JOINT CROWD-OUT: WILL CHARITABLE DONORS CUT DONATIONS TO HUMAN SERVICE ORGANIZATIONS WHEN GOVERNMENT INCREASES WELFARE SPENDING?

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ABSTRACT

A sizeable body of research has attempted to examine the interaction between government spending and private giving known as the crowd-out effect. Most researchers report that increases of government spending cause decreases of philanthropic giving to nonprofit organizations. However, few studies have attempted to explore the interaction between government welfare expenditures and private giving to human service organizations even though human service organizations are the most sensitive organizations to the changes of government spending. This study examines the impact of federal government welfare spending on state government spending and charitable giving to human service organizations (known as joint crowd-out effect). Joint crowd-out effect is estimated to probe the relationship because estimated simple crowd-out effects have been criticized with endogeneity and biased coefficients. This study incorporates a 2006 wave of the Center on Philanthropy Panel Study (COPPS) and federal and state public welfare spending from 2005 using a 2005 Census data set. The author explores the total effect of federal government welfare spending on state government expenditures and philanthropic giving to human service organizations.

INTRODUCTION

Financial management is a significant managerial function for nonprofit managers. Particularly, managers in human service organizations should be able to identify the essential relationship among the different types of funding resources and the implications of the relationship for their organizations. Indeed, identifying relationships with government grants and philanthropic giving to human service organizations is important due to a higher dependence on government grants.

According to numerous studies (e.g., Boris, Leon, Roeger & Nikolova, 2010; McMurtry, Netting, and Kettner, as cited in Kettner, 2002; Salamon, 1999), human service organizations have generally developed their funds from some combination of four sources:

1) government appropriations (e.g., direct government funds, contracts and grants, and tax benefits); 2) philanthropic contributions from individuals, corporations, and foundations; 3) service fees from clients; and 4) other resources (e.g., investments and profit-making subsidiaries).

Studies on revenue sources for human service organizations reported more than half of total revenues for human service organizations come from federal, state or local government contracts and grants. The rest of the total budget for human service organizations was accounted for through private philanthropy, service fees, and other income. Boris et al. (2010) reported almost 60% of total budgets for human service organizations came from government funding, 19% came from private giving, 16% came from service fees, and 5% came from other incomes.

When comparing the percentage of government spending between human service organizations and all nonprofits, human service organizations heavily rely on government funding— almost twice as much as for all other type of nonprofits.[i] By comparison, human service organizations are highly vulnerable to impediments in their ability to meet goals and expectations in times of financial turmoil and low government revenues. Therefore, it is critical that human service managers understand the relationship between government spending on public welfare and private giving because more than three-quarters of all revenue for human service organizations comes from either government or philanthropy.

This research addresses the gap in our knowledge about the relationship between government spending and private giving by answering the following questions: what is the effect of total government welfare expenditures—both federal and state government welfare spending— on changes in charitable giving to human service organizations and what is the total effect on both private giving to human service organizations and state welfare expenditures when federal government welfare spending goes up by a dollar?

Crowd-Out Theory

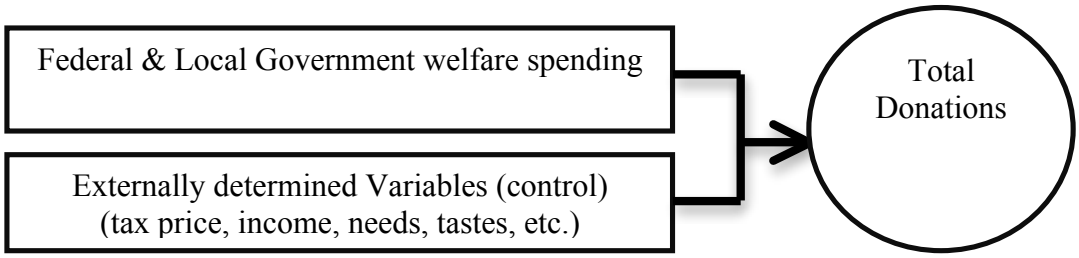
The term "crowding effect" refers to the concurrent changes in private giving to a public good when government funding for the same good is changed either negatively or positively. In responding to an increase in government expenditures (either in the form of direct service provision or through grants and contracts with nonprofit organizations), philanthropic individuals may decrease their donations. Economists refer to this phenomenon as crowd-out. The same effect can occur in the opposite direction. Government spending may escalate private giving to charity because government spending signals the quality of a public good. This phenomenon is identified as crowd-in.

Simple crowd-out model.

Steinberg (1993) posited the estimated negative coefficient of the interaction between government spending and private giving to charity as the "simple" crowd-out: the effect of aggregate government spending on aggregate donations. As illustrated in Figure 1, simple crowd-out estimates the relationship between government spending and charity all else

held constant. The simple crowd-out has been much studied both theoretically and empirically. Tinkelman (2009) found 45 empirical studies were associated with the simple crowd-out including Garrett and Rhine (2007), the most recent study in his research.

FIGURE 1. SIMPLE CROWD-OUT



Source: Steinberg, R. (1989). The theory of crowding out: Donations, local government spending, and the "New Federalism", p.12.

Early theories of donations for public goods, such as Warr (1982), Roberts (1984), and Bernheim (1986), were developed based on the assumption that individuals have complete information on the menu of charities available and express their demands for public goods through their donations (Andreoni & Payne, 2003; Rose-Ackerman, 1986). At one extreme, if donors derive utility solely from the provision of charitable expenditures regardless of the source of funding, Warr (1982), Roberts (1984), and Bernheim (1986) proved that government spending on the public good crowds out donations to the same kind of public good on a dollar-for-dollar basis ("complete crowd-out").

However, a dollar-for-dollar crowd-out model was consistently rejected with statistical confidence by most empirical studies of simple crowd-out including Andreoni (2006), Heutel (2009), and Payne (1998). The studies asserted that a dollar-for-dollar replacement is only guaranteed under strong assumptions: that donors are purely altruistic in their giving and care only about the total provision of a charitable good and that donors are indifferent between giving directly or giving indirectly by being taxed (Andreoni, 2006; Heutel, 2009; Payne, 1998).

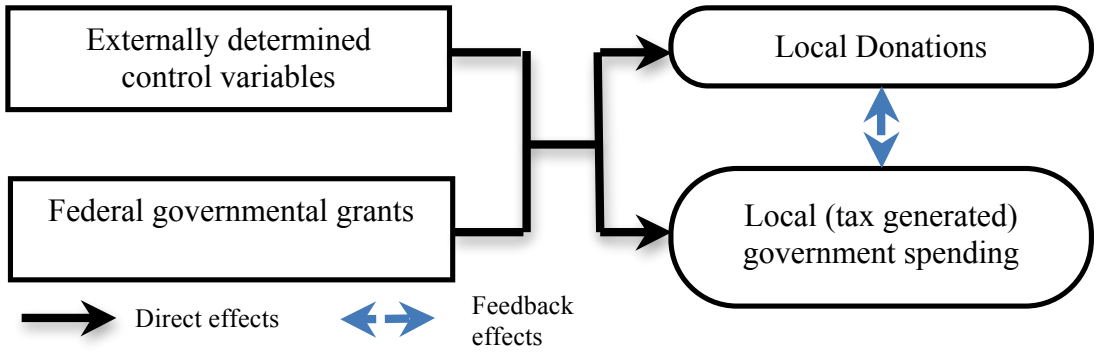
Although simple crowd-out studies estimated a certain degree of crowd-out coefficients between government spending and private giving to charity, researchers indicated limitations on the results. Steinberg (1987), Kingma (1989), and Smith (2006) asserted that if the interaction between government spending and private giving to charity is performed with OLS (Ordinal Least Squares), then the estimated coefficient with the simple crowd-out is biased and inconsistent because the government-spending variable is endogenous.[ii] For example, when people increased their demand for welfare services when Hurricane Katrina hit New Orleans in 2005, we would expect demands for both government and private contributions to be high. Undoubtedly, in response to high demand, private giving and public spending to provide public services should be increased. Thus, the estimated coefficient between government spending and private

giving is more likely to be biased if we do not consider the situation, which is one of endogeneity. Rose-Ackerman (1986) stated two limitations on the assumption for the simple crowd-out model (failure to consider various features of nonprofits and ignoring regulation of government funds) and demonstrated that government spending need not crowd out private donations. She probed the possibility that fixed-sum grants can increase private giving if they are accompanied by regulatory policies that raise the marginal benefits of private contributions.

Joint crowd-out model.

As indicated in Figure 2, joint crowd-out estimates the relationship between government expenditures and private giving while considering exogenous changes when the federal government transfers grants to state governments. Researchers argue that the total of federal government spending on private giving to nonprofit organization should be examined because local governments receive grants from federal government in the form of categorical assistance and general assistance such as revenue sharing. Thus, local government expenditures are precisely sensitive to changes in federal government funds. Simultaneously, local government is sensitive to changes in individual donations. Steinberg (1989) stated that federal government expenditures may be expected to alter both private donations and local government spending. In turn, induced changes in donations in local government expenditures have feedback effects on donations and vice versa (Steinberg, 1987). The total effect of the change of federal government spending on the changes of state government spending and private spending is denoted as joint crowd-out. Joint crowd-out estimates the sum of direct and feedback effects.

FIGURE 2. JOINT CROWD-OUT



Source: Steinberg, R. (1989). The theory of crowding out: Donations, local government spending, and the "New Federalism", p.12.

Steinberg (1987) developed a theoretical treatment of the joint crowd-out model that depends on a decisive voter model in which voters are cognizant of private donors and of simple crowd-out and vote accordingly (Lindsey & Steinberg, 1990). Steinberg (1987, 1989) stated that joint crowd-out can be partial, zero, or negative in political-

economic equilibrium. Joint crowd-out is generally partial, i.e., total expenditures will rise and donations will fall, but to a smaller degree than the total grants. This result is guaranteed if the simple crowding out of donations is partial. When there is simple crowd-in of donations, joint crowd-out is also likely to be partial, but zero or joint crowd-in is also possible. If there is a total simple crowd-out, which is a dollar-for-dollar crowd-out, then either state spending or total donations must be zero. In this case, joint crowd-out is not well defined. The joint crowd-out model is quite complicated. Some of these conclusions can be changed when federal grants are of the matching variety. For example, matching grants reduce the marginal costs of induced local government spending. Thus, a matching grant will be able to purchase a larger service increment. With matching grants, the tendency toward partial joint crowd-out is reduced or reversed and total spending may go up by an amount that exceeds the grants (Steinberg, 1989).

Empirical Results: Crowd-out/-in or neither

Since the late 1970s, researchers have measured the effect of a change in government funding for nonprofit organizations on private donations. The empirical evidence concerning crowd-out between government spending and private giving is somewhat mixed. Studies showed a range of examples including crowd-out, crowd-in, neither, and both crowd-out and –in. However, a majority of the studies indicated that government funding to nonprofit organizations crowds out private donations (e.g., Amos, 1982; Hughes & Luksetich, 1997; Khanna et al., 1995; Kingma, 1989; Payne, 1998; Schiff, 1990; Steinberg, 1985).[iii] Also, at least a partial crowd-out effect is generally reported.

Some studies examined overall government spending and overall charitable giving (e.g., Abrams & Schmitz, 1984; Jones, 1983; Steinberg, 1985, as cited in Horne, 2005). Other studies examined the interaction between government expenditures for specific charitable organizations and philanthropic giving to the organizations (e.g., Andreoni & Payne, 2003; Borgonovi, 2006; Dokko, 2009; Gruber & Hungerman, 2007; Hughes & Luksetich, 1999). Tinkelman (2009) summarizes 45 published or unpublished empirical crowd effect studies including most of the empirical crowd effect studies since the late 1970s. The writer counted 21 studies which probed some degree of crowd-out coefficients; five studies which reported crowd-in coefficients; 11 studies which found both crowd-out and –in depending on the different types of nonprofit organizations or different levels of the government funds; and eight studies which found no statistically significant relationship between government spending and private giving. Particularly, 15 studies out of 45 studies examined crowd effects between government welfare expenditures and private giving to human service organizations as part of their results.

Kingma (1989) found that a dollar of increased government funding crowded out 53 cents of private giving to public radio stations. Dokko (2009) reported 50 to 60 cents of crowd-out for arts organizations. Studies reporting crowd-out interaction between government spending and private giving include Dokko (2009); Gordon (2004); Gruber and Hungerman (2007);

Hungerman (2009); Kingma (1989); and Payne (1998) using 990 data.

Instead of using 990s, some studies report crowd-out effect using individual income tax return information through the National Bureau of Economic Research TAXSIM program which contains itemized deductions by income class (Abrams & Schmitz, 1978, 1984; Amos, 1982; Steinberg, 1990). Those studies noted that a dollar of government funding to nonprofit organizations tends to crowd out private giving of between 4.6 and 46 cents.

Some studies also found crowd-out effects using surveys of individual giving to obtain data on charitable giving including Cuellar (2004), Duncan (1999), Hungerman (2005), Kingma & McClelland (1995), Ribar & Wilhelm (2002), Simmons & Emanuele (2004), Steinberg (1985). The studies measuring individual philanthropic giving by surveys of recipient organizations found that a dollar increase in government expenditure tends to crowd out private giving to nonprofit organizations from a minimum of 2 cents to a maximum of 24 cents.

In contrast, few studies determined the crowd-in effect (Arulampalam, Backus, & Micklewright, 2009; Borgonovi & O'Hare, 2004; Heutel, 2009; Smith, 2007). For example, Borgonovi and O'Hare (2004) addressed crowd-in of government spending for arts organizations such as art museums, theaters, and art institutions using the National Endowment for the Arts (NET) and 990 data from arts organizations. Heutel (2009) reported a statistically significant crowd-in effect of government spending to six types of nonprofit organizations (e.g., food, agriculture, nutrition, and human service charities) using 990s.

Crowd-out effect has been examined for human service organizations. Among 45 empirical studies reviewed by Tinkelman (2009), fifteen studies investigated the connection between government welfare expenditures and private giving to human service organizations as part of the analysis. The studies occasionally reported that state and local government spending crowded in private giving to human service organizations; and the studies found no significant association with federal government spending. For example, Brooks (2000a) discovered one dollar in state government welfare expenditures crowded out two cents in private giving to human service organizations; while federal government welfare spending did not have a statistically significant association with private giving. In contrast, Schiff (1985), as cited in Steinberg, (1989) reported charitable giving to social welfare charities increases when state and local government spending increases. Another study by Schiff (1985) reported that charitable giving to social welfare organizations fell as government cash transfers increased but rose as other government welfare expenditures increased. Heutel (2009) found a crowd-in coefficient interaction between government spending and donations to human service organizations even though the size of the coefficient was the lowest statistically significant crowd-in rate. Andreoni and Payne (2003) also reported a significant positive relationship between government spending and fundraising efforts from human service organizations. Finally, Horne (2005) indicated a positive interaction between government spending and private giving to

the human service sector by almost two cents.

In contrast, some studies reported consistent crowd-out effect for the interaction between government welfare expenditures and charitable giving to human service organizations. Garrett and Rhine (2007) discovered a crowd-out coefficient between giving to welfare agencies and state and local welfare spending though it was not statistically significant. Cuellar (2004) discovered a dollar increase in government welfare expenditures crowded out private contributions to human service organizations by almost five cents. Payne (1998) found government contributions to human service organizations crowded out about 53 cents of private giving to human service organizations. Finally, Steinberg (1985) reported a very small crowd-out effect with only five cents displaced.

For the last empirical study review, a few studies estimated the interaction between government spending and private giving using the joint crowd-out specification (Smith, 2006; Steinberg, 1987, 1990, 1993). Steinberg (1990) indicated that using aggregate government spending would result in biased crowding-out estimates because state and local grants are endogenous and may change in response to a change in federal spending on nonprofits. Measuring the joint crowd-out model, Steinberg (1993) discovered that federal welfare spending had a statistically significant positive effect on state spending on welfare but partially crowded out charitable donations. That is, when state government spending remained constant, federal government spending crowded out 4.6 cents of private giving. But if state government spending had not been allowed to respond to the change in federal grants, donations would have fallen by only 1.4 cents (Steinberg, 1993). Joint crowd-out has a much larger coefficient than simple crowd-out because state spending moves in the same direction as federal grants.

METHODOLOGY

Data Sources

Two separate sources of data were used for this study: the *Center on Philanthropy Panel Study* (COPPS) and U.S. Census datasets. The data on individual philanthropic giving to human service organizations were taken from the COPPS dataset. COPPS is a module of the Panel Study on Income Dynamics (PSID), the nation's first and only ongoing longitudinal study about charitable giving over time.[iv] Steinberg and Wilhelm (2003) highlight that the COPPS dataset contains high-quality contextual data including income, wealth, work hours, wages, health, family structure, and other demographic data. For this study, the 2007 COPPS dataset was used to aggregate charitable giving to human service organizations.[v] The philanthropic questions asked in 2007 were about giving in 2006. Finally, a total of 8,289 households participated in the 2007 wave of the PSID, and 8,110 households answered the philanthropy questions. The family weights that are provided by the PSID research team at the University of Michigan to yield nationally representative results is used to estimate charitable giving to human service organizations. The PSID research team provides the family weight variable because of the oversampling issue. In this study, the family weight variable is

applied in the regression analysis.[vi]

For estimating the total amount of charitable giving to human service organizations, the estimated dollar amount of philanthropic giving to human service organizations is listed in dollars per capita to examine the joint crowd-out effects. To estimate the per capita dollar amount of charitable giving to human service organizations, the estimated total amount of charitable giving to human service organizations was divided by the total number of family members per household.[vii] In addition, the estimated per capita dollar amount of charitable donations to human service organizations was adjusted for inflation in order to estimate the size of the coefficient of joint crowd-out effect in constant dollars using the CPI to adjust for inflation.

The data on federal and state government welfare expenditures in FY 2005 were taken from various sources of U.S. Census datasets. First of all, the federal expenditures on public welfare in 2005 were taken from the U.S. Department of Commerce, Bureau of the Census. The data were released in February 2007.[viii] The state and local government expenditures on public welfare were taken from the U.S. Census database that was generated by the Public Policy Institute (PPI). The PPI provided state and local per-capita public welfare spending in 2005 that was generated based on Census Bureau State and Local Government Finances.[ix] Both federal government funds for state public welfare programs and the state and local government expenditures for public welfare were estimated in dollars per capita. Additionally, state levels of socio-economic characteristics were taken from the U.S. Census database as well.

Conceptual Definitions of Key Variables

In this study, charitable giving to human service organizations was identified as giving to people in need and giving to youth and family organizations. The Panel Study Income Dynamic (PSID, 2010) defines philanthropic giving to people in need as charitable giving to organizations that help people in need of food, shelter or other basic necessities. Giving to youth and family organizations is defined as donating to organizations that provide youth or family services (e.g. scouting, boys' and girls' clubs, Big Brothers and Big Sisters, foster care, or family counseling). Based on these conceptual definitions of charitable giving to human service organizations, the total amount of giving to human service organizations was estimated by the sum of these two types of giving: giving to organizations for people in need and giving to youth and family organizations.

The conceptual definition of government welfare expenditures was identified as the federal or state/ local government expenditures for public welfare including federal assistance programs, cash assistance programs, and other public aid programs. According to the Government Finance and Employment Classification Manual (U.S. Census, 1/12/2012), public welfare expenditures include the following: Supplemental Security Income (SSI), Temporary Assistance for Needy Families (TANF), Medical Assistance Program (Medicaid), food stamps, and other public aid expenditures.

Econometric Specification

The joint crowd-out estimation, outlined by Steinberg (1987), has been presented recently in Cuellar (2004) and Smith (2006). In the Steinberg model (1987), the joint crowd-out model was developed based on the assumption that federal government transfers to state governments are exogenous. The exogenous change in federal government spending would lead to changes in state government expenditures (simple government crowd-out). The exogenous change in federal government spending also leads to changes in donations in the state (simple donation crowd-out). In turn, state government spending responds to induce changes in donations, and the combined effect of these two factors on state government spending is called joint government crowd-out. That is:

$$\frac{dDON}{dGovFED} = \frac{\partial DON}{\partial GovFED} + \frac{dGovSTATE}{dGovFED} \times \frac{\partial DON}{\partial GovSTATE}$$

Donations respond both to the original federal grant and the induced change in state government spending, and the combined effect is called joint crowd-out of donation. The correct structural form equations are as follows:

$$1.\ DON_{is} = \alpha_1 + \beta_1 GovFed_s + \beta_2 GovSTATE_s + \beta_3 X_s + \beta_4 X_i + \varepsilon_1$$
$$2.\ GovSTATE_s = \alpha_1 + \beta_5 DON_{is} + \beta_6 GovFed_s + \beta_7 X_s + \varepsilon_2$$

Where:

DON_{is} is per person giving in household i in states,

$GovFed_s$ denotes the per capita federal government welfare spending in states in 2005

$GovSTATE_s$ indicates the per capita state government welfare spending in states in 2005,

X_s is all the state level control variables and is a vector as X_i

X_i denotes individual i's socio-demographic characteristics as individual specific control variables

The reduced form of this structural model is:

$$DON_{is} = a_1 + b_1 GovFed_s + b_3 X_s + b_4 X_i + \mu_1$$

$$GovSTATE_s = a_2 + b_2 GovFed_s + b_5 X_s + \mu_2$$

The key identifying restrictions are that the donor cares only about total government spending, and the state government cares only about donations plus federal grants. b_1 identifies joint crowd-out of donations and b_2 identifies joint crowd-out of stage government spending on public welfare. The simple crowd-out coefficient is estimated by the joint crowd-out of donations parameter (b_1) and the joint crowd-out of state government expenditures (b_2). The implied parameter for simple crowd-out of donations is $b_1/(b_2 + 1)$. In this study, the reduced forms were examined in order to estimate the coefficient of joint crowd-out.

Data analysis: Tobit Specification and OLS

To identify the total effects of federal spending changes on state spending and private donations, three relationships were examined. First, the joint crowd-out of donations while controlled and without interruption was estimated. The Tobit

model with robust standard error was attempted to estimate the joint crowd-out of donations. Second, the joint crowd-out coefficient between state spending and federal spending was employed with OLS with robust error. The Tobit model was not attempted for this regression because state and federal government expenditures did not have a censoring problem. Robust error is used because standard error estimates of commonly applied covariance matrix estimation techniques are biased. Finally, the simple crowd-out of donations was estimated using a simple function of the reduced-form coefficients. Steinberg (1993) noted that the coefficient of simple crowd-out of donations could be estimated by the estimated coefficient of joint crowd-out of donations divided by the coefficient of joint crowd-out of government spending plus 1. This approach was used by Lindsey and Steinberg (1990), Schiff and Steinberg (1988), and Steinberg (1985, 1993).

RESULTS

Descriptive results

COPPS 2007 shows that 65.5 percent of all U.S. households donated to charity in 2006. Specifically, 35.2 percent of donor households contributed to human service organizations in 2006. For charitable donor households only, the median total amount of giving to charity was $870 (average $2,213). For government expenditures the federal government provided overall $173.7 per capita for public welfare in 2005, according to the U.S. Department of Commerce. The state and local government expenditures on public welfare were an average of $1,237 per capita in 2006.

Crowd-Out Estimations

The joint crowd-out of donations was directly revealed through the coefficient on federal spending in the reduced-form estimation. As shown in Table 1, the result on the joint crowd-out effect of donations suggests that the federal government expenditure on public welfare crowds out $0.051 per capita in private contributions to human service organizations while holding state spending constant in the donations. However, the estimate is not statistically significant. That is, the result indicates that when a dollar per capita of federal government spending on public welfare is increased, charitable donations to human service organizations decreases by 5.1 cents per capita. Although crowd-out is not statistically significantly different from zero, it is significantly different from negative one. Thus, we can confidently reject the hypothesis that joint crowd-out of donations is dollar for dollar. A 99% confidence interval has an upper limit of around 17 cents. Thus, the crowd-in effect cannot be rejected, but whether crowd-out or crowd-in, the magnitude is small. This result of the joint crowd-out is similar to those obtained by other empirical studies. For example, Schiff and Steinberg (1988) reported approximately 3.3 cents of joint crowd-out in social welfare donations. Lindsey and Steinberg (1990) found 4.6 cents of joint crowd-out in donations to social services.

Furthermore, as shown in Table 1, additional estimations for the joint crowd-out of donations was attempted to explore the robustness of the conclusion to alternative measures of donations. The joint crowd-out effect was tested with a new philanthropic giving variable.[x] The results

with extended charitable giving information indicate that a dollar per capita of federal grants to public welfare crowds out 31.3 cents per capita of private donations. However, this result is statistically insignificant (P-value = 0.171).

TABLE 1: JOINT CROWD-OUT RESULTS

Independent Variables		Per Capita Donations	Per Capita State Spending	Per Capita Donations (w/ a new giving)
Federal spending		-0.0515(0.0418)	0.409(0.553)	-0.313(0.0228)
State income		0.001(0.001)	0.019(0.013)	-0.0013(0.010)
State poverty rate		-1.372(1.784)	7.184(20.223)	-13.103(13.091)
State age 65 or more		-2.570(1.641)	32.403(51.667)	-27.862(11.545)
State owner occupied house		-0.521(0.942)	-3.749(2.609)	1.410(7.028)
^Price of giving		-2.152(0.325)***	-	-25.150(3.620)***
Age		0.932(0.260)***	-	0.932(0.260)***
Gender	Male	-16.250(9.439)*		-16.250(9.439)*
Education level	Some college	21.359(6.538)***	-	21.359(6.538)***
	College graduate	37.238(7.713)***	-	37.238(7.713)***
	Graduate	52.346(13.367)***	-	52.346(13.367)***
Ethnicity	Black	-12.175(9.015)	-	-12.175(9.015)
	Native American	30.006(29.317)	-	30.006(29.317)
	Asian	-82.219(22.471)***	-	-82.219(22.471)***
	Hispanic	-50.888(12.156)***	-	-50.888(12.156)***
	Others	9.176(19.446)	-	9.176(19.446)
Marital Status	Never married	-48.835(9.914)***	-	-48.835(9.914)***
	Widowed	-20.615(16.234)	-	-20.615(16.234)
	Divorced	-18.628(10.001)*	-	-18.628(10.001)*
	Separated	-41.047(19.576)**	-	-41.047(19.576)**
Religion	Catholic	9.585(15.562)	-	9.585(15.562)
	Jewish	34.173(23.850)	-	34.173(23.850)
	Protestant	8.680(14.729)	-	8.680(14.729)
	Non-Christian	33.494(25.099)	-	33.494(25.099)
	Orthodox	-3.502(39.287)	-	-3.502(39.287)
Employment status	Unemployed	-12.021(15.309)	-	-12.021(15.309)
	Retired	0.724(9.700)	-	0.724(9.700)
	Disabled	-28.455(16.108)*	-	-28.455(16.108)*
	Others	9.852(9.698)	-	9.852(9.698)
Health condition	Good	-3.187(6.349)	-	-3.187(6.349)
	Fair	-28.717(10.995)**	-	-28.717(10.995)**
	Poor	-8.401(13.069)	-	-8.401(13.069)
Number of Kids		2.372(3.086)	-	2.372(3.086)
Wealth with no house		6.162(3.504)*	-	6.162(3.504)*
Income		0.0002(0.000)**	-	0.0002(0.000)**
Total sample		6,629	50	6,629

- Marginal effect with numeric derivatives and integrals (dydx) were estimated, except the price of giving. The coefficient for the price of giving is elastic.
- Delta method standard errors are in parenthesis.
- The coefficients of per capita donations are estimated by Tobit. The coefficients of per capita state spending are estimated by OLS. The estimated coefficients are the estimated average marginal effect with respect to observable donations.

- The reported coefficients are the average incremental effect on observable giving relative to the excluded category.
- Stacked regression was estimated with extended giving variable to HSOs, including needy giving, youth and family giving, religious giving, and combination giving.
-Percentage of each socio-demographic variable was estimated after weighted with family weight 2007 variable. Also, the responding households who did not respond on philanthropic section were excluded to estimate the socio-demographic characteristics and philanthropic behavior.

***P<0.001, **P<0.05, * P<0.10

The joint crowd-out effects of federal government expenditures on state and local level spending on public welfare (joint crowd-out of government spending) is revealed by the coefficient on federal spending in the reduced-form state spending equation. The coefficient of joint crowd-out of government spending is estimated while subtracting 1 from the coefficient in the state spending equation to avoid double counting. The results are presented in Table 2. The estimated coefficient of joint crowd-out of government spending is 0.409, which is the coefficient with total state government spending. In order to avoid double counting, the coefficient of joint crowd-out of government spending subtracted 1 from the coefficient— the former is 0.409 – 1 which is (-0.591). Therefore, the result of the OLS regression suggests that federal government expenditure on public welfare crowds out 59.1 cents per capita in total state government spending on public welfare. However, as is true for the joint crowd-out of government spending, the estimate is not statistically significant. When federal government spending on public welfare is increased by one dollar, state government expenditures on public welfare would decrease by approximately 59.1 cents per capita. However, this result is statistically insignificant.[xi]

TABLE 2. JOINT CROWD-OUT OF STATE SPENDING (INCLUDING FIXED EFFECTS PANEL ESTIMATOR)

Independent Variables	OLS Analysis	Fixed-Effects
Federal spending	0.409(0.553)	0.083(0.772)
State income	0.0186(0.013)	0.059(0.013)
State poverty rate	7.184(20.223)	14.065(33.010)
State age 65 or more	32.403(51.667)	-1.126(231.83)
State owner occupied house	-3.749(2.610)	-21.141(31.647)
Total sample	50	100

- Dollar amount was estimated in a dollar per-capita.
- Standard errors are in parenthesis.
- The state government spending is total state government spending on public welfare.

Additionally, the joint crowd-out of state spending is estimated with additional government expenditures. With only 50 observations for this dependent variable, it is not surprising that the covariates are generally insignificant. To see the effect of sample size on estimates, the information of government expenditures on public welfare in 2003 was added. First, the stacked regression was examined while

adding more government spending observations to the data because it is more robust to measurement error bias with more samples. Then a fixed-effect panel estimator was attempted to estimate the joint crowd-out of government spending. The fixed-effect panel estimator is usually more persuasive than OLS for panel data because it is more robust to exclude "omitted variable bias." As shown in Table 2, the result of the fixed-effects estimator indicates a smaller coefficient of crowd-out effect, but was statistically insignificant (59.1 cents with OLS vs. 91.7 cents with fixed-effects).[xii]

The simple crowd-out of donations was estimated in this study after inferring the parameters from the reduced-form estimates for the joint crowd-out of donations and the joint crowd-out of government spending. According to Steinberg (1993), under the identifying assumption that simple crowding out of donations by federal grants is equal to simple crowding out of donations by state government expenditures, the parameter of simple crowd-out can be identified as quotients of reduced-form parameters.[xiii]

The result of simple donations crowd-out suggested that government expenditures on public welfare crowded out approximately 3.56 cents per capita of private charity to human service organizations. That is, if state spending had not been allowed to respond to the change in federal grants, private donations to human service organizations would have fallen by only 3.65 cents per capita. In addition, the approximate 95% confidence interval for simple crowd-out ranges from 44.68 cents to crowd-in 9.99 cent. The results can confidently reject the hypothesis of Warr (1982) and Roberts (1984) that simple crowd-out is 100 percent.[xiv]

The simple crowd-out effects between government spending and private giving have been probed in previous studies. Amos (1985), Schiff (1990), Steinberg (1985), and Payne (1998) reported a crowd-out coefficient given federal levels of expenditures to social welfare. In detail, Amos (1982) found a crowd-out of 46 cents in private donations. Payne (1998) discovered crowd-out of 53 cents, while Schiff (1990) found crowd-out of 40 cents. Steinberg (1985) found very small crowd-out effects (only 5 cents). The estimates from Amos, Payne, Schiff, and Steinberg's study were statistically significant. Other studies, such as Lindsey and Steinberg (1990) and Reece (1979), discovered the crowd-out effect with federal spending on social welfare, but the estimations were statistically insignificant. Overall, Brooks (2005) summarized that empirical crowd-out studies reported an average of $0.36 crowd-out in donations to social welfare organizations. Compared to empirical studies, in this study a much smaller joint crowd-out effect was observed with only 5.1 cents displaced much like the results of Steinberg (1985).

In addition, compared to the size of simple crowd-out and the joint crowd-out, the size of the simple crowd-out of donations was smaller than the joint crowd-out (3.6 cents per capita vs. 5.1 cents per capita). The joint crowd-out is larger than simple crowd-out because state spending moves in the same direction as federal grants. That is when federal spending increases, state spending increases because the state receives more grants from the federal government. Lindsey and Steinberg (1990)

found simple crowd-out of 1.4 cents and joint crowd-out of 4.6 cents. Based on both studies, it is clear that the estimated coefficient of joint crowd-out is larger than the estimated coefficient of simple crowd-out.

Conclusion

Crowd-out estimates tell us how effective government expenditures on public welfare are in raising total expenditures on public services. Specifically, the joint crowd-out results address the more detailed impact of government spending on public welfare on state and private donations to human service organizations. Empirically, crowd-out effects have been probed to address the relationship between government involvement and private participation to provide social services under the classic crowding-out hypothesis. Under the classic crowd-out hypothesis, the government believes that government participation in providing public services crowds out private participation. That is, when a charitable organization receives government funding, philanthropic donations to the organizations could fall because donors let the given tax funds substitute for their own donations. This hypothesis has been supported by empirical studies. Although the crowd-out effects are empirically proven as a statistical truth, the relationship has been generally examined with philanthropic giving to different types of nonprofit organizations rather than human service organizations. In addition, the estimated coefficients from empirical studies have been repeatedly criticized by researchers due to biased coefficients and limited information about philanthropic giving to nonprofit organizations. A few studies have probed the crowd-out hypothesis focused on human service organizations without the identified limitations. This study provided unique insight about the crowd-out effect for human service organizations using a superior data set for individual giving to identify both simple and joint crowd-out effects.

As addressed in the results, three conclusions seem apparent. First, the joint crowd-out of donations, if it exists, is small in magnitude, with a point estimate of 5.1 cents per capita in donations to human service organizations. The estimated simple crowd-out effect was even smaller than the estimated joint crowd-out effect.

In summary, several implications follow from the results. The findings relating to the joint crowd-out effect lend support to the joint crowd-out theory (Lindsey & Steinberg, 1990; Schiff & Steinberg, 1988; Steinberg, 1983). Steinberg (1988) and Lindsey and Steinberg (1990) indicated that the estimated coefficients with the simple crowd-out could be smaller than the coefficients with the joint crowd-out. The results in this study lend support to the theory of joint crowd-out effects. Thus, the joint crowd-out could more accurately estimate the relationship between

government spending and private giving. Based on the overall effects of federal government spending on private giving to provide social welfare services, the positive effects of government involvement to provide public services may be supported by the results from this study. Rose-Ackerman (1984) asserted that government spending to charity need not reduce total support for providing public services and may even lead to increased private giving. The results in this study demonstrate that overall government efforts to fund public services do not have a serious negative impact on private funding for social services to people in need even if the crowd-out effect does occur. This finding is extremely useful to social welfare policymakers or social work administrators charged with designing public welfare programs or enforcing public policies for people in need.

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i. Salamon (1999) reported that almost 37 percent of total funding for nonprofit organizations in America came from service fees, 30 percent came from government, 22 percent came from private contributions including corporate and foundation giving, and 11 percent came from other income. According to the National Council of Nonprofits (2010), 27.4 percent of total revenues for all nonprofits came from government funding in 2008.

ii. Endogeneity arises if there is a correlation between the parameter and the error term in the estimated regression equation. If the estimated coefficient β is associated with ε, the estimated coefficient is biased and inconsistent. Endogeneity exists when the model includes an endogenous explanatory variable (Chenhall & Moers, 2007).

iii. Brooks (2003) stated these seven economic studies were the major studies which conducted crowd-out effects from 1982 to 1998.

iv. PSID is fielded by the Institute for Social Research at the University of Michigan and has surveyed the dynamic and interactive aspects of family economic, demographic, health, and philanthropy from the nationally representative same households since 1968. In 2001, Indiana University added the philanthropic component in the PSID survey and has been accumulating data on philanthropic giving behavior every two years. The COPPS contains not only comprehensive, nationally representative data on charitable giving, but also solely encloses panel data on giving in the United States.

v. The COPPS 2007 data is available at http://www.philanthropy.iupui.edu/Research/copps/ #dataSets. This data set was generated from the raw data with some cleaning explained in the user's manual at the same site.

vi. The oversampling issue is not discussed in this paper and weights get at additional things, like attrition bias, as well as the initial oversample in the SEO portion of the data.

vii. The total number of family size was generated as follows: One person was added to the total number of children who are living within a household that is single, widowed, or separated. Two persons were added to the total number of children when a household was married in COPPS 2007.

viii. The federal government expenditures to state government for public welfare were

retrieved from the Knowledge Center at the Council of States Governments (http://knowledgecenter.csg.org/drupal/system/files/2.3.pdf).

x. The State welfare government expenditures were retrieved from the Public Policy Institute of New York State, Inc. (http://www.ppinys.org/reports/jtf/welfarespending.htm).

xi. A new philanthropic giving to human service organizations for the stacked regression was generated with the charitable giving not only to people in need and youth and family giving, but also to religious organizations (the organizations for religious and combination giving (like organizations for multi-functional purposes such as Catholic Charities and the United Way).

xii. The estimated coefficient of joint crowd-out of government spending was inconsistent with flypaper effect which reports that own-financed state spending goes up when federal grant goes up. However, the result was not significant because the estimated joint crowd-out of government spending was statistically insignificant.

xiii. The former with fixed-effect panel estimator was 0.083 – 1 = -0.917.

xiv. In particular, the implied simple crowd-out of donations parameter is $b_1/(b_2 + 1)$.

xv. Because the simple crowd-out parameter is the ratio of two estimated asymptotically normal coefficient. It is Cauchy-distributed, and the t-distribution gives the wrong significance levels. Rather than report the exact significance level, which required approximation, I construct an empirical confidence interval from the bounds of the 95% confidence intervals for the joint crowd-out of donations and state spending