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INSTITUTIONAL ART FUNDING:
THE INTERACTION OF GOVERNMENTAL AND PRIVATE DONATION

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Abstract

This thesis explores the interaction between private and governmental funding for non-profit arts institutions, with a specific focus on determining whether or not a "crowding effect" occurs. Using data pulled from institutional tax-returns, publicly accessible in a database provided by the Economic Research Institute, a number of regressions were implemented to narrow in on the nature of the relationship between private and public donated revenue streams. Before addressing any original empirical work, this thesis discusses the nature of charitable contributions, and previously established crowding effects. This thesis draws conclusions that when atypically large sums of money are awarded to an institution via a governmental contribution, private funding sees a significant increase in the subsequent period. This implies a sort of delayed crowding-in effect, wherein, given ample time to respond, private funding will respond positively to positive shocks in public funding. This finding is then extended to draw implications for institutional operations, how arts institutions should structure their fundraising efforts.

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1. Introduction

The question to be addressed in this paper is essentially one of public finance: an examination of funding for artistic institutions across the United States. This includes museums, symphonies, theatres et al. As both a public good, and a luxury, institutional arts differ from service sector non-profits in that the funding is often thought to be much more volatile. For this reason, it is of interest to look for trends in the different funding streams that artistic institutions utilize i.e. government, foundation, and individual. Compelling results would inform fundraising efforts on the part of these institutions.

Honing this topic into a question of both narrow scope and economic nature, the ultimate goal of this paper is to identify interactive trends between these funding streams. Specifically, the notion of governmental crowding out/crowding in of private donations is of interest. By examining the fluctuation of government and private donation totals for individual companies, I will attempt to quantify how one affects the other.

The interest level of this study is increased by the uniqueness of the arts as an industry. As previously mentioned, both a partial public good and a luxury, it is anticipated that there may be discrepancies in funding trends between artistic institutions, and non-profits in general. While extensive research on the crowding out effect has been done on charitable giving at large, very little has been done specifically in the arts sector. In the context of precedential research, I will ideally be able to determine areas of uniqueness within funding for the arts as a sector.

This paper will begin with some contextual information about funding for the arts, and the nature of charitable giving and government crowding effects. This will be followed by a literature review of the existing research that examines governmental crowding effects in the arts and culture sector. This will be followed by empirical research, utilizing revenue/funding panel

data from the past decade for a pool of 15 institutions. This data will be regressed in a number of ways, with private funding examined as the dependent variable. Upon establishing the crowding effect (if there is one) and its magnitude, I will discuss the implications for arts institutions and natural next steps in further research.

2. Context

2.1 Funding for the Arts

The term "artistic institution" is somewhat ambiguous and at times confusing. For the purpose of this paper and the sample construction within, we will view "artistic institutions" as organizations purposed with presentation and/or preservation of the visual, musical or performing arts (ie: orchestral music, opera, theatre, ballet, painting, sculpture, etc.). With this mission often come philanthropic endeavors including educational outreach, financial support for new artists, and accessibility inititiatives; this is particularly true of large institutions. However, it is not the philanthropy that has driven arts into the nonprofit sector, but the low commercial viability, hence the need for contributed funding. This low commercial viability is rooted in extremely high overhead (especially in the performing arts) and low profit margins. Because there is often an inherent mission of making the arts accessible to a wide audience, price of admission tends to be relatively low. This is further highlighted by the notion that when endeavored commercially, the arts bear a hefty price, with tickets to commercial Broadway shows costing upwards of $200 at times. In the past, this has been the rule, not the exception; it is only in the last several decades that the arts have resorted to a nonprofit tax status. For the purpose of establishing context, it is worth looking into why this transition occurred.

Within the arts, the bulk of costs lie within capitalization. It does not cost much to keep a collection of paintings in a museum, but it certainly costs a lot to get them there. Likewise, the marginal cost of an additional performance of a theatrical work is extremely low as compared to the initial capitalization costs of building sets, designing costumes, directing and rehearsing. The result is that if admission is priced close to marginal cost, it is all but impossible to recoup the initial investment via earned revenue. Further, for many organizations, the demand curve for arts

exposure lies below average cost at all points; this means that in some cases, there is no admission price at which total costs may be accommodated. (Hansman, 1984)

The result is that most artistic institutions engage in some degree of price discrimination. For performing arts and musical presentations, this involves higher prices for better seats. For the visual arts, this often includes "suggested" price of admission/donation, so that each person only pays what they are willing in order to enter. However, due to the difficulty of effective price discrimination, organizations often turn to solicitation of financial contributions. This can actually be viewed as an extension of the price discrimination, because in order for a patron to contribute above the cost of admission, they must value the good more highly than it has been priced. This leads to the first major cause of the arts resorting to nonprofit status: this type of donation generally only occurs if the organization is a nonprofit. (Hansman, 1981)

The reason for this coincides with the reason people donate; people contribute as a means of improving the quality of, or increasing the quantity of the art put forth by an organization. Donors can be sure their dollars will have this effect when given to a nonprofit because there are legal stipulations surrounding the distribution of net earnings in such institutions. Net income cannot be allocated to those with control over it (directors, officers, board members) beyond "reasonable compensation." Though this is still a bit nebulous, the translation of a contributed dollar into more or better art is much more direct. (Hansman, 1981)

The second reason the arts have become more and more heavily categorized as nonprofit lies in their nature as public goods; this is, in fact, the basis for governmental funding of the arts. Art brings with it aesthetic and emotional quality, providing catharsis to both the creator and the viewer. It shapes the culture and experience of those who receive exposure and those who do not. Additionally, artistic institutions offer increased levels of caché and tourism. However, it should

be noted that those who derive the most benefit from the arts are those of the highest income class, often the same people who donate privately to the arts. Nevertheless, with obvious benefits to some and subtle benefits to all, it is not surprising that there is allocation in the federal budget for funding the arts; the only way to access these funds is through a nonprofit status. (Brooks, 2001)

To that end, one point of intrigue is that the level of public funding for the arts in the U.S. is exceptionally low; so low, in fact, that it forces us to wonder why artistic institutions care about access to it at all. In 1999 the federal budget, via the National Endowment for the Arts (NEA), allocated $98 million towards the arts; less than one one hundredth of a percent of the federal budget. This sum represents $.36 per American in 1999; compare this with Sweden, where roughly $30 per citizen is dedicated to the arts (Brooks, 2001). This should not be misinterpreted as any sort of attack on that level of funding, but rather as an observation that while nearly all artistic institutions vie for public funding, they are competing for a fairly small pool of cash. This almost certainly implies allocation of institutional resources towards the uphill battle of acquiring public funding, which almost certainly represents resources that are NOT being used to tap into the nearly endless stream of private dollars. Thus, it is the mutual exclusion of governmental and private funding, the two main incentives for a nonprofit status, that will almost certainly result in a detectable crowding effect.

2.2 Crowding Effects

Crowding effects are detectable in virtually every firm where both private and public investment occur. This is caused internally due to finite resources in fundraising offices that seek to tap into those two funding streams, as well as externally in reference to the relationship

between government and private dollars outside of the organization. Bruce Kingma asserts that, "The true measure of government crowd-out is the extent to which government funds for a particular public good crowd out private contributions to that good" (Kingma, 1989). Determination of this "extent" feature of crowding is a distinct goal of this paper.

One theory behind crowding effects is a notion of ultrarationality, wherein "the individual would regard the government sector as an extension of himself" (Abrams, 1978). Under this theory, an individual may seize charitable contributions if they feel that funding is being provided governmentally via an increase in taxes. Put simply, if the government gives to a charity, and the government receives its money via taxation, organizations funded by the government are effectively being funded by the individual who will then stop contributing privately. Thus, "his implicit contribution - the sum of his private giving and the amount the government gives 'in his name' – remains the same" (Abrams, 1978). This theory implies either an incredibly high amount of transparency on the government's part, or an incredibly high amount of trust on the individual's part. Because neither of these tends to be the case today, this concept remains more or less strictly theoretical.

A second theory behind crowding out involves interdependent utility functions, wherein as governmental transfers occur, the marginal utility of an additional donation decreases for the organization. If the marginal utility of the additional donation for the recipient is lower, than the marginal utility of giving, for the donor, is also lower. In essence, public funding crowds out private funding because individual givers face a decreased incentive to give. While this seems more feasible than the ultrarational theory, it is still somewhat irrelevant to our study because there is so little governmental funding for the arts; it is unlikely that any individual donor would be under the impression that the need for private funding had been eliminated. (Abrams, 1978)

Because neither of the aforementioned "external theories" seems to hold much weight in the context of the arts, we can assume that any detected crowding in the arts sector can be largely attributed to internal allocation of fundraising resources. In looking at crowding effects for charities at large, the finding seems to be that, since World War II, increases in government subsidy have attenuated private donation efforts (Abrams, 1978). In a 1978 study addressing charitable giving at large, it was determined that substitution and income effects resulted in a crowding-out effect of 28 percent, ie: for every dollar of public funding, 28 cents of private funding are eliminated (Abrams, 1978). However, this finding is accompanied by the caveat that the nature of a study that looks at all charitable donation is extremely aggregative with no regard for variation between different types of charities. Therefore, it behooves us to look at the arts as a removed microcosm. Sectoring out the arts allows us to examine crowding effects that may be unique to them; effects that may be glossed over in broader studies addressing all charitable giving without regard to the heterogeneity of causation amongst differentiated institutions.

3. Literature Review

While much research has been done in the area of governmental crowding effects, there are only a few studies that hone in on the arts and culture sector. Additionally, most studies focus in on one specific niche within the arts, rather than examining the arts at large as their own sector. It is useful to examine these precedential studies to further inform this study, establishing a baseline with which our findings will either conform or contrast.

3.1 American Theatres

In a 2005 study, Francesca Borgonovi examines crowding effects within funding for non-profit theatre companies across the country. What makes her paper unique is that she separates the nature of the crowding effect into two components: one determined by level of public support, and the other determined by changes in level of public support. She hypothesized that "the relationship between the level of total public support and the size of the crowding effect is inverse, with the sign of the effect starting off as positive and ending up as negative. On the contrary changes in public support levels are expected to exert a positive constant effect on private donations." (Borgonovi, 2005)

Borgonovi uses panel data from 82 theatres over a period of five years (1997-2001). The theatres she looked at represented a wide variety of funding levels (200,000 to 58M dollars). Additionally, all of the theatres examined produced only non-musical theatrical productions. This was in an effort to further homogenize the nature of the artistic output. One unique feature of her dataset is that it distinguishes between the three tiers of public funding: local, state and federal. All of the state and federal funding trickled down from the National Endowment for the Arts, with local funding being more differentiated in its sourcing. This allowed her to add yet

another element to her study, and allowed her to propose yet another hypothesis, that "different sources of government spending - federal, state and local - have a different impact on private donations, both in terms of level and in terms of change." (Borgonovi, 2005)

The results of Borgonovi's generalized least squares regression indicated that, as has been established in many studies, the relationship among levels of public and private support takes on an inverted U shape, wherein at low levels of total funding, additional public funding stimulates private donation (crowding in), but at higher levels additional public funding crowds it out. To be exact, at a government subsidy level of $10,550, marginal effect of the level of public support is zero (see Figure 1). Before this point, a positive effect of public support occurs; after, a negative effect occurs. Borgonovi justifies the initial positive effect by postulating that at low levels, governmental support implies a diversified funding base making the organization seem more promising and sustainable. (Borgonovi, 2005)

Figure 1. Predicted levels of private donations as a function of levels of private support
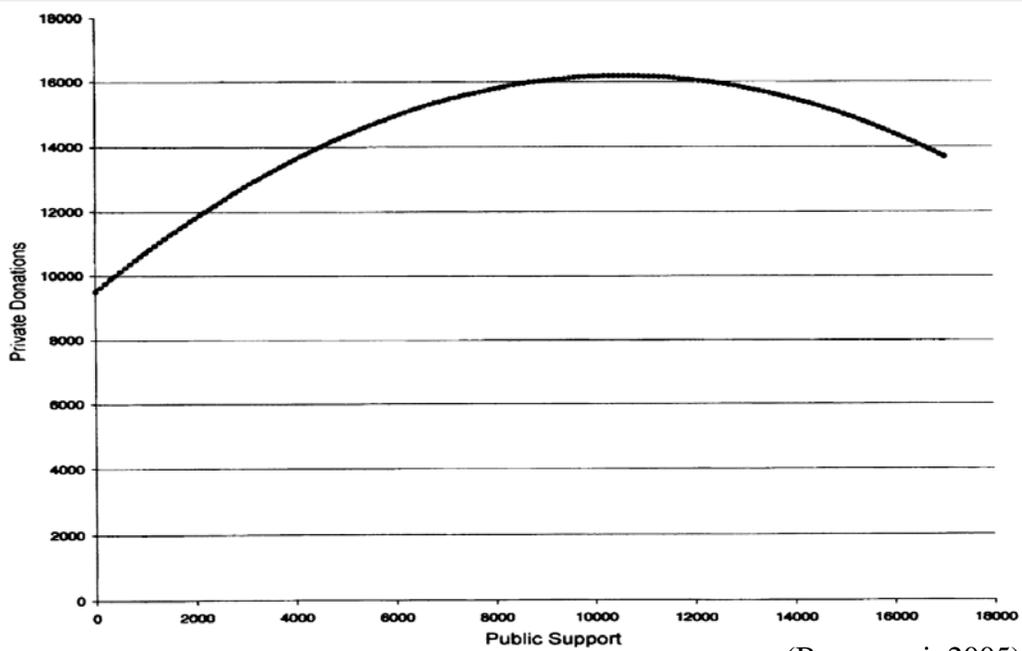
(Borgonovi, 2005)

Borgonovi's results also indicate that the "change effect" was both linear and positive. That is, increases in governmental grants increase private donations (by $.64 per dollar), while decreases in public funding are tied to decreases in private donations. This is significant in that two organizations receiving the same number of dollars from public sources may differ in the amount of private support they receive depending on whether that number represents an increase or decrease in public funding from the previous year. Borgonovi is careful to indicate that at high levels, the crowding effect outweighs the change effect, but there is a definitive correlation between the directional changes of public and private funding. It is tough to make this attribution definitively because of other sources of heterogeneity, such as quality and visibility. However, this notion of a "change effect" provides an interesting new dynamic to governmental crowding effects. (Borgonovi, 2005)

Lastly, Borgonovi determines that the effects of public funding at the federal, local and state levels do in fact differ. As it happens, federal support plays almost no role in the overall crowding effect, as very little funding for the arts comes from the federal level; awards tend to be so small that their effect on private donations is negligible. The effect of state funding was slightly more significant, but funding at the state level tends to be much more inconsistent than at the federal level. The bulk of the crowding effect could be attributed to the local funding. Borgonovi's explanation for this is that "the bulk of local support is on the other hand predominantly awarded as a form of support to the local economy, using systems like hotel tax revenues that are distributed more evenly among recipient organizations and a crowding out effect occurs." (Borgonovi, 2005)

Though the data used in this paper does not lend itself to a disaggregated public support study, it is useful to note that local funding has such a significant effect on private donation. For

this reason, this study will examine artistic institutions located in New York City. This will homogenize the available public support among the institutions, in theory being exactly the same for all of them. In effect, this should allow for the determination of a crowding effect that is more accurate to the institutions examined.

3.2 Public Radio

Another study that informs this one involves funding for public radio. Though not an artistic institution per se, we can consider public radio to be a cultural venue with enough similarities to the arts to retain relevance to the work at hand. In a 2003 paper by Arthur Brooks, we see an analysis of crowding effects using data from 91 public radio stations. What is interesting about Brooks' study is that he examines the effect of both direct and indirect public funding. Direct public funding is money that the government hands to the company. Indirect public funding comes from tax-deductable private donations, which are essentially purposed tax dollars ie: money that the government has no choice in giving to the company. In addition to a standard crowding effect assessment wherein one sees how public funding affects private giving, Brooks also examines the effect of tax increases on private giving. This is done under the reasoning that if taxes go up, people will be more likely to make a tax-deductable, charitable contribution instead of letting the government choose how to allocate their dollars. (Brooks, 2003)

Once again, Brooks unearthed a standard inverted U crowding effect, with government subsidy initially crowding in private investment at $.46 on the dollar. It isn't until government funding reaches a per capita level of 140 that we begin to see a crowding out effect occur. The crowding in effect here is much higher than in other industries, and Brooks attributes that to

stringent grant-matching requirements for government dollars given to public radio stations which more or less guarantee crowding in until extremely high levels. (Brooks, 2003)

Further, Brooks establishes that, indeed, increased tax rates foster private contribution at about $.28 per capita with a tax increase of 1%. However, he cautions that much of this correlation may result from the isolated nature of the tax variable; without regard to other variables of interest that the tax rate affects, it is difficult to quantify the exact nature of this tax effect. For example, a decrease in taxes may increase work incentives and salaries, stimulating greater giving. However, the study effectively introduces the tax effect as a relevant concept to the funding of non-profit institutions, and asserts that it may play a role in overall crowding effects for the institution.

3.3 Symphony Orchestras

In a study that most closely resembles the one in this paper, Arthur Brooks (2000) once again examines crowding out effects, but this time observing 253 symphony orchestras from different budget tiers over a period of 8 years (1984-1991). Using aggregated data from the five budget tiers, Brooks was able to once again support the idea of a nonlinear crowding effect, the inverted U. He used this information to inform what he refers to as a "subsidy trap," wherein policy makers within an institution often envision goals that cannot be coincident. That is, the crowding effect at high levels is so significant that the level of subsidy that maximizes private donation will never be the same as the level of subsidy that maximizes total contributed revenue. (Brooks, 2000)

What this means for development officers in nonprofits is that they are faced with a choice of maximizing dollars or patron involvement. The donors to an artistic institution are one

of the greatest assets they have, offering insight and vision for the company as well as leveraging useful connections to better the institution. Further, involvement of the citizen seems more democratic than taking a check from the government. However, profit maximization would suggest that it is worth it to eliminate private donation for the sake of higher levels of government subsidy and maximized contributed revenue. (Brooks, 2000)

Brooks further discusses what he refers to as a "subsidy trap" in which, somewhat in contrast to his previous assertion, companies must be careful not to take on too much subsidy before private donors have time to react. Because private donation reacts to public subsidy, it is possible for companies to push themselves onto the "crowd-out" side of the inverted U crowding curve before private contributors ever get a chance to respond. When they do, it is by withholding the crowded out funds. In effect, it may be worth it for a company to start out forgoing a little bit of government subsidy in order to reap the benefits of the low-level crowd-in effect. If the level of subsidy gets too bloated before a private donor pool has been established, the company crowds out long run dollars that it will then never have. (Brooks, 2000)

In much the same way, this paper will make inferences and extensions outside of the empirically proven crowding effect to model internal allocation of company fundraising resources. Though it is possible that crowding effects are a result of private donor response to government subsidy, that requires a great deal of effort on the part of the donor. In the case of the arts, it makes more sense to attribute crowding effects to the way in which companies utilize their fundraising resources.

4. Data and Methodology

4.1 Data Sample Construction

The data used in this study are figures pulled from non-profit "990 tax forms" made publicly accessible for the sake of financial transparency on the part of the company. Accessed through the economic research institute, a total of 15 institutions were selected to be observed over a nine year period (2001-2009). Of these 15, five are theatrical institutions, five are visual art institutions, and five are music institutions. Additionally, they range in budget levels from $.6M to $350M. To homogenize the available public funding, social impact, patron body makeup, and a bevy of other variables, all of the surveyed institutions are located in New York City. The variables collected include:

PRIVATE................. private contributions

PUBLIC .... government subsidy

DEVELOPMENT ... fundraising expenditures

EARNED .... earned revenue from programming and services

BUDGET .... operating budget for the given year

Development is included as a variable because it only makes sense that an increase in the amount spent on fundraising will most often result in an increase in contributed revenue; this increase must be accounted for in the model. Budget is taken into account because it serves as an effective indicator of the size of the institution, as well as the level of output the company produces. Earned revenue of the organization is included because it is closely related with private donations. For the most part, the people who donate money are the same people that buy

tickets. Greater earned revenue generally indicates greater privately contributed revenue. Additionally, high earned income is indicative of high demand for the art being produced. Overall, in constructing the sample and selecting variables, the goal was to account for as many factors, given the available data, which were both intrinsic to the organization, and somehow related/correlated with contributed revenue. Descriptive statistics of the data collected can be seen in Table 1.

Table 1. Descriptive statistics on the artistic institution data

	Private Funding	Public Funding	Development Expenses	Earned Revenue	Budget
Mean	$26,798,191	$3,703,219	$2,824,417	$12,597,859	$54,218,841
Median	$12,003,266	$580,000	$1,939,248	$8,460,538	$30,802,995
Standard Deviation	$40,489,356	$7,982,218	$2,922,046	$13,292,644	$78,426,779
Range	$238,769,487	$62,011,691	$12,463,712	$54,223,921	$352,603,736
Minimum	$384,513	$0	$92,495	$0	$601,778
Maximum	$239,154,000	$62,011,691	$12,556,207	$54,223,921	$353,205,514

4.2 Regressions

Rather than attempting to confirm the inverted U crowding effect, a well-supported and generally agreed upon conclusion, this study focuses on the effect of shocks to public funding, and the private funding response. In constructing regressions, it was ultimately determined that using lagged variables made the most sense. This is somewhat intuitive in that if we want to quantify the manner in which private funding responds to public funding, we cannot expect that response to occur simultaneously. Rather, by lagging government funding by one year, we see private funding as it responds to public funding from the previous period. Indeed, if we look at the correlation matrix (Table 2) of the variables collected, we see that the correlation

between private funding and public funding lagged by one year is nearly twice as significant as the private/public correlation.

Table 2. Correlation matrix of the variables collected

	Private	Public	Development	Earned	Budget	PublicLag	PrivateLag
Private$_t$	1						
Public$_t$	0.3215	1					
Development$_t$	0.7687	0.5548	1				
Earned$_t$	0.3247	0.3054	0.4324	1			
Budget$_t$	0.7449	0.621	0.8543	0.583	1		
Public$_{t-1}$	0.5976	0.4858	0.5043	0.2158	0.6512	1	
Private$_{t-1}$	0.7313	0.4028	0.8141	0.347	0.7681	0.485	1

Other relationships worth noting are those between development and private funding vs. development and public funding. We see that development expenses are more significantly correlated with private funding than public funding, which could imply a greater focus of fundraising efforts on private funding. It could also mean that governmental funding sources are less responsive to fundraising efforts than private funders.

Additionally, it is worth noting the significance of the relationship between private funding and private funding lagged by one year. The intuition here is that the previous year's private funding is a strong indicator of the subsequent year's private funding, whereas the previous year's public funding is not as effective an indicator of the subsequent year's public funding. This is indicative of greater variability of governmental funding from year to year, a concept that is readily recognizable in the raw data. Upon perusing the raw numbers taken from the institutional tax returns, it was apparent that in general, organizations receive a certain static level of funding from the government every year. Then, sporadically, organizations will receive large one time grants. For example, the Metropolitan Opera receives roughly $200K dollars in public funding yearly (as per the 9 year period observed). However, twice in the 9 years

examined, the organization received significantly larger grants in the amounts of $2M and

$1.25M. For this reason, two of the four regressions used involve a fixed effects model. This

type of regression eliminates the static level of public funding and allows us to examine the

isolated effect of uncharacteristic one-time grants. Additionally, budget was not included in any

of the regressions. This is because the budget is essentially a product of earned and contributed

revenue; in an effort to avoid issues of multicollinearity, it was eliminated from the regressions.

Regression 1

The first regression used examines the linear interaction of the logged, lagged variables;

this regression was largely exploratory. The model used was:

$$\log(\text{Private}_t) = \beta_0 + \beta_1 \log(\text{Development}_{t-1}) + \beta_2 \log(\text{Public}_{t-1}) + \beta_3 \log(\text{Earned}_{t-1}) + \varepsilon$$

Regression 2

The second regression was exactly the same as the first, with the addition of a year effect.

By including binary variables for each year, we are able to account for business cycles and other

influences external to the scope of this study.

Regression 3

The third regression was again, identical to the first, except that this time it was assessed

using a fixed effect model, with binary variables generated for each company and year. Adding

the company effect helps control for size and other organization-intrinsic variables that would

otherwise be unaccounted for.

Regression 4

The final regression involved the addition of the lagged private funding variable to the regression, while still utilizing the fixed effects model. The thinking here was that this had the potential to render the lagged public funding variable insignificant in its influence on current period private funding. The final regression used was:

$$\log(\text{Private}_t) = \beta_0 + \beta_1 \log(\text{Development}_{t-1}) + \beta_2 \log(\text{Public}_{t-1}) + \beta_3 \log(\text{Earned}_{t-1}) + \beta_3 \log(\text{Private}_{t-1}) + \varepsilon$$

5. Results

Table 3. Regression Results

Dependent Variable: log (Private$_t$)	Coefficients			
Independent Variable	Regression 1	Regression 2	Regression 3	Regression 4
log(Public$_{t-1}$)	0.1218117	0.1186939	0.1413583	0.097968
	(0.0623912)	(0.0608663)	(0.0786614)	(0.0665357)
log(Development$_{t-1}$)	0.8336768	0.8483215	0.1714426	-0.1032131
	(0.0897181)	(0.0847259)	(0.3499847)	(0.3475813)
log(Earned$_{t-1}$)	0.0968009	0.088502	0.033223	-0.0644328
	(0.027742)	(0.0304123)	(0.195892)	(0.1492551)
log(Private$_{t-1}$)	-	-	-	0.4873867
	-	-	-	(0.1582103)
Constant	1.211999	1.098676	11.2472	9.498813
	(0.6801937)	(0.6708639)	(6.877057)	(5.641631)
Year Effect	No	Yes	Yes	Yes
Company Effect	No	No	Yes	Yes
Fixed Effects Regression	No	No	Yes	Yes
	(Robust standard errors reported below coefficient values)			
N=135 (15 panels, 9 periods each)	R-squared = 0.7923	R-squared = 0.8096	R-squared = 0.8730	R-squared = 0.8890

Upon running regression 1, it was readily apparent that there is a significant (at the 10% level), positive relationship between the previous period's public funding and the current period's private funding, with a coefficient on logged public funding of .122. Additionally, we see that development expenditures and private funding exhibit a significant positive relationship, with a coefficient on logged development expenditures of .833 (significant at the 10% level). Interestingly, this relationship is rendered insignificant with the implementation of the fixed effects model in regressions 3 and 4. This makes sense in that organizations tend to have fairly static fundraising budgets. Within the sample used, there was very little variation in development expenditures from one year to the next. The fixed effects model accounts for that consistency and

thus, very little variation in private funding can be attributed to the static level of development expenditure.

In regression 2, the year effect was added, though none of the year variables functioned as significantly effective predictors of private funding; they did increase the goodness of fit measure with a slightly increased R-squared value. The results echo and reinforce the relationships established with regression 1, with statistically significant coefficients on development and public funding. It is worth noting that in no case did earned revenue exhibit a significant relationship with private funding, deeming it an ineffective predictor of private donation variation.

Regression 3 implements the fixed effects approach, and in turn significantly increases the goodness of fit of the model. It should be noted that the year 2005 was eliminated due to issues of multicollinearity. Though development becomes insignificant, the relationship between lagged public funding is strengthened, with lagged public funding crowding in current period private funding with a significant coefficient of .141. This model makes the strongest case for public funding as a predictor for private funding, and undeniably indicates a delayed crowd-in effect for uncharacteristic positive shocks in government support. In addition, several of the company binary variables yielded significant coefficients, though specific results are largely irrelevant to this study.

Regression 4 integrates lagged private funding into the regression, providing the highest R-squared value of any model used, but also lessening the significance of public funding as a predictor; the weakened coefficient of .098 is only significant at a 15% level. With earned revenue and development almost completely obsolete, we see a very strong relationship between lagged private funding and current period private funding. Though public funding is not

completely insignificant, its influence has been reduced. Ultimately, these are probably the most

accurate results.

6. Conclusion

6.1 Empirical Work

To assess the implications of the empirical work done in this thesis, it is apparent that, based on our findings, there is a sort of delayed "crowding in effect" that occurs when an organization receives an atypically large governmental grant. Crowding in subsequent period private funding with a coefficient of .14, it would seem that public funding has an undeniable influence on the behavior of individual donors. Note that this is not an assessment based on the overall level of government funding; rather, the fixed effects model allows us to look at the effect government dollars in excess of a typical level of public funding. It is not each dollar of governmental funding that crowds in private donation, but each dollar in excess of a set, static level of funding that occurs each year and is eliminated in the fixed effect. This is one thing that makes this study unique; the bulk of the literature involves assessing the overall level of public funding and its influence. This is effectively complicit with the change effect established in Elena Borgonovi's 2005 study; once again we see private funding react positively to an increase in government funding. (Borgonovi, 2005)

This relationship becomes less significant when lagged private funding is included as a predictor. This makes sense in that regarding private funding, more often than not, dollars that were there in the previous period will be there again in the current period. Companies spend a great deal of time cultivating relationships with donors, particularly those who give large gifts, such that donors have a greater incentive to renew their gifts. This is not as much the case with public funding, where despite a company's efforts, much of the available funding is determined by factors outside their control (e.g. budgetary decisions, ruling party turnover). So it is

reasonable to expect that lagged private funding acts as the strongest predictor. However, the influence of a public funding shock is still evident.

One could speculate that the mechanism for this crowding effect has to do with the company's utilization of governmental funding. An uncharacteristically large government award may allow a company to expand, change or improve its programming; measures that tend to attract more private donors/increased gifts from existing donors in the subsequent period. This is an effect that is fairly unique to artistic institutions. Arts institutions have output that is very visible and easily quantified by donors/potential donors. If a theatrical institution receives a grant that allows it to stage 10 shows in a season instead of 8, that could allow for thousands more patrons, each of whom is a potential donor. This visibility of programming makes both quantity and quality key determination points for individuals who choose to donate. Public funding shocks may allow for improvement in either or both of these areas naturally garnering more private interest, and thus, more private dollars.

Government dollars tend to be particularly effective in allowing for improvement of output because there are much fewer inputs for acquiring government dollars than private dollars. This was touched upon earlier when it was mentioned that receiving large donations from individuals is generally a product of many efforts on the part of the development staff. "Wining and dining," so to speak, is an integral piece of acquiring individual contributions. Receiving a large government award, on the other hand, generally involves filing a grant application. Because the acquisition of government funds is less rigorous, that money represents less input from the organization and thus represents greater net revenue for the company than the equal amount of private dollars. Additionally, large government awards are fairly sporadic, or at least the data collected for this study indicate so. For this reason, large government grants may

allow the company to carry out improvements that could not occur in a year with a more typical level of public funding.

6.2 Discussion

One of the pitfalls of this study involves the fourth regression executed. With the addition of the lagged private funding variable, the regression becomes a dynamic model wherein the lagged private value and the disturbance term may be correlated; an effective autocorrelation. Essentially, the model may have become misspecified. However, to neglect the lagged private funding variable would almost certainly represent an omitted variable bias. The standard remedy for this involves dynamic panel techniques in which additional private funding lags would be used as instrumental variables. Unfortunately, this study does not have enough time series to effectively carry out this method. With only nine years of data, additional lags would only serve to pare down the time series to the point of being unusable. However, given the rationality of the results and the conclusions drawn therefrom, we can be confident that there is some credence to the trend that was unearthed.

6.3 Further Research

There are several questions that arise when looking for logical next steps in this area of research. As so many past studies have indicated that crowding out begins to occur at higher levels of overall funding, it serves to reason that there may be a certain level of overall funding where this shock-driven crowd in effect becomes less significant. Determining how finite this crowd in effect is would help to build a more accurate understanding of the effect of large, one-time public grants. Additionally, it is rational to think that the shock to public funding must be of

a certain size to have an effect on private funding in the next period. A closer examination of the size effect of public funding shocks could provide compelling and relevant new findings as well. Lastly, to strengthen the argument for the mechanism of the crowd-in effect, it would be of interest to examine the newly acquired donors in the year following a large jump in government funding. Though really a question in the realm of marketing/consumer choice, examining why patrons choose to donate in the year following the shock could help to determine how directly the public funds translate into increased private donation.

7. Appendix

Institutions Studied:

Music:

Carnegie Hall Society, Inc.

Jazz at Lincoln Center

Metropolitan Opera

New York City Opera

New York Philharmonic

Theatre:

Lincoln Center Theater

Manhattan Theatre Club

Roundabout Theatre Company

Second Stage Theatre

Signature Theater Company

Visual Art:

American Folk Art Museum

Artists Space, Inc.

Metropolitan Museum of Art

Museum of Modern Art

Whitney Museum of American Art

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WORK EXPERIENCE

Pennsylvania State University Department of Economics (University Park, PA)
400-level Teaching Assistant: Advanced International Trade Theory and Policy   August 2011-December 2011
300-level Teaching Assistant: Intermediate Microeconomic Analysis   August 2010-May 2011
- Proctored exams for upper level economics courses
- Collaborated with professor in generating answer keys and grading criteria
- Maintained student attendance records for class of 100 students

Roundabout Theatre Company (New York, NY)   May 2011-August 2011
Executive Office Intern
- Compiled audience and revenue data for 10 productions to be used in 2011 fiscal-year annual report
- Spearheaded analysis of historical production trends to abet strategic planning initiative
- Aided in relations with Board of Directors
- Acted as supplier liaison for Board member gifts and materials

Bates White, LLC, Research Sponsorship (University Park, PA)   January 2011-May 2011
Research Assistant to Dr. David Shapiro (Co-Director of Undergraduate Studies)
- Conducted regression analysis on education and fertility data for sub-Saharan Africa to detect correlations and trends
- Developed new economic index to evaluate socioeconomic status allowing for distribution analyses
- Generated presentation materials for all conference appearances
- Compiled journal submissions per submission deadlines

Ability Beyond Disability (Bethel, CT)   May 2010-June 2010
Development Intern
- Designed Internet component for campaign, raising over $500,000
- Aided in standardizing company's grant application and donation acceptance procedures
- Organized donor information in company's database
- Innovated new ways of securing future cash streams with development team

EDUCATION

The Pennsylvania State University, University Park, PA
Bachelor of Science in Economics   May 2012
Schreyer Honors College Scholar
Schreyer London Study Tour—January 2011
Minors in Biology and Theatre

VOLUNTEER WORK/LEADERSHIP

Penn State Dance Marathon: Springfield House (University Park, PA)
Member / Recruitment Chair (2010) / Fundraising Trip Leader (2010-2011)   August 2008-December 2011
- Active fundraising member for Springfield House, an organization of the Penn State Dance Marathon devoted to raising funds for pediatric cancer research (total funds in 2010/2011: $9,563,016.09)
- Organized and led recruitment activities resulting in acquisition of over 50 new team members
- Supervised team of 15 members on fundraising trip yielding over $10,000 (highest trip total in organization's history)

Schreyer Honors College Speaker Series
Committee Member   January 2010-May 2011
- Served on a 12-member committee responsible for managing a $40,000 budget to organize and promote prestigious speaker events on the Penn State campus
- Integrated social networking into promotional campaign for event with a turnout of over 250 students

ACTIVITIES AND ACHIEVEMENTS
- Black Belt in Tae Kwon Do
- Thomas J. Watson Memorial Scholarship recipient
- Member of two PSU School of Music choral ensembles: Essence of Joy and Glee Club
- 2008 Connecticut All-State Musician (voice)