Nonprofit Fund-Raising in Competitive Donor Markets

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Fund-raising expenditures represent an important strategic decision for nonprofit managers in the face of scarce donor resources. Privately, nonprofit managers weigh the trade-off between reaching new donors and increasing the implicit price of output to its constituents. Socially, competition among nonprofit firms for donations may produce an excessive level of fund-raising. This article empirically examines nonprofit fund-raising decisions, privately and socially, under varying market conditions. Analysis of financial data reveals that as markets become more competitive, nonprofits follow their private incentives by reducing their fund-raising expenditures. However, the author finds evidence that, collectively, nonprofits may spend an inefficiently high share of their revenues on fund-raising. As such, the author offers alternatives to the common practice of collective fund-raising through institutions such as the United Way. Implications of the study include increasing price transparency to improve market discipline or raising legal and financial barriers to entry.

Keywords: *nonprofit; fund-raising; market structure; efficiency*

For the period ranging from 1982 to 1997, the number of 501(c)(3) nonprofits increased 128% whereas private contributions increased only 72% in real terms.[1] For the majority of nonprofit organizations that rely on private contributions, fund-raising remains the primary mechanism of interagency competition for scarce donor resources. Fund-raisers mix personal visits to donors, grant writing, telethons, Web sites, and direct mail to maximize donation revenues at the lowest cost. It is, however, difficult for nonprofit managers to determine how much of their own resources to allocate toward fund-raising activities.

Fund-raising has positive effects for donors and nonprofits. For nonprofits, fund-raising messages create awareness and attract charitable gifts to specific

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programs. For donors, fund-raising messages provide valuable information about specific characteristics of the nonprofit, reducing the cost of finding their preferred charity. In theory, the optimization problem for the nonprofit manager is straightforward. Any nonprofit should keep fund-raising until the last dollar spent returns only one dollar in new donations.[2]

However, it is a distinct question whether nonprofit managers, collectively, fund-raise too much. Generally, altruistic managers are concerned with the overall provision of charitable services, not just the success of their own organization. It is important to recognize that fund-raising activities could either increase or reduce overall charitable output. Any donor that has received multiple solicitations from similar types of charities can sympathize with the dilemma. As the sophistication of fund-raising technologies evolves, the probability of any single donor receiving overlapping solicitations by nearly identical organizations will increase.

From the perspective of the nonprofit, multiple solicitations from competing nonprofits represent a lost opportunity. Instead of reaching new constituents, donors may simply switch between charities without any increase in overall funding. For the donor, multiple solicitations from similar organizations represent wasted resources. Fund-raising is costly, siphoning resources that could have been spent on charitable output. This remains a perplexing problem for a nonprofit manager if the private fund-raising decisions lead to a glut of solicitation messages in the market. As a consequence, nonprofit managers often coordinate their fund-raising activities to reduce aggregate fund-raising. This is the broad intention of supporting organizations such as the United Way, whose purpose is to coordinate and suppress wasteful fund-raising. It is less clear whether such actions are warranted or beneficial. This article approaches the issue systematically by examining the private and social impact of market competition on the fund-raising decisions of nonprofit firms. Using an economic model of for-profit advertising, the article defines a framework for determining if nonprofits are fund-raising excessively.

Historically, academic economic research has portrayed nonprofit firms as passive recipients of donations from altruistic donors. Foundational papers such as Bergstrom, Blume, and Varian (1986) characterized nonprofit institutions as docile mechanisms for the provision of public goods. In this class of models, donors have some preference for a public good that can be satisfied by either private or public provision. Nonprofit organizations are merely a passive mechanism by which those preferences are realized.[3]

This view contrasts with the popular management literature marketed to nonprofit directors. Titles such as *Play to Win: A Nonprofit Guide to Strategy* or *Mission Based Marketing: How Your Nonprofit can Succeed in a More Competitive World* portray an ominous environment where firms must compete to survive. More consistent with this perception are articles that examine strategic decisions made by nonprofits in the face of scarce donor resources. These articles find that nonprofit firms compete on a variety of margins including efficiency, quality, or fund-raising. Yet modeling these decisions has remained an

underdeveloped area of economic literature. A primary constraint to empirical analysis remains the obscure nature of the nonprofit firm objective when operating under a nondistribution constraint. Various articles have approached this issue differently. In this section, I offer a brief summary of the theoretical and empirical literature examining competition among nonprofit firms.

REVIEW OF NONPROFIT COMPETITION

Relative to their for-profit counterparts, the particular incentives guiding nonprofit managers are not well understood by economists. The nondistribution constraint implied by nonprofit status precludes many of the basic incentives and governance mechanisms relied on to understand and predict firm behavior. Typically, faith has been placed in the altruistic preferences of nonprofit managers to operate in the best interest of its constituents. The following set of articles indicates that assumption may not be well founded. There is little reason to think that nonprofit organizations pursue socially optimal goals any more vigorously than public or for-profit institutions.

Glaeser (2003) demonstrated that nonprofit organizations, typically wealthy ones, will likely conform to objectives of elite workers, rather than donors or other constituents. In his introduction, Glaeser suggested that market competition remains the primary constraint on nonprofit manager behavior to align firm objectives with those of its constituents. However, the empirical evidence demonstrating that donors actually have a significant influence on the decisions of the nonprofit firm has been mixed.

Donors are able to observe a variety of efficiency ratios publicized by watchdog groups and the nonprofits themselves. Nonprofit organizations often report their "fund-raising-expense ratio" that represents the fraction of total expenses allocated to fund-raising. A common assumption is that donors have preferences for charitable output. Consequently, they perceive management or fund-raising expenditures as an implicit "price" of production.[4] Weisbrod and Dominguez (1986) originally tested the notion that donations depend on the fund-raising expenditures and the subsequent price of charitable output. Using a pooled sample of Form 990 data, they found that higher solicitation expenditures indeed boost donation revenue to nonprofits. As a secondary effect, their tests also determine that donors dislike higher fund-raising costs and reduce their contributions when nonprofit organizations are less efficient.

In a follow-up article, Okten and Weisbrod (2000) confirmed that donors are, indeed, sensitive to expense ratios, implying a downward sloping demand curve for nonprofit services. That article refines earlier work by using panel data from seven industries covering more than a decade of observations. Their results are similar to the previous article, in that the direct effect of fund-raising is to increase charitable gifts. However, the indirect effect of a

higher price results in lower donation revenue. Additional findings from the article indicate that nonprofits are often not fund-raising at an efficient level. Some industries, such as libraries and hospitals, do not fund-raise enough to maximize net revenues, whereas religious organizations appear to fund-raise too much.

Drawing solely from Pennsylvania data, Greenlee and Brown (1999) examine fund-raising and administrative expenditures. Consistent with prior results, Greenlee and Brown found a significant and inverse relationship between administration expense ratios and total contributions. The implication of the study is that donors dislike fund-raising and administrative expense ratios. In contrast, Frumkin and Kim (2001) found no statistically significant relationship between administrative expense ratios and public donations. The article draws the conclusion that operational efficiency is not rewarded by donors. The authors promoted the idea that nonprofit organizations should not focus on reducing nonprogram expenses, rather firms should optimize their fund-raising. Given this conflicting evidence, it would seem difficult for a nonprofit manager to know what to do.

A more careful review of the literature reveals that the studies cannot be compared directly. Frumkin and Kim (2001) used a national representative panel whereas Greenlee and Brown (1999) drew from a much smaller, stately, specific sample. The structure of the empirical model also plays a crucial role. Tinkelman and Mankaney (2005) examined under what conditions an inverse relationship between price and donation revenue appears. They found that the empirical specification used, particularly if program spending is included as a control variable, significantly alters the slope coefficient on price. On average, relatively large and more established organizations that rely most heavily on donations appear to face the most significant price elasticity.

Even if donors can limit fund-raising by reducing gifts in the face of high expense ratios, this does not guarantee that nonprofits will provide the socially optimal amount of fund-raising. Rose-Ackerman (1982) was first to articulate the dilemma faced by nonprofit managers. Managers know that increased fund-raising encourages new donations. However, donors may also perceive fund-raising expenditures as a cost, diverting resources from charitable output. The article develops a set of theoretical models that demonstrate that, by responding to private incentives, nonprofit organizations pursue fund-raising at levels that may reduce aggregate service provision. The models demonstrate that competition for donations may force fund-raising to inefficiently high levels, even when donors have a strong preference against the use of resources for fund-raising.

Empirical research on the interaction of fund-raising expenditures and competition solely among nonprofits is thin.[5] The most related article, Feigenbaum (1987) generated its own theoretical framework as it examined the competition among medical research charities for donations. The article concluded that as markets become more concentrated, implying less competition, charities tend to fund-raise less. A 10-point decline in the four-firm

concentration ratio resulted in a two-cent-per-dollar increase in solicitation expenditures. In addition, this rise comes from competition forcing resources away from other perquisite consumption. However, general conclusions are difficult to draw from the study. The sample covered only a narrow range of charities that are not necessarily representative of the nonprofit sector. This article builds on that original work by Feigenbaum by empirically examining competition among nonprofit organizations.

In the subsequent analysis, nonprofit fund-raising serves a similar role as for-profit advertising. This notion is less controversial than it sounds. The application of for-profit models to a nonprofit context is not new. Diamond and Gooding-Williams (2002) used an advertising model adapted from consumer research literature to help explain direct fund-raising appeals. Malani and Choi (2004) addressed the issue more directly by demonstrating that nonprofit compensation structures in hospitals promote similar goals as for-profits. In each case, authors successfully leveraged the predictive power of for-profit models to offer insight to the incentives and constraints guiding nonprofit managers.

THEORY

Attention surrounding nonprofit fund-raising has typically focused on operating efficiency of the firm. Although this term, *efficiency*, can take on a variety of meanings, it most often implies the ability of fund-raising activities to increase resources available for the organization, net of its costs. Cordes and Rooney (2004a) differentiated between private and social fund-raising efficiency.[6] Foremost, nonprofit firms will respond to their own private incentives to maximize donation revenue, net of costs. In contrast, social efficiency seeks to determine if firms are, in the aggregate, offering an amount of fund-raising that maximizes total resources allocated to a charitable cause. These are precisely the questions addressed in a for-profit context in Grossman and Shapiro (1984). Rather than reconstruct the derivations of the model, I only note its parameters within the specific context of a nonprofit firm. For a complete description of the model, see the original article.

To be consistent with the original model, fund-raising messages only offer information to donors rather than attempt to alter their preferences. It is easiest to consider nonprofits mailing a representative brochure that provides information on existence, price (in the form of expense ratios), and service characteristics.[7] This information is crucial because each nonprofit offers a slightly different product. Product differentiation in the nonprofit context can be driven by several factors. Ideology, methodology, or targeted beneficiaries can differentiate an organization's product or service. In practical terms, this implies that a donor may prefer Baptist churches to Pentecostal, or domestic antipoverty initiatives to foreign. Donors will choose the nonprofit that most closely matches their own preferences. Intuitively, the returns to a fund-raising

message are lower when more firms are in the market. Because of increased competition, donors are more likely to find a firm that more closely matches their own preferences. Therefore, a rational firm will reduce fund-raising expenditures with increased entry.

The model also considers the social welfare implications of solicitation expenditures given the above conditions. The original model demonstrates that monopolies will underprovide informative advertising. In the nonprofit context, the private incentive to fund-raise for the firm will fall below the social benefit. Monopoly providers will cease fund-raising before everyone in the market has benefited from the informative messages from the nonprofit. To understand the social welfare implications of other market structures, two factors must be considered.

Whether the market will over- or underprovide fund-raising depends on two effects. The beneficial effect of fund-raising is that it matches donors with nonprofits that more closely fit their own ideological preferences (i.e., lowers transportation costs). Grossman and Shapiro (1984) described this as the *matching effect*. The negative aspect of fund-raising is that organizations generally do not take into account the revenue reduction from other firms when they steal potential donors away from their competitors with their own solicitation. This is called the *customer-capture effect*. In the context of the model, the wasteful capture effects will dominate the beneficial matching effects when the market expands beyond a small number of firms.

If the wasteful effects of advertising dominate then, as new firms enter, aggregate solicitation expenditures for the entire market should increase. This implies that the additional solicitation expenditures from new firms rise more quickly than per-firm solicitation expenditures decline. This result would be consistent with the expectation that the market is providing too much fund-raising relative to the social optimum. It is interesting to note, the model demonstrates that a social planner would reduce the total number of firms, yet increase the fund-raising intensity of those remaining firms.

In summary, there are two testable implications that can be drawn from the Grossman and Shapiro model as it has been applied to nonprofits. First, fund-raising intensity should fall as new firms enter the market. The private incentive of the nonprofit firm is to restrict fund-raising expenses in the face of new competition. From a social welfare perspective, the market will overprovide product diversity with too many firms. Holding market size constant, per-firm fund-raising intensities should fall with the entry of new firms. Yet aggregate fund-raising expenditures will rise with entry. To the extent that the latter effect dominates, nonprofit firms will fund-raise too much. In the following section, I construct an empirical model and data set to examine these two implications.

THE DATA

With two important exceptions, every operating 501(c)(3) charity is required to file a Form 990 to the IRS.[8] This document contains key financial information including revenues, expenses, and balance sheet information. The National Center for Charitable Statistics (NCCS) takes some of these variables and aggregates them into annual data sets. These files contain a variety of financial measures for the full population of charities required to file the Form 990. NCCS Core Files 1990 thru 2000 (Urban Institute, 1990-2000) have been included in the current study, implying an 11-year panel.[9]

Operating charities have subsequently been organized by the NCCS into a detailed classification system called the National Taxonomy of Exempt Entities (NTEE). The taxonomy operates similarly to for-profit Standard Industrial Classification (SIC) codes, where broad classes of organizations can be broken apart according to the desired level of aggregation. To examine the impact of competition, it is necessary to restrict our attention to those classes of charities within the overall population of charities who compete within relatively well-defined markets. Consequently, three-digit NTEE categories were filtered through a series of selection criteria. Those firms within the three-digit classifications that matched the following criteria were kept in the current sample.

1. The charities within the classification are local, in terms of consumption of output and source of donations.
2. The charities within the classification are reasonably homogeneous across geographic markets.
3. The charities within the classification provide services that are substantially distinct from for-profit firms.
4. The charities within the classification should receive a nontrivial fraction of their revenues from donations.

From these criteria, a list of 16 subsectors was distilled and are listed in Table 1. The selection provides a broad cross-section of nonprofit firms ranging from art organizations to human service providers. Firms from these subsectors were then organized into geographic markets based on Metropolitan Statistical Area (MSA). Only firms located within a MSA were included in the data set. A total of 340 MSAs are possible for each subsector. Each subsector or MSA paring represents a distinct market. For example, in the year 2000, the data set contained 30,392 firms dispersed among 2,440 markets.[10]

MEASURES MARKET STRUCTURE

The theoretical model predicts that per-firm fund-raising expenditures will decline with entry. To test this prediction, a standard measure of market structure was used. The Herfindahl-Hirschman Index (HHI) was calculated based

Table 1. Selected Markets for Year 2000

Sector	*Description and NTEE Code*	*Number of Firms*	*Number of Markets*
1	Museums A50-A57	2,090	291
2	Performing arts A62-A6C	6,487	317
3	Community health treatment E30-E42	2,350	308
4	Abuse prevention I70-I73	650	220
5	Employment and vocational training J20-J33	2,373	298
6	Nursing, home health care E90-E92	1,973	252
7	Substance abuse prevention and treatment F20-F22	2,239	283
8	Hotlines and crisis prevention F40-F42	283	165
9	Crime prevention and rehabilitation I20-I44	1,223	237
10	Food pantries and programs K30-K36	1,117	270
11	Public housing and rehabilitation L21-L25	3,290	285
12	Homeless shelters L40-L41 & P85	976	215
13	Community centers P28	1,048	240
14	Family counseling P46	621	197
15	Senior centers P81	1,741	290
16	Residential care and group homes P73	2,337	293
Totals		30,978	2,440

Source: National Center for Charitable Statistics Core Files year 2000 (Urban Institute, 1990-2000) and author's calculations.
Note: NTEE = National Taxonomy of Exempt Entities.

on total revenues and summarized in Table 2.[11] When examining HHI, 14 of the 16 sectors trend toward greater competitiveness (lower HHI) during the sample time periods. Furthermore, firms in this sample operate in relatively concentrated markets with HHI regularly exceeding 2000.[12]

MEASURES OF FUND-RAISING

The dollar value of fund-raising expenditures is the most analogous metric for fund-raising intensity described in the theoretical model, though others are possible.[13] This value is reported on the Form 990 and is summarized by sector in Table 3. The distribution of solicitation expenses across nonprofit sectors follow expectations. For example, museums spend far more on fund-raising than do family counseling or senior citizen centers. Much of this variation is because of the size of the representative organization. However, the propensity to fund-raise also roughly tracks the sectors' dependence on donor contributions relative to their overall revenues.

To analyze the welfare effects of fund-raising under competition, the aggregate expenditure on solicitation per market is also calculated. This was done by summing the individual solicitation expenditures for every firm within a market. Aggregate fund-raising expenditures per market also vary widely by subsector. The average total solicitation expenditure in dollars per market is given by Table 4.

Table 2. Mean HHI by Sector by Year (Standard deviation in parentheses)

Sector	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
1	2016	2118	2269	2290	2313	2133	2126	2122	2096	2052	1947
	(1806)	(1802)	(1858)	(1824)	(1829)	(1868)	(1750)	(1780)	(1776)	(1682)	(1685)
2	3007	3235	3188	3212	3122	3247	3118	3085	3001	2942	2940
	(2509)	(2556)	(2515)	(2550)	(2515)	(2509)	(2487)	(2501)	(2495)	(2481)	(2416)
3	3137	3128	3092	2960	2898	2801	2824	2721	2738	2742	2720
	(2570)	(2523)	(2466)	(2287)	(2228)	(2208)	(2163)	(2102)	(2072)	(2034)	(2059)
4	2768	2797	2768	2793	2748	2737	2664	2603	2600	2577	2548
	(2068)	(2118)	(2121)	(2188)	(2116)	(2136)	(2081)	(2054)	(2036)	(1982)	(2013)
5	1744	1811	1781	1747	1754	1759	1743	1746	1702	1700	1716
	(1878)	(1894)	(1871)	(1849)	(1838)	(1867)	(1841)	(1866)	(1833)	(1838)	(1845)
6	2406	2419	2402	2424	2398	2370	2565	2614	2597	2598	2377
	(2292)	(2294)	(2226)	(2217)	(2127)	(2173)	(2194)	(2217)	(2199)	(2123)	(2123)
7	3314	3461	3447	3334	3244	3294	3417	3327	3391	3483	3543
	(2683)	(2772)	(2789)	(2694)	(2686)	(2697)	(2686)	(2599)	(2555)	(2590)	(2634)
8	3243	3203	3300	3431	3326	3241	3222	3221	3160	3135	3135
	(2561)	(2606)	(2586)	(2631)	(2556)	(2565)	(2558)	(2605)	(2521)	(2526)	(2517)
9	3321	3357	3241	3146	3139	3114	3185	3372	3514	3483	3505
	(2513)	(2514)	(2431)	(2393)	(2358)	(2317)	(2257)	(2304)	(2305)	(2364)	(2416)
10	2064	2032	1867	1841	1806	1845	1798	1896	1852	1812	1870
	(2203)	(2194)	(2061)	(2004)	(1966)	(1953)	(1952)	(2003)	(1922)	(1843)	(1869)
11	2670	2670	2600	2527	2493	2547	2468	2369	2438	2549	2457
	(2378)	(2358)	(2303)	(2184)	(2188)	(2099)	(2122)	(2031)	(2048)	(2034)	(2025)
12	3711	3651	3645	3708	3805	3729	3611	3551	3536	3526	3469
	(2686)	(2666)	(2626)	(2599)	(2641)	(2573)	(2592)	(2547)	(2529)	(2490)	(2500)
13	3387	3328	3202	3130	3231	3212	3238	3279	3275	3259	3308
	(2709)	(2701)	(2622)	(2531)	(2604)	(2568)	(2558)	(2598)	(2552)	(2558)	(2623)
14	3235	3276	3235	3277	3264	3213	3255	3198	3245	3236	3292
	(2521)	(2552)	(2546)	(2573)	(2527)	(2466)	(2449)	(2459)	(2490)	(2501)	(2478)
15	2531	2445	2337	2323	2307	2293	2374	2331	2296	2330	2372
	(2096)	(2043)	(1983)	(1946)	(1945)	(1960)	(1993)	(1969)	(1933)	(1985)	(2016)
16	2016	2118	2269	2290	2313	2133	2126	2122	2096	2052	1947
	(1806)	(1802)	(1858)	(1824)	(1829)	(1868)	(1750)	(1780)	(1776)	(1682)	(1685)

Source: National Center for Charitable Statistics Core Files (Urban Institute, 1990-2000) and author's calculations.
Note: HHI = Herfindahl-Hirschman Index. See Table 1 for a list of the 16 nonprofit sectors.

As an additional test, I examined the ratio of fund-raising expenditures to public contributions at the market level. Table 5 summarizes this information by subsector. Note the sizable variation, within and across subsectors, for the average return on fund-raising. Employment and vocational training have the highest average return, earning an average of US$185 on each dollar spent on fund-raising. Museums have the lowest return in the sector, averaging only $19 per fund-raising dollar.

Table 3. Average Solicitation Expenditure Per Firm in 2000 (dollars)

			Fund-Raising Expenditures (Solicit)			
Sector	M $	SD	*Minimum*	*75%*	*90%*	*Maximum*
1	107,288	543096	0	34,778	203,129	13,300,000
2	26,840	202089	0	1,585	27,852	7,497,000
3	22,269	151755	0	0	40,761	5,957,075
4	19,933	65029	0	11,315	49,973	867,716
5	19,031	384060	0	0	17,324	18,400,000
6	22,192	294719	0	0	7,002	8,920,499
7	19,961	331504	0	0	11,620	12,100,000
8	18,039	65954	0	10,952	38,094	813,812
9	28,864	291086	0	0	18,190	6,112,900
10	39,565	258738	0	6,350	67,704	6,804,877
11	3,786	91303	0	0	0	5,056,438
12	35,691	181646	0	16,019	82,130	4,842,037
13	42,272	188686	0	12,680	93,234	4,565,529
14	12,142	49146	0	2,044	28,811	808,508
15	12,621	71120	0	909	25,676	2,219,581
16	37,816	374603	0	0	41,846	13,100,000

Source: National Center for Charitable Statistics Core Files year 2000 (Urban Institute, 1990-2000) and author's calculations.
Note: See Table 1 for a list of the 16 nonprofit sectors.

Table 4. Average Aggregate Fund-Raising per Market (S) in Year 2000

			Aggregate Market Fund-Raising Expenditures (S)			
Sector	M	SD	*Minimum*	*75%*	*90%*	*Maximum*
1	33,600,000	59,500,000	0	28,100,000	113,000,000	234,000,000
2	53,300,000	99,800,000	0	47,700,000	335,000,000	335,000,000
3	12,000,000	17,700,000	0	13,900,000	47,600,000	67,600,000
4	11,100,000	33,500,000	0	9,775,111	25,700,000	335,000,000
5	15,200,000	43,800,000	0	11,600,000	25,900,000	335,000,000
6	10,500,000	14,000,000	0	15,100,000	34,600,000	67,600,000
7	17,700,000	58,900,000	0	11,800,000	25,900,000	335,000,000
8	7,794,626	15,500,000	0	6,545,554	20,100,000	99,100,000
9	6,649,950	15,300,000	0	5,286,378	15,200,000	99,100,000
10	14,100,000	50,300,000	0	7,005,190	26,400,000	335,000,000
11	3,115,666	5,989,442	0	3,031,660	9,406,051	57,600,000
12	8,904,060	13,500,000	0	9,775,111	25,600,000	99,100,000
13	4,851,861	8,892,884	0	5,855,101	10,800,000	184,000,000
14	6,801,946	15,100,000	0	4,526,414	26,400,000	147,000,000
15	5,644,499	9,991,641	0	5,286,378	18,000,000	47,600,000
16	12,400,000	25,400,000	0	10,500,000	26,800,000	147,000,000

Source: National Center for Charitable Statistics Core Files year 2000 (Urban Institute, 1990-2000) and author's calculations.
Note: See Table 1 for a list of the 16 nonprofit sectors.

Table 5. Donations Received per Dollar of Solicitation, by Market in Year 2000

			Public Donations and/or Solicitation Expenditures			
Sector	M	SD	*Minimum*	*75%*	*90%*	*Maximum*
1	19.12	35.50	.02	15.75	27.09	648.84
2	15.49	51.92	.06	14.75	22.63	2,455.45
3	45.32	245.61	1.26	30.26	49.33	5,837.89
4	41.29	112.85	1.69	28.73	60.60	879.86
5	185.03	2,679.79	.00	57.79	80.93	66,514.52
6	24.71	43.52	.06	22.02	51.45	619.29
7	102.22	522.76	.01	57.76	96.76	9,195.35
8	56.65	227.84	1.04	41.73	76.60	2,919.27
9	62.12	387.53	.00	35.04	69.70	6,793.35
10	162.71	1,297.91	4.34	52.84	98.64	20,202.55
11	89.66	501.18	.00	28.38	83.98	6,193.68
12	41.79	139.42	1.04	30.52	57.84	2,574.78
13	45.59	153.69	.06	40.62	71.90	2,388.05
14	125.70	919.64	.02	43.98	109.68	15,025.23
15	99.12	446.05	.00	52.84	127.00	8,636.91
16	44.97	258.64	.11	30.65	54.24	4,833.84

Source: National Center for Charitable Statistics Core Files year 2000 (Urban Institute, 1990-2000) and author's calculations.
Note: See Table 1 for a list of the 16 nonprofit sectors.

MEASUREMENT ISSUES

An important issue demonstrated by the previous tables is the suspicious ability of many nonprofit firms to receive significant public donations without spending anything on solicitation to attract those gifts. Hager, Rooney, and Pollak (2002) found that 59% of nonprofits receiving some type of public support report zero fund-raising expenses.[14] Furthermore, nearly one fourth of those "zero-cost fund-raising" organizations received $5 million in contributions or more. It would seem suspect that a sizable fraction of charities would be able to raise substantial donation revenue so effortlessly. Despite specific American Institute of Certified Public Accountants (AICPA) guidelines, nonprofit organizations have demonstrated substantial latitude in reporting of management and fund-raising expenditures. Because the Internal Revenue Service (IRS) does not collect tax revenue on profits, there has been little effort to enforce strict accounting policies (Government Accounting Office, 2002).[15] Even with the serious potential for measurement error in expense reporting, it is still possible to characterize the nature of the bias.

To the extent that the measurement error is random, standard errors will rise; however, point estimates of the coefficients will be unbiased. This makes statistical significance more difficult to detect. It is, however, more likely that management and general expenses are systematically underreported. To the extent that donors regard management and fund-raising expenditures as a price, nonprofit managers have an incentive to underreport overhead

expenditures. Systematic underreporting of overhead will cause bias in the intercepts; however, slope coefficients will remain unbiased.

Hager et al. (2002) hypothesized that many nonprofit firms have some latent (but underreported) capacity for fund-raising. This fund-raising capacity may include time the executive director spends talking to supporters, the efforts staff spend managing incoming funds, or institutional relationships with similar organizations. Regardless, nonprofit managers may not perceive these duties as ongoing fund-raising activities and, therefore, do not record their opportunity cost appropriately. The implication of this reasoning is that fund-raising expenses are censored below a certain threshold because managers do not recognize the true opportunity costs of their fund-raising inputs. To the extent that reporting zero solicitation is a censoring problem, two alternative techniques are used.

In addition to using ordinary least squares (OLS) for the full sample, two alternate specifications are used to account for the impact of underreporting fund-raising expenditures. First, only those firms who have positive solicitation expenditures throughout the panel are kept within the sample. This limits our attention only to firms who are active fund-raisers. However, this approach may lead to biased and inconsistent estimates for the sample as a whole. As a secondary option, a Tobit model was used. The Tobit estimation accounts for censored dependent variables, producing consistent parameter estimates.

EMPIRICAL MODEL

Panel data on fund-raising expenditures are used to estimate the empirical relationship between market structure and fund-raising intensity, within and across markets. I use the following empirical specifications for firm *i* in year *t* for market *j*:

$$SOLICIT_{it} = \beta_0 + \beta_1 HHI_{jt} + \beta_2 HHI_{jt}^2 + \beta_3 AGE_{it} + \beta_4 ASSETS_{it} + \beta_5 CONT_{it-1} + \beta_6 T_t + \beta_7 SECTOR_t + \beta_8 MSA_{jt} + \varepsilon_{it}.$$

The dependent variable, *SOLICIT*, is the per-firm dollar expenditure on fund-raising as stated by the Form 990. Solicitation expenditures are regressed on Herfindahl-Hirschman index (HHI). To control potential differences in scale, total assets (ASSETS) of the firm was included. Furthermore, the age (AGE) of the firm was added to proxy for the impact of reputation across firms. Lagged total contributions (CONT) was included to account for the impact of prior government or private donations on fund-raising decisions. Additional controls include a vector of time and subsector dummies. The annual time dummies control for macroeconomic, time varying, disturbances whereas the subsector dummies control for time-invariant differences across subsectors.

Finally, there are potential embedded differences across MSA geographic markets. To control these possible variations across geographic markets, two approaches were taken. First, a basic set of demographic controls were chosen based on characteristics that have been demonstrated to effect donor giving. Population, per-capita income, percentage of the population with a high school degree (education), percentage of the population that is African American (Black), and percentage of the population that is Hispanic (Hispanic) have each been shown to affect overall giving (American Association of Fundraising Counsel [AAFRC], 2002). A full set of indicators is included for each MSA. Alternatively, dummy variables were included to control possible systematic differences across markets. However, this approach substantially reduced variation, potentially masking important effects. The models are estimated first by OLS.

To address the potential measurement error, two separate tests for robustness are considered. Following Andreoni and Payne (2003), the model was estimated again after dropping all the observations where SOLICIT = 0. Removing these firms focuses attention on the relationship between fundraising and market structure for only those firms that spend positive amounts on solicitation. Alternatively, a Tobit estimation technique is used on the full sample. This approach compensates for the substantial censoring problem with nonprofits reporting zero fund-raising expenditure.

To test the welfare implications of the theoretical model, I replaced aggregate market solicitation expenditures as the dependent variable. Instead of individual firm observations, each market is now an individual observation. The empirical model is specified as follows for market j in time t:

$$S_{jt} = \beta_0 + \beta_1 HHI_{jt} + \beta_2 HHI_{jt}^2 + + \beta_3 MSA_j + \beta_4 MRKTCONT_{jt} + \beta_5 T_t + \beta_6 SECTOR_t + \varepsilon_{jt}.$$

Where $S_j = \Re_{i=1}^{n}(SOLICIT_i)$, or aggregate solicitation expenditures for each market. The dependent variable is regressed on the HHI. To control fundamental differences across markets, MSA demographic characteristics are again used. *MRKTCONT* represents aggregate contributions within an entire market in the time period to control for market size. Finally, as before, a set of time (T) and 16 subsector dummies are included (SECTOR). As an additional measure of market structure the actual number of firms (n) is also tested. This has the advantage of being closely related to the theoretical model, yet does not account for the distribution of revenues within a market. The use of n as the market structure variable may have the effect of overemphasizing the competitive impact of new firms entering the market. The model is estimated using OLS.

Table 6. Per-Firm Solicitation Expenditure Regression Results (*t* statistics are in parentheses)

	Solicit				
	OLS		*OLS Solicit > 0*		*Tobit*
	1	*2*	*3*	*4*	*5*
HHI	6.84**	6.36**	6.89**	9.75**	7.90**
	(2.75)	(2.69)	(2.90)	(2.42)	(2.00)
HHI^2	–.0005**	–.0006**	–.0008**	–.0007**	–.0007*
	(2.67)	(2.48)	(3.24)	(2.21)	(1.94)
Age	883**	635**	1690**	1369**	985**
	(2.45)	(3.97)	(14.70)	(2.53)	(3.33)
Assets	.005**	.007**	.007**	.005**	.006**
	(3.79)	(5.37)	(55.50)	(3.15)	(4.34)
Lag contributions	.02**	.02*	.02**	.03**	.03**
	(3.08)	(1.84)	(139.60)	(2.96)	(1.97)
Education		209	36676**		–10829
		(.01)	(1.35)		(.39)
Per-capita income		.69*	3.56**		1.04
		(1.66)	(7.84)		(1.52)
MSA population		.004	.009**		.005
		(1.45)	(4.05)		(.85)
% Black		4386	–20730		18559
		(.24)	(1.21)		(.60)
% Hispanic		18397	–6460		33186
		(1.07)	(.39)		(1.04)
R^2	.25	.17	.20	.27	

Note: OLS = ordinary least squares; HHI = Herfindahl-Hirschman Index; MSA = metropolitan statistical area. Regressions are clustered by market. Sector and time dummies have been suppressed for each regression. Market dummies have been suppressed for Regressions 1 and 3.
*$p < .05$. **$p < .01$.

RESULTS

Table 6 offers a summary of regression results for per-firm solicitation expenditures. Estimation results for the impact of market concentration were similar across specifications. An increase in market concentration results in a positive and statistically significant increase in per-firm fund-raising (solicitation) expenditures. Regressions 1 and 2 retain the full sample of nonprofit firms totaling nearly 12,000 unique firms. Regression 1 uses market-level fixed effects, while Regression 2 proxies for important MSA variation uses demographic data. Results indicate that for low levels of HHI (atomistic markets), a 1-point increase in HHI results in a $7 increase in solicitation expenditures. As markets become increasingly concentrated (higher HHI), solicitation continues to grow at a declining rate until there are only two firms in the market. Per-firm solicitation expenditures decrease slightly for monopoly firms.

These results are consistent with for-profit literature examining the interaction between market structure and advertising.[16]

Regressions 4 and 5 offered results when "zero-cost fund-raisers" are dropped, reducing sample size to around 8,000 unique firms throughout the panel. The relationship between market structure and fund-raising remains positive and statistically significant throughout the relevant range. Coefficients on market structure increase in magnitude slightly using MSA dummies relative to demographic controls. The final test for robustness uses a Tobit model to compensate for the potentially censored dependent variable. The relationship between market concentration and fund-raising expenditures is again positive and statistically throughout the relevant range. The magnitude of the coefficients on HHI are nearly identical to the OLS estimation.

Results in this case confirm theoretical predictions that fund-raising intensity should increase with market power. The magnitude of the estimated coefficients would indicate that market structure plays an economically important role in determining fund-raising intensity. For example, moving from a relatively competitive market of 10 firms to an oligopoly market of 4 firms implies an increase in solicitation expenditures of $7,487 per firm. Moving from this oligopoly to a duopoly implies an increase of more than $7,189. To put this in context, the average fund-raising expenditure for the entire sample is slightly more than $50,000.

A variety of alternative specifications were tested. HHI was lagged by one period to account for potential delays in reacting to new entrants. This had negligible effects on the regression coefficients. To be more consistent with the theoretical model, the number of firms in the market n was used instead of the more popular measure of market structure, HHI. Signs remained consistent with theoretical predictions, yet statistical significance suffered. It is likely that much of the variation in market structure is manifested in shifting market share rather than new entry. This makes the impact of new entry difficult to detect. A random effects model was also tested; however, subsequent Hausman specification tests indicated that a fixed-effects estimation was preferable. Finally, using a simple Chow test, I failed to reject the hypothesis that the slope coefficients are similar across the 16 nonprofit subsectors. This implies that the sectors can be pooled with reasonable confidence.

The second issue addressed by the model is whether additional fund-raising expenditures, in the aggregate, lead to additional donation revenues for the market. Because marginal fund-raising expenditures are not observed, it is difficult to determine if nonprofit markets are overproviding fund-raising messages. Instead, it is possible to observe if these nonprofit markets have characteristics that follow the directional predictions of the model. Table 7 gives the results for the impact of market concentration on fund-raising expenditures. Regression 6 demonstrates there is an inverse and statistically significant relationship between market concentration and fund-raising. This result indicates that the additional fund-raising expenditures of a new firm

Table 7. Aggregate Market Solicitation Expenditure Regression Results (*t* statistics are in parentheses)

	Market Solicitation (S)		*Donations and/or Solicitation*	
	6	*7*	*8*	*9*
HHI	–2,123.65**		.03	
	(3.91)		(.32)	
HHI^2	.14**		.0000	
	(3.52)		(.58)	
N		62,876**		–2.02**
		(7.60)		(2.54)
N^2		–4.43		.0019**
		(.50)		(2.52)
Donations	3.60**	3.13**		
	(3.70)	(3.38)		
Education	–11,489,680	–9,884,986	1,158	1,044
	(1.36)	(1.35)	(1.51)	(1.40)
Per-capita income	282.56*	141.48	.04	.04
	(1.88)	(1.11)	(1.07)	(1.09)
MSA population	1.09**	–.45	.00	.00*
	(2.05)	(1.17)	(1.53)	(1.79)
% Black	–2,166,864	–1,384,771	–123	–232
	(1.12)	(.97)	(.47)	(.83)
% Hispanic	–1,601,074	–977,839	–144	–183
	(.98)	(.87)	(.55)	(.67)
R^2	.27	.54	.04	.03

Note: HHI = Herfindahl-Hirschman Index; MSA = metropolitan statistical area. Robust standard errors used. Sector and time dummies have been suppressed for each regression.
*$p < .05$. **$p < .01$.

entering the market overwhelm the effect of the reduction in per-firm fund-raising. This is the necessary condition outlined in the theoretical for excessive fund-raising in a market. Specifically, increasing market concentration by one point on the HHI would result in approximately $2,123 decrease in aggregate fund-raising. Mirroring the results from per-firm fund-raising, the relationship becomes slightly positive when monopoly is reached. Recalling that HHI and *n* move in opposite directions, Regression 7 reveals a positive and statistically significant relationship between the number of firms in a market (*n*) and fund-raising expenditures.

As a final check, it is helpful to look at the ratio of private donations to solicitation dollars used to raise that amount. The ratio approximates the return on one dollar allocated to fund-raising. Here, *approximate* implies that these are average values rather than marginal. Contrary to Regressions 6 and 7, it appears that HHI has little impact on the average returns to fund-raising. The coefficient on HHI retains the expected positive sign, yet there is little statistical significance. In contrast, using *n* as the measure for market structure does give an inverse and statistically significant coefficient. This result implies, for

low levels of n, that adding an additional firm into a market reduces the return to fund-raising by roughly $2. Given that a typical market in the sample has a return of $75 for every dollar allocated to fund-raising, this is not an overwhelming impact.

CONCLUSION

Altruistic nonprofit managers face private and social incentives when making fund-raising decisions. The analysis presented here confirms the prediction that nonprofit organizations will follow private market incentives by reducing per-firm fund-raising with increased competition. This trend is important for two reasons. First, nonprofit firms appear to behave similarly to their for-profit counterparts. Nonprofits, despite the nondistribution constraint, appear responsive to market forces when making their fund-raising decisions. As their private benefit to solicitation declines in a saturated market, nonprofit firms will voluntarily reduce their fund-raising outlays. This lends credibility to the notion that market competition plays an underappreciated role in guiding nonprofit firm behavior.

Second, even though per-firm fund-raising declines with entry, aggregate fund-raising rises. This is true even when the size of the donor market is held constant. The implication of this finding is that additional fund-raising resources are likely stealing donors away from other nonprofits rather then generating new resources for a particular cause. This is a genuine concern for altruistic nonprofit managers who care not only for the performance of their own organization but also for the overall provision of a charitable service. It is ironic to note, average fund-raising expense ratios do not indicate that this sample of nonprofits are fund-raising beyond what is privately optimal. In fact, it appears that most firms within the sample have the private incentive to fund-raise even more. These managers face the difficult choice of serving their own organization by fund-raising aggressively, or devising some method to reduce aggregate solicitation expenditures.

Previous research has focused on the use of collective fund-raising (such as the United Way) or legal caps on fund-raising ratios as a solution for discouraging excessive fund-raising expenditures. This mechanism, however, has substantial disadvantages. The findings of this article would indicate two alternatives to this mechanism. First, market competition appears to be an effective private restraint on fund-raising. To the extent that donors can observe relative expense ratios, competitive donor markets will continue to restrain fund-raising activities. As better information is made available to a wider donor audience, price competition among nonprofit firms will likely become even more effective.

Second, if nonprofit managers are indeed worried about high aggregate levels of fund-raising, the crucial issue is the overall number of nonprofit firms in the market, not their individual fund-raising decisions. The solution

presented by the model is that managers should advocate for increased barriers to entry, thereby reducing the number of firms. Currently, legal and financial barriers for the formation of a nonprofit are low. Typically a few thousand dollars in legal fees and 4 months time is all that is necessary to receive charitable tax status. The most direct method to reduce excess fund-raising is simply raising the cost of entering the nonprofit market. This may include a range of policies from raising the fees associated with the granting of charitable tax status to a more draconian measure such as Certificates of Need. Although this would correct the problem of excessive aggregate fund-raising, ironically, it would stimulate greater fund-raising activity per-firm.

Despite its results, the analysis does have limitations. Any article of this type is subject to criticism of the choice of market construction. In this case, nonprofit markets were organized based on MSAs. Great care was taken to ensure that the nonprofit organizations included in the sample could reasonably be expected to compete locally for donations within those geographic boundaries. However, there will be cases where the actual market boundaries of firms do not match up with available proxies. Furthermore, the article is not able to address the bulk of nonprofit organizations who compete in larger regional or national markets for donations. This eliminates many interesting classes of organizations including universities and large hospitals. Another useful extension would be closely examining the donor market boundaries of different types of nonprofits. As more research is dedicated to examining the impacts of market competition among nonprofits, it will take on increasing importance to define the precise boundaries of those markets.

Notes

1. Based on author's calculations and data taken from *The New Nonprofit Almanac* (Weitzman & Jalandoni, 2002).

2. This presumes that nonprofits are maximizing revenues net of costs (net revenue). If the organization is, instead, a budget maximizer then the firm should continue fund-raising until the last dollar spent returns no more donation revenue. See Steinberg (1986) for more detailed discussion of this issue.

3. The formation of a nonprofit organization usually falls under various state laws. The defining characteristic of the nonprofit firm is the legal restriction against private inurement, whereby excess earnings of the organization cannot contribute to the private benefit of a stakeholder (i.e., the nondistribution constraint). This is a distinct issue from charitable tax status and means that the organization cannot distribute net earnings to its stakeholders. Stated succinctly, no entity may be a residual claimant. This removes the profit maximization objective assumed for most for-profit firms. Among organizations characterized as nonprofit entities, only a fraction of them are classified under section 501(c)(3) of the federal tax code as tax-exempt charitable organizations. IRC § 501(c)(3) defines *charitable organizations* as those who are operated exclusively for religious, charitable, scientific, testing for public safety, literary, or educational purposes, or to foster national or international amateur sports competition, or the prevention of cruelty to children or animals. These charities are unique in that they are relieved of specific tax burdens and can offer donors the ability to deduct contributions from their federal income tax obligations. The current study restricts its attention to this population of nonprofits.

4. The concept of *price* is not immediately clear in the case of donor markets. The critical issue is what donors perceive as the cost facing them when making a donation to a nonprofit firm. One common measure is the fraction of the donation remaining net of fund-raising costs and administration overhead (overhead expense ratio). This would imply a price for one dollar's worth of output equal to $1/(1-F-A)$, where F and A are the fraction of donations allocated to fund-raising and administration. Watchdog organizations such as the Wise Giving Alliance by the Better Business Bureau (BBB) aggregate expense ratios so that donors can compare across similar nonprofits more easily. The BBB found that 79% of Americans said that fund-raising expense ratios was important to them in deciding how to allocate their donations (Cordes & Rooney, 2004b)

5. There has been a sizable literature concerning competition between for-profits and nonprofits. See Duggan (2002) for a recent example. This literature almost exclusively focuses on the hospitals and the health care industry. These firms, however, do not rely heavily on donations and are often much larger than a typical charity. As such, that literature is not very helpful in analyzing competition solely among charitable nonprofits. There has also been considerable work on the impact of government grants on fund-raising efforts, the so-called crowding out hypothesis. Andreoni and Payne (2003) showed that nonprofits reduce fund-raising effort when a grant is received. This strain of research, however, does not address competition among nonprofits and so is not directly relevant to the current study.

6. The theoretical model conceives of the social optimum as the sum of consumer surplus plus revenue (net of production costs) to the nonprofit.

7. Readers may object to this dramatic simplification. Indeed, it should be acknowledged that nonprofit organizations have a wide variety of tools for solicitation. Solicitation technologies could include direct mail, broadcast media, telemarketing, corporate fund-raising, grant writing, along with personal contact. Sargeant and Kahler (1999) offered estimations on the differing rates of return to each type of fund-raising for United Kingdom charities. For this analysis, however, only a generic solicitation technology is considered. First, it is not possible to differentiate fund-raising methodologies from Form 990 data. The implicit assumption of the model is that nonprofit managers are already choosing the optimal bundle of fund-raising technologies for their circumstances. A more detailed data set on a specific subsector could yield additional insight on the substitution effect between different types of fund-raising methodologies. This, however, is beyond the scope of the current study. At present, we are only concerned with the aggregate dollar value of fund-raising, not how it was spent.

8. Nonprofit organizations with less than $25,000 in revenue and religious congregations are not required to file the Form 990. The IRS keeps no data on these firms.

9. Nominal values for expenditures were converted to real using GDP deflator information. Core files include partial financial information for the full population of public charities required to file the Form 990. This data has been aggregated into annual data sets by the National Center for Charitable Statistics as a project of the Urban Institute.

10. Because the model focuses on the fund-raising activities of firms, those organizations that reported no fund-raising during the entire 11-year panel were removed from the data set. It is likely that these organizations received charitable funds from specialized support organizations instead of operating their fund-raising activities "in-house." These are special cases that should be considered separately.

11. The Herfindahl-Hirschman Index is calculated by the summing the squared market shares of each firm in a market.

12. As a point of reference, the Department of Justice considers Herfindahl-Hirschman Index (HHI) indexes above 1800 as "highly concentrated" markets in the case of financial institutions (Laderman, 2003).

13. Other measures are possible such as the fraction of total revenues spent on fund-raising or the fraction of donation revenue spent on fund-raising. The HHI is calculated by the summing the squared market shares of each firm in a market.

14. The Nonprofit Overhead Cost Project (sponsored by the Urban Institute and Indiana University; www.coststudy.org) has released a series of research briefs focused on analyzing the issue of overhead costs in nonprofits. Although No. 4 offers anecdotal evidence that nonprofit staff tend

to underreport their fund-raising expenditures, accuracy does appear positively correlated with firm expenditures and size (Yetman & Yetman, 2004). There are viable reasons for organizations to report little or no solicitation expenditures while receiving substantial donations. Organizations may rely on volunteer staff or board members to solicit funds. Or the nonprofit may belong to a partnership organization such as the United Way that collects funds on behalf of the nonprofit. Yet recent research indicated that it is more likely the case that managers and staff do not fully account for their time spent on fund-raising. For the particular sample drawn for this empirical analysis, approximately 72% of organizations receiving donations report spending nothing on fund-raising.

15. IRS reviewed only .029% of all nonprofit returns in 2001 (Government Accounting Office, 2002)

16. Ackerberg (2003) and Lee (2002) found at least weak support for the inverted *U* relationship between market concentration and advertising in a wide variety of for-profit firms. Advertising expenditures increase as markets become more concentrated. When markets become highly concentrated (such as in a duopoly) advertising then appears to decline.

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