Crowding out Both Sides of the Philanthropy Market:
Evidence from a Panel of Charities

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Abstract: When the government gives a grant to a private charitable organization, do the donors to that organization give less? If they do, is it because the grants crowd out donors who feel they gave through taxes (classic crowd out), or is it because the grant crowds out the fund-raising of the charities who, after getting the grant, reduce efforts of fund-raising (fund-raising crowd out)? This is the first paper to separate these two effects. Using a panel of almost 3100 charities, we find that crowding out is significant, at about 56 percent. Most of this crowding out is due to reduced fund-raising. We estimate that 68 percent of crowd out is from reduced fund-raising, and only 32 percent from the classic crowd out. Such a finding could have important consequences for how governments structure grants to non-profits. Our results indicate, for example, that requirements that charities match a fraction of government grants with increases in private donations might be a feasible policy that could reduce the detrimental effects of crowding out.

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1. Introduction

When the government gives a grant to a private charitable organization, how much will this displace private donations? This is known as the crowding out problem and is one of the oldest and most important questions in public economics.[1]

The classic theory of crowding out is that individual donors, who are also often tax payers, will treat their voluntary private contributions as a substitute for their involuntary contributions through taxation and, as a result, reduce giving to a charity by the full amount of the grant. For this explanation to have traction, donors must treat their gift and the government's contribution as substitutes. A growing body of evidence from both experimental and survey data, however, questions this assumption.[2] The theory also requires that donors are aware of the fluctuations in government grants received by the charity and respond accordingly. While such information eventually becomes publicly available through tax filings of the charities, using IRS form 990, it may not be available to the donors at the time of their contributions.

The classic theory also ignores an important aspect of reality, namely fund-raising. Fund-raising is a significant undertaking. A typical charity will spend from 5 to 25 percent of its donations on further fund-raising activities.[3] While these activities may be profitable for the organizations, managers of nonprofits are forbidden by law from capturing any of this surplus for themselves. Charity managers, therefore, may see fund-raising as a "necessary evil" and, given the chance, might prefer to divert fund-raising resources to their charitable activities.[4] Moreover, donors and charity watch-dog groups often perceive large fund-raising expenses, rightly or

[1] See Clotfelter (1985) and Andreoni (2006) for reviews and perspectives on crowding out.
[2] Andreoni (1989, 1990) provides some of the early theoretical contributions, recent empirical evidence comes from Ribar and Wilhelm (2002), recent experimental evidence can be found in Andreoni (2007), and neurobiological evidence is found in Harbaugh, Mayr, and Burghart (2007). Andreoni (2006) reviews this literature.
[3] See Andreoni (1998) for a discussion of fund-raising expenditures by charities in the Unites States.
[4] This hypothesis for why charities may not maximize net revenues was first offered by Weisbrod (1988) and since has been explored by several others. We discuss this in more detail later in the paper.

wrongly, as indications of a low-quality charity. Charity Navigator, for instance, gives its lowest rating to a food bank or community foundation that raises fewer than $5 for every dollar spent on fund-raising.[5] Since both donors and managers seem predisposed to dislike fundraising, a grant to a charity may also crowd out its fund-raising activities. This gives a second indirect way that grants could reduce giving—charities may spend less effort on raising money.

This paper is the first to both estimate crowd out and to decompose it into classic crowding out and indirect crowding out due to reduced fund-raising. Why is this endeavor important? First, crowding out is a hidden cost to government grants, and it is important to understand its magnitude and its causes. Second, the nature of crowding out can have important consequences for potential government policies toward charities and fundraising. Suppose, for instance, that in an attempt to mitigate crowding out the government requires that spending by the organization go up by the full amount of the grant, that is, it legislated zero crowding out. If crowding out is entirely due to reduced fund-raising, then this policy is feasible. If, by contrast, crowding out is purely classic and charities are behaving optimally, then the government may be powerless to stop the ill effects of crowding out. Hence, if we are able to find a significant fraction of crowding out is in fact due to endogenous responses of the charity, it expands the policy tools available to a government wishing to maximize the benefits of the tax dollars spent.

We study crowding out and its causes with a panel of tax returns from charitable organizations. Our sample includes over 17 thousand observations from almost 3100 American charities. Our estimates show significant crowding out of about 56 percent—every $1000 grant reduces giving by $558. This figure is robust to a number of different instruments, and is consistent with prior studies. Most importantly, we find that 68 percent of the crowding out is the result of reduced fund-raising, and only 32 percent is classic crowding out.

[5] See the Charity Navigator web site http://www.charitynavigator.org/index.cfm, under "methodology."

Another interesting finding of our analysis is that charitable fund-raising is highly profitable, with over $4 raised per dollar spent on fund-raising. While this number may strike economists used to profit maximization as somewhat high, it is perfectly in line with ideals of best practices promulgated by the charity watchdog groups and fund-raising professionals, as we show below. That is, while economists see this finding surprising, industry experts would find this return to fund-raising to be just as expected. Below we provide some speculation on the kinds of factors that could explain the effectiveness of fund-raising.

The most important implication of our findings is that they open up a broader set of policy alternatives to the government. According to our estimates, a $1,000 increase in grants will result in classic direct crowding out of $178, reduced fund-raising expenditures of $88, and indirect crowding out due to reduced fund-raising of $381. As a result of the $1,000 grant, total contributions to the charity fall by $558, and the charity nets $530 including the money it saves on fund-raising. If charities were required to maintain current fund-raising expenditures and practices, the charity would suffer only the $178 loss in revenue from direct crowding out. Alternatively, if the government required the charity to increase its spending on programs by the full amount of the grant, such a policy could be feasible for many organizations. Our results indicate that if after getting the $1000 grant the charity were to increase its fund-raising expenses by $54, it could maintain total private donations (net of fundraising costs) at the same level it had before the grant.

This paper is organized as follows. Next we give a brief background to the literature on crowding out, including the motivation for our approach. Section 3 describes the data. Section 4 discusses the estimation strategy and section 5 presents the results. Section 6 is a conclusion.

2. Background

The classic model of crowding out, as presented in Warr (1982), Roberts (1984), and Bergstrom, Blume, and Varian (1986), is derived from the assumption that individuals see their own contribution as a perfect substitute for dollars given by the government. Andreoni (1988) showed that this model of "pure altruism" is unable to explain many simple facts about giving, and also leads to extreme predictions, such as that consumption is independent of redistributions of income. He proposed a new model of impure altruism that assumes individuals experience some joy of giving, or a "warm-glow" (Andreoni, 1989, 1990). Such preferences naturally lead to incomplete crowding out. Empirical research, such as Ribar and Wilhelm (2002), has been more consistent with a model of warm-glow giving than of pure altruism.

There are many empirical studies on crowding out, and most show that crowding is quite small, often near zero, and sometimes even negative (crowding in). Notable studies include Kingma (1989), Okten and Weisbrod (2000), Khanna, Posnett and Sandler (1995), Manzoor and Straub (2005), Hungerman (2005), Borgonovi (2006), and Gruber and Hungerman (2007). Payne (1998) noted that the government officials who approve funding for the grants are elected by the same people who make donations to charities. This means that positive feelings toward a charity will be represented in the preferences of both givers and the government, and that this simultaneity could bias findings against crowding out and could even lead to biased predictions of crowding in. For instance, a hurricane that causes both public and private charity to rise could create this positive bias. Payne (1998), using a panel of charities drawn from IRS 990 forms, addresses this with two-stage least squares analysis. She uses aggregate government transfers to individuals in the state as an instrument for government grants and finds that estimates of crowding out rise from zero in OLS to around 50 per cent in 2SLS.

Andreoni and Payne (2003) ask the simple question: what happens to a charity's fund-raising expenses when it gets a government grant? They first provide a theoretical framework that predicts that charities that compete for donors will reduce fund-raising efforts in response to a grant, due partly to classical crowding and partly to substituting efforts away from fund-raising and into their charitable services. For the empirical analysis, they again looked at IRS 990 filings, this time on a 14-year panel of 233 arts organizations and 534 social services organizations. As with Payne's (1998) earlier observation, charities that are in high demand will likely receive government grants and engage in active fund-raising. This again requires an instrumental variables approach. Their results imply that a $1000 increase in grants will reduce fund-raising for the arts by $265, and for social services by $54. These effects are significant; grants decrease fund-raising by about 52 percent for arts organizations and 32 percent for social service organizations.

The next natural step in this research is to measure crowding out and ask what fraction of this is due to reduced fund-raising as opposed to classic direct crowding out. We address this question next.

3. The Nonprofit Data Set

The data on nonprofit revenues and expenses come from federal tax returns filed by IRS Section 501(c)(3) organizations for the period 1982 to 2002 (excluding 1984).[6] Representing the largest part of the nonprofit sector, 501(c)(3) nonprofits are those organizations whose purposes

[6] The data were obtained from the Urban Institute's National Center for Charitable Statistics. For a given year, the returns are for firms whose accounting period ended between November of that year and October of the following year. The sample is stratified based on the asset size of the non-profits. Most of the returns tracked are for non-profits with assets that exceed $500,000. For each year, IRS randomly sampled the non-profit firms within each asset level. As IRS's budget for this study increased, the number of non-profit organizations tracked for a given year also increased. Data for 1984 were not collected for budgetary reasons.

are religious, charitable, educational, scientific, or related to public safety testing.[7] The tax returns identify the amount the nonprofit received in private donations, government grants, and fund-raising expenditures for the year for which the return was filed. Private donations may come from individuals, estates, corporations, and/or other nonprofit organization. Government grants include grants received from all levels of government, excluding reimbursements for services provided by the nonprofit under a government contract.[8]

Prior to 1998, only a random sample of IRS 990 filings (stratified based on the income of the charity) were available. Starting in 1998, all IRS 990 filings were digitized and made available by the National Center for Charitable Statistics. The organizations have been classified in the National Taxonomy of Exempt Entities. We constructed an unbalanced panel data set for organizations operating in the 48 contiguous United States in human service, children and family related service, poverty, housing and food related, and other types of social service.[9] As in our earlier work (2003), we exclude firms if government grants, private donations, or fund-raising are always zero.[10] We also only kept firms with at least five years of observations.[11] We drop a small group of firms that showed either unrealistic data for private donations and government grants over the sample (6 firms) or if the firm level control measures used in the analysis are always zero (31 firms).

[7] An organization is required to file a tax return if its annual gross receipts are greater than $25,000 and it is not a religious organization.

[8] These types of payments are reported on a non-profit's tax return under program service revenue. Program service revenue, however, is not limited to payments by the government; it covers any payment received by the non-profit for the services provided.

[9] We used the NTEE classification as it existed in 2005 and kept those firms with a 1-digit classification of I, J, K, L, O, P, or S.

[10] We also exclude a group of firms that report unusually high levels of fund-raising expenditures relative to the private donations received (ratios greater than 75 cents of fund-raising expenditures to every dollar of private donations). We also excluded 880 organizations for which there were reported for 3 or more consecutive years of positive private donations and zero fund-raising expenditures. These data anomalies indicate potential accounting or reporting problems with the tax returns.

[11] We have similar results if we keep firms with only 4 years of observations. The standard errors, however, are higher with these results.

This leaves us with a sample of 3,077 charities, and a total of 17,213 observations. All of the dollars are constant (base year 2000). Overall, the charities average $1.22 million in donations, about $0.79 million in government grants, and spend about $0.13 million on fund-raising (10.6% of donations). A summary of the data is shown in Table 1. Reliance on private donations and government grants varies across the different types of organizations.

4. Estimation Strategy

To identify the effects in which we are interested, we need to find three relationships. First, we need to know how donations respond to grants, controlling for fund-raising. Second, we need to know how donations respond to changes in fund-raising, controlling for grants. Third, we need to know how fund-raising responds to changes in grants. A challenge for our estimation is the issue of endogeneity. Unobserved characteristics or events could cause donations, grants, and fund-raising to be correlated. For instance, imagine a natural disaster that makes many people homeless. Then we are likely to see both giving and grants increase as a result, which would lead to positive biases in the effects of grants on donations. Fund-raising will also be affected by such events, but the potential bias is less clear. If, in this example, the need becomes greater then fund-raising may rise, but if people become more generous when asked for a donation then fund-raising may actually fall. It will be important, therefore, to find instruments for both fund-raising and grants.

Ideally, we would estimate the following equations directly:

$$Donations_{ict} = \alpha_i + \lambda_t + A \cdot GovtGrants_{ict} + B \cdot Fundraising_{ict} + Controls_{ict}\omega + \varepsilon_{ict} \quad (1)$$

$$Fundraising_{ict} = \rho_i + \varphi_t + C \cdot GovtGrants_{ict} + Controls_{ict}\kappa + \eta_{ict} \quad (2)$$

In the first equation, private donations (of charity i in county c at time t) are regressed on government grants, fund-raising costs, firm and year fixed effects, and a set of firm, county, and

state level controls. In this equation, we are concerned about the endogeneity of government grants, the relationship between fund-raising expenditures (equation 2) and government grants, and omitted variables that are correlated with private donations and government grants or fund-raising expenditures. This estimation naturally suggests an analysis with three stage least squares, where we estimate a two equation system with fund-raising as a function of grants, and donations as a function of both grants and fund-raising.

Wooldridge (2002) cautions, however, that there are disadvantages to a systems estimation of (1) and (2) above. For a system method to consistently estimate the coefficients, all equations in the system must be properly specified. If this cannot be assured, then 3SLS or GMM will not be consistent and single equation estimation, such as 2SLS is more robust.[12] We therefore opted to take a more conservative approach and rely on a reduced form two stage least squares analysis. We estimate separately the following three equations:

$$Donations_{ict} = \alpha^1_i + \lambda^1_t + A \cdot GovtGrants_{ict} + Controls_{ict}\omega^1 + \varepsilon^1_{ict} \quad (3)$$

$$Donations_{ict} = \alpha^2_i + \lambda^2_t + B \cdot Fundraising_{ict} + Controls_{ict}\omega^2 + \varepsilon^2_{ict} \quad (4)$$

$$Fundraising_{ict} = \rho_i + \varphi_t + C \cdot GovtGrants_{ict} + Controls_{ict}\kappa + \eta_{ict} \quad (5)$$

Because equation (1) has been broken into two estimations, we need instruments that explain government funding and instruments that explain fund-raising expenditures. Our approach is similar to that of Gruber (2004) and Gruber and Hungerman (2007). We can use our estimates from these three regressions to derive our desired predictions. The coefficient *A* on government grants from the estimation of equation (3) will tell us the total crowd out, combining

[12]Wooldridge (2002, p. 222) states, "When estimating a simultaneous equations system, it is important to remember the pros and cons of full system estimation. If all equations are correctly specified, system procedures are asymptotically more efficient than a single-equation procedures such as 2SLS. But single-equation methods are more robust. If interest lies, say, in the first equation of a system, 2SLS is consistent and asymptotically normal provided the first equation is correctly specified and the instruments are exogenous. However, if one equation in a system is misspecified, the 3SLS or GMM estimates of all the parameters are generally inconsistent."

both the direct and indirect effects. The coefficient *B* on fund-raising expenditures from the estimation of equation (4) will tell us the productivity of each dollar of fund-raising. Finally, the coefficient *C* on government grants from the estimation of equation (5) will tell us how much fund-raising falls when grants are received.

We can use these coefficients to decompose the total effect, *A*. An additional dollar of grants will reduce fund-raising by *C* dollars, and each dollar of decreased fund-raising results in *B* dollars less in giving. Hence, the indirect change in donations from reduced fund-raising is *B*C*, which then means the direct crowding out effect is *A - B*C.*

Notice that if fund-raising falls, then the charity also conserves some money that would have gone to fund-raising, and can spend this on services. Thus, if we want to discuss crowding out of *spending* rather than giving, we would call the total effect *A - C,* and the indirect effect *B*C - C.* The direct effect stays the same, *A - B*C.*

4.1 Instruments for Government Grants

We need instruments that are correlated with government grants, but not with private donations or fund-raising expenditures. Our instruments rely on election information on races for U.S. Congress. For each firm we smoothed the data so that they are affiliated with one county over the sample period.[13] For each county, we identify all members of Congress that are affiliated with the county. Since elections occur every two years, we get some time variation. We also get variation due to redistricting after both the 1990 and 2000 censuses.

We look to these political variables for instruments because the power of a politician in Congress may be important in bringing federal dollars to the district, including grants to

[13] For most of the organizations, the organization is located in the same country throughout the sampler period. For those organizations that had different county identifications, we smoothed the data through a process that included hand checking, most frequent county identified, and most recent county identification. Detailed information on the smoothing is available from the authors.

charitable organizations. The power of the representative will be a function of their tenure, whether their party is in control, and any advantage they enjoy from political fund-raising. These factors are unlikely to be correlated with private donations and fund-raising expenditures.

For each congressional district we created a measure that reflects the number of years in which the member has been representing the district. This represents the potential "power" of a congressional member based on his/her seniority. For each county we identify the total power of all of the representatives that represent any part of the county. We also compute the power of the representatives based on the member's political party affiliation. Within each state, we have identified the political party with the most representatives. With this information we can construct a measure that reflects the tenure of the representatives based on whether the political party that is in control of the state caucus. We assign a negative value to the representatives that are affiliated with political parties not in control and a positive value to the representatives that are affiliated with the control state caucus party. We then summed these measures for each county.

Thus, we use as instruments for the government grants:

- Power of the members of congress based on tenure in congress. When a new member of Congress is elected, power equals 1. For each year in which the member remains in Congress the power increases by 1. For each county we sum the "power" of the members representing the county. This means power will be a high value in areas with longstanding members and in areas with several longstanding members. Note, we will also include an organization-specific fixed effect to help control for differences across counties that are associated with some counties having more representatives than other counties.

- The power measure based on state political control. Within a state, we can identify the party affiliation of the majority of the representatives in the state. If a majority of the delegation is from one party, then these members will have greater power to affect legislation beneficial to their state and districts. Hence we combine measures of power based on tenure in congress with whether the member is from the state majority party. In this way we create a power measure that can be quite negative (members representing the

county are longstanding members but they are in the minority of the state caucus) or quite positive (longstanding members that are affiliated with a state caucus majority).

Table 2 reports the summary statistics for these instruments. Column 1 of Table 3 reports the coefficients from the instruments on the first stage regression. The measure that reflects the power of the members representing the country in which the charity is located is positive, suggesting that an additional year of power results in $13,000 more government grants. In contrast, an increase in power based on state political control results in a decline in government grants to the charity. The F-statistic of the joint significance of the instruments is 7.08.

4.2 Instruments for Fund-raising Expenditures

Finding instruments that explain fund-raising but do not directly explain either the propensity of individuals to donate or government grants is challenging. Our approach was to identify a set of measures that reflects the financial security of the organization. Arguably, if an organization is facing increasing expenses, it will change its fundraising efforts in response. We rely on measures of each charitable organization that are reported on the IRS 990 forms. These are the instruments we considered:

- Total liabilities of the organization.
- Total Occupancy expenses. This measure reflects expenses for office space, heating, and other utilities (excluding telephone).
- Total Interest payments. This measure reflects all payments of interest for debt, excluding mortgage interest expenses that are reported as occupancy expenses.

Table 2 provides means and standard deviations of the instruments used in the analysis. We found that any combination of two of these instruments produced similar results. We also got similar results in the second stage regression if we used all three instruments. The F-statistic from the joint significance of the instruments in the first stage regression is lower if we use all three instruments. We, therefore, report in column 2 of Table 3 the results when we use two of

the measures: total liabilities and total occupancy expenses.[14] An increase in both expenses results in an increase in fund-raising expenditures. The F-statistic for the joint significance of the instruments is 7.32.[15]

The reader may be concerned that the financial health of a charity may also affect private donations and/or government grants. We believe, however, that contemporaneous information on the financial well being of a firm at the time a donation or grant is being given is difficult to ascertain. Donors are likely to only perceive the general well-being of the charity. This perception is controlled for through the use of the organization fixed effects. In contrast, the charitable organization is likely to be keenly aware of its finances and, thus, should be expected to modify it fundraising efforts to deal with changes in its financial health. From a statistical perspective, as discussed below, we ran various tests for over, under, and weak identification of the instruments and estimated the second stage regression using 2SLS, GMM, and LIML specifications.

4.3 Other Independent Variables

Means and standard deviations of the exogenous variables used in the analysis are shown in Table 2. We use several state level variables to control for regional variation in tastes, such as per capita income, population, controls for the age distribution of the residents, political party affiliation of the state governor, and the federal transfer dollars received for health and income maintenance. In addition, our regressions also include year dummies and organization fixed effects.

5. Estimation

[14] Results that use the different combinations of instruments are available from the authors.

The results of our analysis are reported in Table 4. Coefficients significant at $p < 0.05$ are in bold, and at $p < 0.10$ are in bold and italics. For the IV specifications, we report the statistics for the test of overidentifying restrictions for the instruments. While we do not report them in the table, for all of the IV specifications, the Cragg-Donald F-statistics are greater than the Stock-Yogo weak identification test critical values and the Anderson canonical correlations likelihood ratio tests are satisfied.

Effects from a change in government grants on private donations (A): Panel A

The results under an OLS specification are reported in column 1.[16] We can see clear evidence here of the endogeneity bias discussed earlier. In Panel A, government grants would appear to crowd-in charitable contributions, which indicates a clear positive bias in this coefficient, as predicted. In columns 2 through 4 we report the results under three types of instrumental variables strategies: two stage least squares (column 2), generalized method of moments (column 3), and limited information maximum likelihood (column 4).[17] In all three estimations, the over-identification test is satisfied. Overall, the estimates suggest the total crowd-out of private donations is approximately 56 percent. In column 2 we report the confidence region based on the conditional likelihood ratio approach developed by Moreira (2003) and Andrews, Moreira, and Stock (2005).[18] These estimates are consistent with Payne (1998), whose estimates ranged from 50 to 78 percent.

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[15] We also explored the use of the measure that reports the total compensation of the organization's employees. Used in conjunction with liabilities or interest payments, the instruments are jointly significant and produce similar results but slightly weaker with respect to the F-statistic for the instruments in the first stage regression.

[16] For all of the specifications we report robust standard errors. Stock and Watson (2006) suggest that robust standard errors may be preferable to clustered standard errors under a fixed-effects estimation when the number of firms is large and the number of observations per firm is short.

[17] The 2SLS, GMM, and LIML estimations were performed using the xtivreg2 program developed by Schaffer (2007).

[18] To develop the confidence interval for the coefficients, the data were first demeaned to removed organizational fixed effects.

Effect of fund-raising expenditures on private donations (B): Panel B

In the instrumental variable regressions, the over-identification test is clearly satisfied for all three estimations. We find coefficients ranging from 4.3 to 4.5, indicating that, on average, a marginal dollar spent on fund-raising yields over four dollars in new donations. This shows that charities are not net-revenue maximizers, but rather leave considerable slack in their fund-raising potential. This is similar to observations of Weisbod and Dominguez (1986) who generally find "fund-raising elasticities" of greater than one for the types of charities we consider here. Our estimates are consistent with the notion of Weisbrod (1988, 1998) that charities stop once revenue goals are met and do not maximize net revenues. Instead, they appear to be more closely in line with the benchmarks of best practices promulgated by industry experts and watchdogs.

Effect from a change in government grants on fund-raising expenditures (C): Panel C

In the instrumental variable regressions, the over-identification test is clearly satisfied. The estimates suggest that fund-raising efforts are reduced by between 8 and 9 cents per dollar of government grants received. Again, these estimates are consistent with earlier findings of Andreoni and Payne (2003) who found coefficients of -0.019 to -0.265.

Decomposition of Crowd-Out Effect

In Table 5 we combine our results to separate the total crowd out into the classic direct crowd out and the indirect crowd out due to reduced fund-raising. The top three rows of Table 5 reproduce the essential parts of Table 4 used in our calculations. The middle panel provides examples combining the within-column coefficients to produce a sample of estimates for direct and indirect crowding out of donations. Across the columns that report the results using an instrumental variables strategy, our results suggest that most of the crowd-out is attributable to a

decline in fund-raising. Approximate 68 percent of crowd-out is from reduced fund-raising and 32 percent of crowd-out is due to a decline in donor behavior. Our results support the notion that donors are not completely aware of fluctuations in grants received by the charity.

The results just discussed slightly overstate the problem of crowding out. The reason is that if charities reduce fund-raising, then there is money conserved that can be devoted to charitable services. Hence, we may want to add to the direct crowding the marginal savings in fund-raising expenses. In the notation used in section 4, this means crowd out is $A - C$ rather than simply A. The final three rows of Table 5 illustrate crowding out in this case. Since the change in dollars of fund-raising is small relative to the total crowd out, this approach reduces the indirect crowd out by 6 percentage points, our estimate of indirect crowding to 62 percent of the total.

6. Discussion

In this section we evaluate how our results compare to prior finding and to expectations we might form by looking at the actual practices of charities, and then go in to interpret how our results could shape future discussions of policy toward government grants to charities.

Evaluating the Results

As already noted, our results from Panel *A* in Table 4 are quite similar to finding of Payne (1998), while the results of Panel *C* are consistent with the findings of Andreoni and Payne (2003). The results of Panel *B*, by contrast are unprecedented. How do our estimates of the return to fundraising compare to what we might have expected?

An economist who is trained to look for profit maximization would be troubled to see from Panel *B* that a dollar spent on fundraising yields over four dollars of donations. Indeed, charities appear to leave many prospects unexploited. Is this result reasonable?

First, there is strong reason to believe that fund-raisers are not, in fact, profit (or, more precisely, net revenue) maximizers. We are not the first researchers to be puzzled by this observation. Weisbrod (1988) has also observed that charities do not maximize net revenues and has offered some speculations as to why, suggesting that non-profits are "satisficers" and set fund-raising goals to meet other objectives. In particular, because of the non-profit status of charities, the managers get no direct reward from maximizing revenues and cannot appropriate any of the surplus they might achieve. Moreover, pushing a charity to the envelope reduces the enjoyment of public service that charity managers might seek. Glaeser and Shleifer (2001) present a formal model of these ideas, arguing that firms choose non-profit status (rather than for-profit) in order to provide better quality employment for themselves, which does not necessarily imply a desire for expanding program services or for building fund-raising "empires."

A second reason they may not maximize net revenues is that they receive pressure from donors to keep fund-raising expenses low. For example, a popular guide to fund-raising (Greenfield, 2002) provides "cost-benefit standards and guidelines" for charities. These indicate that, depending on the fund-raising activity, a "mature" fund-raising program should expect 3 to 10 dollars of donations for each dollar spent on fund-raising (Exhibit 13.3, page 499).[19] Likewise, the American Institute of Philanthropy, which provides independent quality ratings of nonprofits, states in its ratings criteria that, "In the AIP's view, $35 or less to raise $100 is reasonable for most charities," indicating a return of about $3 per dollar spent as a *minimum criteria* for proper management.[20] Give.org posts an identical standard. Similarly, the watchdog

[19] They indicate each dollar spent on direct mail should return $4 to $5, on "volunteer-led personal solicitations" and on "capital campaigns"should yield $5 to $10, and on planned giving should earn $3 to $5. See also Greenfield (2002).

[20] See the website for the American Institute of Philanthropy, http://www.charitywatch.org/cirteria.html .

group Charity Navigator considers "fund-raising efficiency" of $2.5 to $7 raised per dollar spent to be acceptable, depending on the type of charity, and reports a median efficiency across all charities of $10 raised per dollar spent.[21] Charities who fail to reach these standards, as a consequence, receive low quality ratings and may see their donations suffer as a result.

One naturally should ask why these industry standards are set at these particular levels. It may be that donors confuse average and marginal costs of fund-raising, and the standards are arbitrary and inefficient.[22] Another possibility is that these standards may be an attempt by the industry to collude on a lower level of fund-raising that protects the industry from "excessive" and wasteful fund-raising that simply shifts donors between charities without "expanding the pie" of donor dollars available. Identifying why the standards are set at this level, while an extremely interesting question for research, is beyond the scope of this study.

Regardless of the possible explanation, these various theories of non-profit governance and observations from industry observers should lead us to expect a value for *C* well above one. The value we measure, around 4.3, is in line with the suggested return and "fund-raising efficiency" promoted by these industry experts and non-profit watchdogs.

What Can be Done to Mitigate Crowding Out?

The main consequence of crowding out is that it greatly reduces impact of the grants to charities. What incentives or restrictions can the government put on its grants that could reduce or eliminate crowding out? Because our results show that the majority of crowding out is due to the actions of the charities themselves, and because fund-raising is still quite productive, the set of alternatives is potentially quite broad.

[21] See the website for Charity Navigator, on the page for their ratings tables, http://www.charitynavigator.org/index.cfm/bay/content.view/catid/2/cpid/48.htm

For example, our results show that, at least for some organizations, if the government adopted a policy that total spending by the charity must rise by 80 percent of the grant amount, charities could meet this goal simply by not altering their fund-raising activities in response to government grants. If, by contrast, the government were to require that spending on program services (and related spending) go up by the full amount of grant, then, according to our estimates, if the charity were to increase fund-raising by $54 for every $1000 in grants received, then they could meet the government objective.[23] Myriad other policies, such as requiring private donations to match a fraction of government donations, are potentially feasible actions to remediate crowding out.

The Relative Efficiency of Fund-Raising.

What would be more efficient: *a*) A $10,000 government grant to a charity that, because of crowding out, raises services of the charity by only $4400; or *b*) An increase in fundraising expenditure of the charity of $1330 that results in a net increase in services of $4400? The answer to this question depends on how the marginal cost of fund-raising compares to marginal cost of public funds, that is, the cost of collecting and spending the $10,000 in tax dollars.

Economists have for many years attempted to measure the cost of collecting taxes. A recent contribution by Snow and Warren (1996) summarizes these. The cost of a dollar varies across studies from $0.01 to $0.31. One study (Ballard and Fullerton, 1992) even reports a

[22] Related to this issue is one that concerns whether we are able to estimate the true marginal effect of fundraising on private donations. The within effect of fundraising on private donations that we measured, may, in some instances reflect a local average effect more so than a marginal effect.

[23] A $1000 grant results in $178 in direct crowding out. With a gross return of 4.3, the net return on fund-raising is 3.3. Hence, to raise $178 this requires $54 = 178/3.3.

negative cost of -0.078.[24] Of those estimates reported in Snow and Warren, the median estimate (by Stuart, 1984) is 0.072.

In our example, let the cost of public funds be *k.* Then we would estimate that the $10,000 grant would cost $10,000*k* but would save $880 in reduced fundraising. The government grant will reduce economic efficiency if $10,000*k* – 880 > 1330, that is, if *k* > 0.221.[25] While the median estimate for *k* is below this critical value, the critical *k* is still well within the range of estimates the cost of public funds in the literature, making it difficult to determine whether crowding is or is not welfare reducing.

7. Conclusion

When a charity receives a government grant there can be two paths that lead to lower donations to the charity. First is direct crowding out of givers. Donors who count their contributions through taxation as part of their total contribution will reduce their voluntary contributions to offset the grant. The second path is by crowding out the fundraisers. If charities find fund-raising a "necessary evil," or fear it may hurt their evaluation from charity watchdog groups, then a government grant will allow them to redirect efforts from fund-raising to providing charitable services. This means that after getting a grant, charities may simply cut

[24] The deadweight loss of wage taxes can be negative if, for instance, a worker is on the backward bending portion of the labor supply curve.

[25] This last example misses two important aspects of fund-raising however. First, as noted by Rose-Ackerman (1982), in a competitive market for donations, sometimes fundraising results in a shift of dollars from one charity to another rather than generating new dollars for the charitable sector. Suppose that of the $4400 raised, a fraction *f* of these dollars were diverted from other charities. Likewise, of the $5600 that is crowded out by the grant, a fraction *f* gets spent on other charities. Hence, moving to (a) from (b) there is a net increase charitable services of other charities of (5600-4400)*f* = 1200f. Putting this in the equation, then the grant reduces efficiency if $10,000*k* – 880 > 1330 + 1200*f,* that is, if *k* > 0.221 + 0.012*f.* Second, we need to add the average cost across all charities of applying for and administering these grants. No scholars to our knowledge have estimates of *f* or of the application and administrative costs of grants, although both of these costs are certainly worthy of study.

back fund-raising. If donors are largely unaware of fluctuations in the grants received by charities, then reductions in fund-raising becomes a sensible explanation for crowding out.

We explore these issues with an unbalanced panel of nearly 3100 charities from 1988 to 2003. These charities represent a number of different types of social welfare organizations. Using instrumental variable techniques, we estimate total crowding is around 56 percent, and that 68 percent of this is the result of reduced fund-raising. A $1000 grant, for instance, reduces donations by $558. If charities had maintained their fund-raising efforts, however, donations would have fallen by only $178. If charities had instead *increased* fund-raising by $54, our estimates show that charities could fully compensate for the crowding out.

Our study reveals that the actions of the charities themselves are responsible for two-thirds of all crowding out. The implication is that there could be many avenues available to a government that wants to remediate crowding out. While there will be variation across charities, our results indicate that, in general, requirements that charities match a fraction of government grants with increases in private donations could be a feasible response to crowding out. Whether such a requirement is welfare enhancing is an open question, however, depending on what is assumed about the marginal cost of raising public funds.

This is, of course, the first study of its kind. As such, additional studies will be needed to establish the robustness of these results. The finding that a significant fraction of crowding out is due to reduced fund-raising by the charities opens up many new avenues for both researchers and policy makers to discover ways to understand and address crowding out.

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Table 1: Distribution of Charities Under Analysis

Type of Organization	# of Firms	# of Observations	Private Donations	Government Grants	Fundraising Expenditures	Revenues From Dues
Human Services	231	1974	$2,915.07	$2,337.80	$507.17	$945.12
			(6536.23)	(6108.31)	(1395.42)	(3029.05)
Kids/Family	916	5139	$800.54	$510.16	$106.62	$266.33
			(2209.26)	(2214.53)	(235.62)	(3736.22)
Poor/Housing/Food	1002	5233	$1,464.67	$457.77	$62.35	$2.23
			(4675.64)	(1392.59)	(153.06)	(23.43)
Other	928	4867	$696.10	$799.46	$80.60	$22.00
			(2707.27)	(2365.73)	(546.92)	(261.85)
Total	3077	17213	$1,215.41	$785.63	$131.74	$194.80
			(3943.28)	(2871.30)	(591.63)	(2307.41)

Note: 1,000s of dollars. Standard deviations reported in parenthesis. All dollars are real (2000 base year)

Table 2: Summary Statistics on Regressors and Instruments

	Mean (1)	Std. Deviation (2)	Minimum (3)	Maximum (4)
State Level Control Measures				
Per Capita Income (/1000)	28.98	(4.11)	$14.31	41.95661
Total Population (/1000)	11993.97	(9589.09)	$490.79	34988.09
% of Population under 18	24.57	(2.82)	$15.59	33.42857
% Population over 65	12.56	(1.76)	$8.53	18.54977
Democratic Governor	0.66	(0.47)		
Government Transfers Under Medicare Program (/1000)	9405.55	(7606.56)	$178.80	28527.08
Government Transfers Under Medicaid Program (/1000)	9464.17	(9431.64)	$129.85	36654.34
Government Transfers for Income Maintenance (/1000)	5370.65	(5703.56)	$107.12	20007.39
Instruments for Government grants (county level measures)				
Power in Congress (State Political Control Over Congressional Representatives)	8.45	(20.13)	-49.00	101
Power in Congress (Time in Congress)	27.51	(28.67)	0.00	160
Instruments for Fundraising Expenditures				
Liabilities (/1000)	1514.24	(7004.75)	-$153.23	246621.4
Total Occupancy Expenses (/1000)	205.53	(759.45)	-$442.52	17003.76
Total Interest Payments	35.89	(230.45)	-$35.38	10894.02

Table 3: Coefficients on Instruments from First Stage Regression

Dependent Variable	Government Grants (1)	Fundraising Expenditures (2)
Power in Congress (based on time in Congress)	**13.061**	
	(4.685)	
Power in Congress based on State Political Control Over Congressional Representatives	**-7.027**	
	(1.966)	
Liabilities		**0.012**
		(0.003)
Total Occupancy Expenses		**0.093**
		(0.040)
F-Test of Instruments	7.08	7.32
(p-value)	(.0002)	(.0007)

Note: all regressions include firm fixed effects, year effects, state level time-varying measures, and firm level time varying measures
Robust standard errors are reported in parentheses. A coefficient in bold is significant at a p-value<.05

Table 4: Analysis of Fundraising and Donor Behavior

	(1)	(2)	(3)	(4)
Panel A: Effects of Government Funding on Private Donations				
Dependent Variable (Private Donations)	OLS	2SLS	GMM	LIML
Government Grants	**0.114**	**-0.558**	**-0.542**	**-0.559**
(Robust Standard Error)	(0.045)	(0.244)	(0.228)	(0.244)
Confidence Interval from Conditional Likelihood Ratio Estimation		-0.887		
		-0.312		
Program Dues Received by Charity	-0.017	-0.021	-0.021	-0.021
(Robust Standard Error)	(0.026)	(0.029)	(0.029)	(0.029)
Overidentification Test for Instruments				
Chi-Square Statistic		0.033	0.033	0.033
(p-value)		(0.856)	(0.856)	(0.857)
Panel B: Effects of Fundraising Expenditures on Private Donations				
Dependent Variable (Private Donations)	OLS	2SLS	GMM	LIML
Fundraising Expenditures	**3.655**	**4.329**	**4.533**	**4.331**
(Robust Standard Error)	(0.338)	(0.997)	(0.920)	(1.001)
Confidence Interval from Conditional Likelihood Ratio Estimation		3.984		
		4.682		
Program Dues Received by Charity	-0.055	-0.061	-0.060	-0.061
(Robust Standard Error)	(0.035)	(0.038)	(0.038)	(0.038)
Overidentification Test for Instruments				
Chi-Square Statistic		0.282	0.282	0.282
(p-value)		(0.595)	(0.595)	(0.595)
Panel C: Effects of Government Funding on Fundraising Expenditures				
Dependent Variable (Private Donations)	OLS	2SLS	GMM	LIML
Government Grants	**0.011**	**-0.088**	**-0.081**	**-0.088**
(Robust Standard Error)	(0.003)	(0.044)	(0.039)	(0.044)
Confidence Interval from Conditional Likelihood Ratio Estimation		-0.134		
		-0.055		
Program Dues Received by Charity	***0.010***	***0.010***	***0.009***	***0.009***
(Robust Standard Error)	(0.006)	(0.005)	(0.005)	(0.005)
Overidentification Test for Instruments				
Chi-Square Statistic		0.106	0.106	0.105
(p-value)		(0.745)	(0.745)	(0.746)

Note: All analyses include a set of time-varying state and/or county level measures, year dummies, and organization fixed effect

Table 5: Total, Direct, and Indirect (due to Fund-raising) Crowding Out

	(1) OLS	(2) 2SLS	(3) GMM	(4) LIML
A : dD/dG = Changed donations by grants	**0.114**	**-0.558**	**-0.542**	**-0.559**
B: dD/dF = Changed donations by f.-r.	**3.655**	**4.329**	**4.533**	**4.331**
C : dF/dG = Changed fund-raising by grants	**0.011**	**-0.088**	**-0.081**	**-0.088**
Crowding out of Donations				
Total Crowd Out = *A*	0.114	-0.558	-0.542	-0.559
Direct Crowd Out = *A - B*C*	0.072	-0.178	-0.176	-0.176
Percent	64%	32%	32%	32%
Indirect Crowd Out = *B*C*	0.041	-0.381	-0.367	-0.382
Percent	36%	68%	68%	68%
Crowding out of Spending (adding back savings from reduced fund-raising).				
Total Crowd Out = *A - C*	0.102	-0.470	-0.461	-0.471
Direct Crowd Out = *A - B*C*	0.072	-0.178	-0.176	-0.176
Percent	71%	38%	38%	37%
Indirect Crowd Out = *B*C - C*	0.030	-0.293	-0.286	-0.294
Percent	29%	62%	62%	63%

Note: Estimates reported in first 3 rows are from Table 4