diversified. Further information on the properties of this index, as well as on other indices that might be used in this context, can be found in Hirschman (1964) and Scherer (1980).

In this study, the index is constructed from nine revenue categories reported on Form 990, the tax form that US non-profits file with the Internal Revenue Service (IRS). The revenue categories used are:

- direct public support (primarily donations),
- indirect public support (contributions from, for example, United Way and other community organisations),
- government grants (provided by federal, state, local, and county or special district governments),
- programme service revenue (earned from the sale of services),
- membership dues (fees for service charged to members),
- interest, dividends, and net rental income,
- sale of assets (realised capital gains and losses),
- special fund-raising and net sales of goods (from cake sales, dances, etc.), and
- revenue from all other sources.

The data base

Information is drawn from a national sample of tax returns filed with the IRS by 501(c)(3) charitable non-profits in the 1986 tax year. The Statistics of Income (SOI) data base is constructed by the IRS and consists of: (a) a stratified *random sample* drawn from the universe of the Internal Revenue Code Section 501(c)(3) non-profit organisations filing a Form 990 in the 1986 tax year, and (b) *all* filing 501(c)(3) non-profits with assets above $10 million. The IRS's inclusion of item (b) creates a representativeness problem which we overcome by using population weights to compensate for overrepresentation of large organisations in the data base. The resulting weighted data file used in this study contains 113,525 observations.

Types of non-profits according to activities

To capture aggregate differences in DI among non-profits engaged in different activities, a taxonomy must be employed. While the federal tax return Form 990 identifies nine different types of non-profits, these categories are too broad and legalistically oriented to allow meaningful determination of a filing organisation's activities. Fortunately, the National Center For Charitable Statistics has created a National Taxonomy of Tax Exempt Entities (NTEE) which, although imperfect, can be used to classify non-profits according to activities they perform. The NTEE used in this study to group the non-profits in the data base employs the following categories:

A. Arts, Culture and Humanities
B. Educational Institutions and Related Activities
C. Environmental Quality, Protection and Beautification
D. Animal Related
E. Health: General and Rehabilitation
F. Health: Mental Health and Crisis Intervention
G Health: Diseases and Disorders Support and Service Organisations
H. Health: Diseases and Disorders Research
I. Public Protection: Crime Prevention, Legal Administration/Services
J. Employment/Jobs
K. Food, Nutrition, Agriculture
L. Housing/Shelter
M. Public Safety, Disaster Preparedness/Relief
N. Recreation, Leisure, Sports, Athletics
O. Youth Development
P. Multipurpose Human Service
Q. International/Foreign Affairs and National Security
R. Civil Rights, Social Action, Advocacy
S. Community Improvement/Capacity Building
T. Philanthropy and Volunteerism
U. Science and Technology Research Institutes/Service
V. Social Science
W. Public/Society Benefit
X. Religion Related/Spiritual Development
Y. Mutual/Membership Benefit Organisations
Z. Other

Table 1. Mean values of the revenue concentration index. Standard deviations, minimum and maximum values, and coefficients of variation by activity category

Activity type	Number of nonprofits	Mean	Std.	Min.	Max.	Coeff. of variation
Arts, culture, humanities	10,834	0.50	0.22	0.17	1.000	0.44
Educational institutions & related	15,073	0.67	0.22	0.20	1.000	0.33
Environmental quality	1,544	0.52	0.20	0.24	1.000	0.38
Animal-related	1,293	0.52	0.20	0.21	1.000	0.38
Health — general & rehab.	14,151	0.71	0.22	0.20	1.000	0.31
Mental health\crisis intervention	3,062	0.63	0.22	0.26	1.000	0.35
Disease & disorder-related	1,650	0.60	0.19	0.18	0.999	0.32
Consumer protection, legal aid	571	0.81	0.19	0.26	1.000	0.23
Crime & delinquency prevention	790	0.67	0.18	0.34	0.994	0.27
Employment/jobs	1,719	0.68	0.21	0.23	0.985	0.31
Food, nutrition	982	0.62	0.22	0.26	1.000	0.31
Housing, shelter	3,603	0.74	0.23	0.25	1.000	0.33
Public safety	662	0.58	0.19	0.30	0.967	0.36
Recreation, leisure, sports	4,697	0.64	0.23	0.24	1.000	0.41
Youth development	4,649	0.54	0.22	0.17	1.000	0.35
Human service	15,806	0.65	0.23	0.15	1.000	0.32
International, foreign affairs and national security	1,192	0.65	0.21	0.21	1.000	0.32
Civil rights, social action, advocacy	502	0.66	0.21	0.30	0.985	0.35
Community improvement, capacity building	9,335	0.71	0.25	0.19	1.000	0.27
Philanthropy, volunteerism & grant-making foundations	2,469	0.79	0.21	0.30	1.000	0.26
Science, technology,	1,317	0.65	0.21	0.22	1.000	0.32
Social science research	1,937	0.74	0.21	0.22	1.000	0.31
Public & society benefit	5,070	0.73	0.23	0.24	1.000	0.31
Religion-related, spiritual development	2,789	0.74	0.23	0.21	1.000	0.31
Mutual membership, benefit	174	0.79	0.22	0.32	0.977	0.28
All other	7,628	0.70	0.23	0.25	1.000	0.33
Data base:	113,525	0.66	0.24	0.15	1.000	0.36

Note
    Weighted data from 1986 Survey of Income produced by the Internal Revenue Service.

How diversified are non-profit revenues?

The range of DI values

Mean values of DI are presented in Table 1 for each activity category. The mean value for the data base as a whole is 0.66, while the midpoint between the highest and lowest possible DI values of 1.0 and 0.11 is 0.56.

The average non-profit had somewhat concentrated revenue sources and, in 21 of the 26 activity categories, some non-profits had totally concentrated revenues (DI=1). These accounted for 5.6 per cent of the total organisations in the base. The mean DI values range across the categories from 0.50 in the 'Arts, Culture, and Humanities' category to 0.81 in the 'Consumer Protection and Legal Aid' category. The minimum 0.15 is found in the 'Human Service' category.

Intra-category and inter-category differences in diversification exist. One way to measure intra-category variation involves calculation of coefficients of variation (CVs). Defined as the standard deviation (std.) of DI divided by its mean value, CV (provided in the last column of Table 1) is a measure of the variation of DI around its mean. Mean CV for the entire data base is 0.36, implying relatively low variation within the data base. This is supported by examination of the 26 CVs which indicates a range from 0.23 for 'Consumer Protection & Legal Aid' to 0.44 for the 'Arts, Culture and Humanities.' The observed inter-category and intra-category variations seem to be related. Categories in Table 1 with low average DI values tend to have high average CVs (signifying large intra-category variation).

Factors affecting revenue diversification

This section offers four propositions regarding the factors associated with revenue diversification. The first two activity-related propositions relate DI to how 'commercial' or 'donative' a non-profit is, and to the type of activity it pursues. The second two propositions relate DI to organisation-level variables such as fund-raising activities and financial strength.

Proposition 1: the type of activity that a non-profit engages in affects how diversified its revenue sources are

A non-profit's activities are likely to affect the number of revenue sources available to it for at least three reasons. First, some activities lend themselves more easily to finance from multiple sources. A cancer

clinic provides a service that is easier to fund from multiple sources, such as patients, donations, government and community organisations, than the services of an environmental group, which is likely to rely primarily on membership dues and an occasional grant from government. Second, donors, governments and consumers prefer to fund some activities over others. For example, Hodgkinson and Weitzman (1990) report that individuals have personal preferences that relate to the activities in which non-profits engage. These preferences affect donors' decisions to contribute to a non-profit. Third, the administrators of some non-profits have access to a broader range of funding sources than those of others. This may be a result of who is on the Board of Directors, the motivations or training of the administrators, and/or of the access that non-profits have to community leaders, including those who distribute funds (Middleton, 1987; Young, 1986).

To test the proposition that activity type affects DI, we estimate a regression equation with DI as dependent variable and the twenty-five activity categories shown above as dummy independent variables. The 'Mutual/Membership Benefit Organisations' category is chosen as control and hence omitted from the equation. The finding of a significant relationship between an activity dummy variable and the dependent variable signifies existence of difference in the CI value between that activity and the control category. The regression results of this exercise appear in Table 2.

Ordinary least squares regression produces a R^2 of 0.14 and a statistically significant F-value of 200.17 at the 0.0001 level, indicating that the regression is statistically different from zero (that is, activities do matter as a group). Further, each of the categorical dummy variables is statistically significant at the 0.0001 level, lending statistical support to the proposition that activity affects the diversification of a non-profit's revenue sources.

Proposition 2: Commercial non-profits are more likely to have higher revenue concentration than donative non-profits

Scholars such as Hansmann (1987) and Weisbrod (1988) define non-profits that receive a majority of revenue from programme-service sales as 'commercial' and those with revenue mainly from donor support as 'donative'. The two types of non-profits differ in many important respects such as mission, type of output, clienteles, funding sources and external constraints. It is reasonable to assume that they also differ in revenue diversification. To our knowledge, this proposition has not been tested.

The data base described above is divided into three groups:
• The donative group — non-profits which, irrespective of activity

Table 2. Regression estimation of DI using activity dummy variables

Independent variable	Coefficient	Standard error
Constant	0.8628	0.0215
Arts, culture, humanities	-0.4414	0.0218
Educational institutions & related	-0.3132	0.0217
Environmental quality	-0.3478	0.0234
Animal-related	-0.3751	0.0228
Health — general & rehab.	-0.2616	0.0219
Mental health\crisis intervention	-0.3948	0.0231
Disease & disorder-related	-0.3236	0.0226
Consumer protection, legal aid	-0.2934	0.0328
Crime & delinquency prevention	-0.2801	0.0247
Employment/jobs	-0.3003	0.0245
Food, nutrition	-0.4107	0.0238
Housing, shelter	-0.3378	0.0237
Public safety	-0.2946	0.0247
Recreation, leisure, sports	-0.3148	0.0223
Youth development	-0.4331	0.0219
Human service	-0.3158	0.0218
International, foreign affairs and national security	-0.1941	0.0234
Civil rights, social action, advocacy	-0.1748	0.0247
Community improvement, capacity building	-0.2014	0.0218
Philanthropy, volunteerism & grant-making foundations	-0.2204	0.0241
Science, technology,	-0.3764	0.0270
Social science research	-0.2685	0.0236
Public & society benefit	-0.2317	0.0221
Religion-related, spiritual development	-0.2115	0.0226
All other	-0.3200	0.0221

$R^2 = 0.1424$, F = 200.165, Prob > F = 0.0001

engaged in, earn 60 per cent or more of their revenue from public and private contributions, gifts and grants.

• Programme service group — non-profits which, irrespective of activity engaged in, earn 60 per cent of more of their revenues from commercial sources.

• All other non-profits.

Once again, an OLS regression is estimated with DI as dependent and dummy variables (labelled DONATIVE and PROGRAM, respectively) for the first two groups as independent variables. Positive coefficients are expected for the two dummy variables (that is, both

donative and commercial non-profits have higher DI than the third or mixed group) because non-profits with 60 per cent or more revenue from a single source tend to have concentrated revenues. Further, we expect the coefficients of the two dummy variables to be different. The regression results are presented below with standard errors of the coefficients included in parentheses.

$$DI = 0.5599 + 0.1527 \ DONATIVE + 0.2307 \ PROGRAM$$
$$(0.0009) \quad (0.0016) \quad \quad (0.0015)$$
$$R^2 = 0.1841, \ F = 12{,}811, \ Prob > F = 0.0001$$

The estimated regression is statistically significant, signifying that the coefficients differ statistically from zero and the two regression coefficients are both positive and statistically significant at the 0.0001 level. In addition, the PROGRAM coefficient is statistically greater than the DONATIVE coefficient. These results support the proposition that commercial and donative non-profits have more concentrated revenue sources than non-profits that do not rely on either programme service or donation revenues. They also suggest that the two types of non-profits differ in the extent to which they have diversified revenues, and that commercial non-profits have a higher DI (signifying more concentrated revenue sources) than donative non-profits.

Proposition 3: Non-profits with high fund-raising expenditures have less revenue concentration than those with lower fund-raising expenditures

Our expectation is that revenue diversification is accomplished by incurring costs developing new revenue sources. To test this proposition, a Pearson correlation is computed between each non-profit's DI and the ratio of fund-raising expenditures to total expenditures. The results appear in Table 3.

The correlation for the data base as a whole is negative and statistically significant at the 0.0001 level. Since DI falls as revenue sources rise, the negative relation indicates that, for the data base as a whole, increases in diversification are associated with increases in fund-raising expenditure. The differences among activity categories are striking. The correlation is negative in eighteen categories, fourteen of which are statistically significant. A positive correlation exists in eight categories, of which two are statistically significant. Large negative values are found in the 'Civil Rights' (-0.43), 'Housing and Shelter' (-0.40), 'Public & Society Benefit' (-0.41) and the 'Mutual Benefits' category (-1.0). In contrast, a strong positive relationship exists in the 'Science and Technology' (0.78) and 'Crime and Delinquency' (0.35) categories. These results support the propositions that the activity of a non-profit and the proportion of its expenditures that it devotes to

Table 3. Pearson correlations of the fund-raising expenditure proportion and the revenue concentration index

Activity	Pearson correlation	Probability level
Arts, culture, humanities	0.018	0.2524
Educational institutions & related	0.113	0.0001
Environmental quality	0.021	0.6553
Animal-related	-0.170	0.0001
Health — general & rehab.	-0.150	0.0001
Mental health\crisis intervention	-0.042	0.3327
Disease & disorder-related	-0.136	0.0001
Consumer protection, legal aid	0.179	0.1679
Crime & delinquency prevention	0.352	0.0001
Employment/jobs	-0.339	0.0001
Food, nutrition	-0.100	0.0547
Housing, shelter	-0.403	0.0001
Public safety	0.002	0.9801
Recreation, leisure, sports	-0.188	0.0001
Youth development	-0.044	0.0431
Human service	0.184	0.0001
International, foreign affairs and national security	-0.392	0.0001
Civil rights, social action, advocacy	-0.433	0.0001
Community improvement, capacity building	-0.225	0.0001
Philanthropy, volunteerism & grant-making foundations	-0.114	0.0427
Science, technology,	0.783	0.0001
Social science research	-0.337	0.0001
Public & society benefit	-0.409	0.0001
Religion-related, spiritual development	-0.251	0.0001
Mutual membership, benefit	-1.000	0.0001
All other	-0.038	0.1345
Data base	-0.034	0.0001

Note
   Fund-raising proportion is computed as expenditures on fund-raising divided by total expenditures.

fund-raising both affect its ability to diversify its revenues concentration.

Proposition 4: Multiple revenue sources are positively related to financial position

Given the differences in the theories discussed above, it is useful to test the proposition that non-profits with multiple revenue sources have stronger finances than those with more limited sources. While Gronbjerg (1992) has explored a variant of this proposition in the

context of human service agencies, her work has not been extended to the larger universe of non-profits and to the activities discussed in this paper. Three proxy variables are used to measure the financial strength of non-profits: assets at the beginning of the year, operating margin, and dollar value of the change in total equity in a year.

Revenue concentration and asset size. The first test involves non-profit gross assets as both a measure of financial strength and as a proxy for organisation size. The purpose is to determine whether non-profits with multiple revenue sources have more assets. Pearson correlation coefficients are computed and tested for statistical significance for each activity category and the data base as a whole. If the number of revenue sources

Table 4. Pearson correlations between beginning-year gross assets and the revenue concentration index

Activity	Pearson correlation	Probability level
Arts, culture, humanities	-0.008	0.4221
Educational institutions & related	-0.084	0.0001
Environmental quality	-0.002	0.9403
Animal-related	-0.056	0.0497
Health — general & rehab.	0.106	0.0001
Mental health\crisis intervention	-0.033	0.0720
Disease & disorder-related	-0.029	0.2350
Consumer protection, legal aid	-0.227	0.0001
Crime & delinquency prevention	-0.021	0.5636
Employment/jobs	-0.108	0.0001
Food, nutrition	-0.083	0.0112
Housing, shelter	0.049	0.0042
Public safety	0.006	0.8798
Recreation, leisure, sports	0.009	0.5630
Youth development	-0.113	0.0001
Human service	-0.040	0.0001
International, foreign affairs and national security	0.030	0.3120
Civil rights, social action, advocacy	-0.257	0.0001
Community improvement, capacity building	-0.010	0.3647
Philanthropy, volunteerism & grant-making foundations	-0.003	0.9036
Science, technology,	0.025	0.3743
Social science research	-0.121	0.0001
Public & society benefit	-0.040	0.0054
Religion-related, spiritual development	-0.016	0.4168
Mutual membership, benefit	-0.206	0.0244
All other	-0.007	0.5265
Data base	-0.004	0.2293

Table 5. Pearson correlations of operating margin and revenue concentration index

Activity	Pearson correlation	Probability level
Arts, culture, humanities	0.120	0.0001
Educational institutions & related	-0.103	0.0001
Environmental quality	-0.039	0.1219
Animal-related	-0.263	0.0001
Health — general & rehab.	-0.084	0.0001
Mental health\crisis intervention	-0.054	0.0027
Disease & disorder-related	0.128	0.0001
Consumer protection, legal aid	-0.328	0.0001
Crime & delinquency prevention	-0.163	0.0001
Employment/jobs	-0.106	0.0001
Food, nutrition	-0.203	0.0001
Housing, shelter	0.194	0.0001
Public safety	-0.261	0.0001
Recreation, leisure, sports	0.063	0.0001
Youth development	0.011	0.4462
Human service	-0.087	0.0001
International, foreign affairs and national security	-0.160	0.0001
Civil rights, social action, advocacy	-0.128	0.0040
Community improvement, capacity building	-0.155	0.0001
Philanthropy, volunteerism & grant-making foundations	-0.000	0.9984
Science, technology,	-0.202	0.0001
Social science research	-0.149	0.0001
Public & society benefit	0.000	0.9612
Religion-related, spiritual development	0.082	0.0001
Mutual membership, benefit	-0.454	0.0001
All other	0.206	0.0001
Data base	-0.008	0.0001

and financial strength are positively related, we expect DI and total assets to be negatively correlated and the correlation coefficient to be statistically significant.

For the data base as a whole and twelve of the 26 activity categories, a statistically significant relationship *does not* exist between revenue concentration and beginning-year assets. However, in twelve activity categories in Table 4, the sign is negative and statistically significant, providing some confirmation for the test. In two categories (Housing and Health), however, the correlation is statistically significant but positive.

Revenue concentration and surplus accumulation. Accumulation of surpluses (excess of revenues over expenditures) is vital for the survival and growth of non-profits (Chang and Tuckman, 1990). If multiple revenue sources strengthen a non-profit's financial position, we expect multiple-revenue non-profits to produce greater surpluses than concentrated-revenue non-profits. Pearson correlations between DI and the operating margins of non-profits are computed for this test with operating margin defined as total revenue minus total expenditures divided by total revenue. Operating margin is a measure commonly used by financial analysts to gauge organisational performance, and the predicted sign is negative.

A negative correlation exists between DI and operating margin for the data base as a whole and eighteen of 26 categories (sixteen statistically significant). This supports the proposition that non-profits with more revenue sources are more profitable than non-profits with fewer revenue sources. In eight categories (two not statistically significant), DI and margin are *positively* correlated. Relatively large correlation coefficients are found for the 'Mutual Membership' (-0.45), 'Consumer Protection' (-0.33), 'Animal Related' (-0.26) and 'Public Safety' (-0.26) categories.

Revenue concentration and change in equity. A third test of the relationship between revenue concentration and financial strength measures the correlation between DI and the change in equity. The results of this analysis, not shown, indicate that for the data base as a whole and for fourteen activity categories, a statistically significant relationship *does not* exist between CI and the change in equity. Of the remaining twelve categories with significant correlations, ten had a negative relation as hypothesised and two had a positive relation.

Summary and conclusion

The results presented above suggest that, while the revenues of individual non-profits are somewhat concentrated, the perception that most non-profits are funded primarily by donations is inaccurate. The finding that 94 per cent of the non-profits in this study are funded by more than one revenue source confirms the work of Salamon (1987). While many non-profits may start out with one or few revenue sources, the desire to survive and grow will ultimately cause these organisations to reach out to a broader donor base.

This finding is consistent with the several disciplinary perspectives discussed in this paper. The economist would see the move toward diversification as an attempt to lift the budget constraint on an organisation, enabling it to meet its objectives more effectively. Similarly,

the financial perspective would see the move toward diversification as an attempt to increase organisational stability by reducing financial risk. In contrast, the move to diversify might be viewed in a social and psychological perspective as a way to reduce donor control and to realise other objectives of the organisation.

The extent to which diversification exists among non-profits should not be overstated, however. Considerable variation exists in the number of sources both across and within groups of non-profits that pursue different activities. It is not surprising to find that great diversity exists within the non-profit sector since this is one of the great strengths of a system founded on the concept of pluralism.

The activities that a non-profit engages in play an important role in explaining differences in revenue concentration in every test that we performed. Not only is activity statistically significant in the regression equations, but differences among activity categories show up in all of the analyses where correlation coefficients are used. Clearly, generalisations about the factors that affect revenue concentration are unlikely to be valid in the aggregate and results taken from a single sector or group of activities cannot be generalised to the entire population of 501(c)(3) organisations. Future researchers would do well to focus on the specific activities in which non-profits engage.

Perhaps the most interesting findings relate to the test of the proposition that multiple revenue sources and financial strength are related. This proposition, which emerges directly from the financial theory, is premised on the assumption that diversification can be used to protect a non-profit from the risk that occurs when revenues come from a potentially unstable source. While a number of anomalies arise in our findings, the weight of the evidence suggests that non-profits with multiple revenue sources are more likely to have a strong financial position than are those concentrated revenue sources. Much more complex models can be developed for testing this proposition than those developed here. Meanwhile, researchers interested in studying the life-cycle of non-profits, the factors that give rise to stability and growth, and the constraints on non-profit behaviour would do well to consider the diversification index presented in this paper.

Notes

[a] Professor of Economics, The Fogelman College of Business and Economics, University of Memphis. Please address all correspondence to him at: Department of Economics, The Fogelman College of Business and Economics, University of Memphis, Memphis, Tennessee 38152, USA.

References

Bielefeld, W. (1992) Non-profit funding environment relations, *Voluntas*, 3, 1, 48-70.

Chabotar, K.J. (1989) Financial ratio analysis comes to nonprofits, *Journal of Higher Education*, 60, 2, 188-208.

Chang, C.F. and H.P. Tuckman (1990) Why do nonprofit managers accumulate surpluses, and how much do they accumulate?, *Nonprofit Management and Leadership*, 1, 2, 117-35.

Chang, C.F. and H.P. Tuckman (1991) Financial vulnerability and attrition as measures of nonprofit performance, *Annals of Public and Cooperative Economics*, 62, 4, 654-72.

Evans, L.J. and S.H. Archer (1968) Diversification and the reduction of dispersion: an empirical analysis, *Journal of Finance*, 761-7.

Fuller, R.J. and J.L. Farrell, Jr (1987) *Modern Investments and Security Analysis*, McGraw Hill, New York.

Galbraith, J. (1977) *Organizational Design*, Addison-Wesley, Reading, Massachusetts.

Gronbjerg, K.A. (1992) Nonprofit human service organizations funding strategies and patters of adaptation, in Y. Hasenfeld (ed.) *Human Services as Complex Organizations*, Sage, Newbury Park, California.

Gronbjerg, K.A. (1993) *Understanding Nonprofit Funding: Managing Revenues in Social Service and Community Development Organizations*, Jossey-Bass, San Francisco, California.

Hansmann, H.B. (1980) The role of nonprofit enterprise, *Yale Law Journal*, 89, 835-901.

Hansmann, H.B. (1987) Economic theories of nonprofit organization, in W.W. Powell (ed.) *The Nonprofit Sector*, Yale University Press, New Haven, Connecticut and London.

Hirschman, A.O. (1964) The paternity of an index, *American Economic Review*, 54, 761-2.

Hodgkinson, V.A. and Weitzman, M.S. (1990) *Giving and Volunteering in the United States. 1990 Edition*, The Independent Sector, Washington, D.C.

James, E. and Neuberger, E. (1981) The university department as a non-profit labor cooperative, *Public Choice*, 36, 585-612.

Lee, M.L. (1971) A conspicuous production theory of hospital behavior, *Southern Economic Journal*, 38, 48-59.

Middleton, M. (1987) Nonprofit boards of directors: beyond the governance

function, in W.W. Powell (ed.) *The Nonprofit Sector*, Yale University Press, New Haven, Connecticut.

Meyer, J.W. and Rowan, B. (1977) Institutionalized organizations: formal structure as myth and ceremony, *American Journal of Sociology*, 83, 440-63.

Newhouse, J. (1970) Toward a theory of non-profit institutions: an economic model of a hospital, *American Economic Review*, 60, 64-74.

Niskanen, W. (1971) *Bureaucracy and Representative Government*, Aldine, Chicago, Illinois.

Pauly, M.P. and Redisch, M.R. (1973) The not-for-profit hospital as a physicians' cooperative, *American Economic Review*, 63, 87-99.

Pfeffer, J. and Salancik, G. (1978) *The External Control of Organizations*, Harper and Row, New York.

Salamon, L.M. (1987) Partners in public service: the scope and theory of government-nonprofit relations, in W.W. Powell (ed.) *The Nonprofit Sector*, Yale University Press, New Haven, Connecticut.

Scherer, F.M. (1980) *Industrial Market Structure and Economic Performance*, Rand McNally, Chicago, Illinois.

Scott, W.R. (1987) *Organizations: Rational, Natural, and Open Systems*, 2nd edition, Prentice-Hall, Englewood Cliffs, New Jersey.

Thompson, J. (1967) *Organizations in Action*, McGraw Hill, New York.

Weisbrod, B.A. (1974) Toward a theory of the voluntary non-profit sector in a three-sector economy, in E.S. Phelps (ed.) *Altruism, Morality, and Economic Theory*, Russell Sage, New York.

Weisbrod, B.A. (1977) *The Voluntary Nonprofit Sector*, D.C. Heath, Lexington, Massachusetts.

Weisbrod, B.A. (1988) *The Nonprofit Economy*, Harvard University Press, Cambridge, Massachusetts.

Young, D.R. (1986) Entrepreneurship and the behavior of nonprofit organizations: elements of a theory, in S. Rose-Ackerman (ed.) *The Economics of Nonprofit Institutions*, Oxford University Press, New York.