

Oberlin

Digital Commons at Oberlin

Honors Papers

Student Work

2013

An Investigation into Crowd Out Phenomenon in Local Churches: Combining Experimental and Survey Methodology

Matthew Moench
Oberlin College

Follow this and additional works at: <https://digitalcommons.oberlin.edu/honors>



Part of the [Economics Commons](#)

Repository Citation

Moench, Matthew, "An Investigation into Crowd Out Phenomenon in Local Churches: Combining Experimental and Survey Methodology" (2013). *Honors Papers*. 333.
<https://digitalcommons.oberlin.edu/honors/333>

This Thesis is brought to you for free and open access by the Student Work at Digital Commons at Oberlin. It has been accepted for inclusion in Honors Papers by an authorized administrator of Digital Commons at Oberlin. For more information, please contact megan.mitchell@oberlin.edu.

Oberlin Honors Seminar (2012-2013)

An Investigation into Crowd Out Phenomenon in Local Churches

Combining Experimental and Survey Methodology

By: Matthew Moench

This paper presents the findings of an experimental investigation into crowd out phenomenon in an as-yet unexplored sector of public goods provision: the local church. I develop an entirely new instrument for experimental investigation into crowd out, using a combination of both survey and experimental methodology. While the survey finds limited evidence for an aggregate crowd out effect due to taxation, the experimental treatments uncover no evidence of crowd out in local churches due to fiscal illusion.

Table of Contents:

Introduction

I. Literature Review

II. Theoretical Model

III. Methodology

IV. Results

V. Limitations

VI. Conclusions

Appendix: Variable definitions, Var/Cov Matrix, Example Survey, FTTS

Bibliography

Acknowledgments

Introduction

This paper presents the results of an experiment that investigates crowd out effects in several local Christian churches in the greater Cleveland area. The experiment examines how government spending on social welfare programs and the taxes it levies to pay for this spending might crowd out donations to churches and those programs the churches support that substitute for government welfare provision. That is, this paper seeks to answer the questions: “do church members continue to give charitably when taxes go up?” and, “would members divert funds to other areas of church financial commitment (such as missions/salaries/etc.) if the government’s welfare programs provided the same social service as current church programs?”. In short, this paper does not find any experimental evidence that church-members alter their charitable giving due to government action, nor that member’s desired allocation of church resources is dependent on government choices. However, there is some evidence based on survey responses that aggregate crowd out effects may occur in church giving.

This experiment falls under the area of economic literature dealing with experimental investigation into crowd out phenomenon. It contributes to that experimental literature by investigating an as yet unexamined sector (namely local churches), by developing a new instrument for measuring crowd out in churches, and by broadening the scope of subjects exposed to experimental crowd out research. Although there has been some investigation into crowd out effects in American churches, the previous research has been limited to empirical studies; thus this paper’s experimental method makes a unique new contribution to research on crowd out in local churches. The experimental method this paper uses is itself a novelty, built on previous work by Eckel et al. (2005) (especially utilizing the concept of fiscal illusion), and constitutes a new instrument that could be used in investigation of crowd out phenomenon in a variety of settings. Additionally, the vast majority of experimental research into crowd out has only utilized undergraduate students. This study deviates from that pattern and runs a

crowd out experiment on ‘real’ people, who might currently be experiencing crowd out of their regular giving at the churches where they are tested, hopefully providing a higher degree of realism in the experiment.

The experimental treatments of this paper find no evidence for crowd out phenomenon due to fiscal illusion in the church members tested. When the subjects were presented with a hypothetical scenario of increased taxation, they did self-report they would give less, which indicates a possibility of aggregate crowd out effects. However, it was clear from the survey that this effect would not occur due to fiscal illusion, as the model this paper develops below suggests.

This paper offers a brief literature review (Section 1), a specific model of crowd-out (Section 2), and a concise description of the experimental design (Section 3) to enable the reader to understand the main results. Section 4 presents these results and Section 5 discusses limitations. Finally, a conclusion (Section 6) explores implications of this research and details further research possibilities.

1. Literature Review

In recent years, the sector of economic research into charitable giving has exploded. While there is a long tradition of examining altruisms’ impact on people and economic systems dating to at least Adam Smith, the work from the last two decades is unprecedented. Major efforts have been made to understand the motivations for giving, the impact of tax-deductions on giving, giving by the wealthy, the crowding out effect of government activity on private donations, and the mechanisms of charity fundraising. (Andreoni 2008) The economic study of the crowd out phenomenon has been ongoing since the mid 1980’s. Beginning with a number of theoretical papers, economists began to wonder if government contributions to non-profits would induce lower levels of private donations to those charities. The early theory suggested that government actions could be neutral – i.e. dollar for dollar crowd out would occur because government provision via taxation could be “undone” by transfer payments as long as the taxation levels were low enough. However, experimental and empirical

challenges to the proposed theory began to show cases of incomplete and low crowd out, and so new theoretical models needed to be introduced.

This led to the introduction of the concept of “warm-glow” giving, the idea that a giver can receive some private benefit from giving independent of altruistic preferences or preferences for a public good. Incorporating this new concept into the theory helped account for many of the experimental and empirical results that were in conflict with the old “neutral” theory. However, the theory didn’t fully account for all the variation in crowd out estimates in the literature. Some papers found partial crowd out in the range of 70%, others found an almost negligible size of <5%. Still today, economists work to further refine their understanding of crowd out phenomenon, explain the varying estimates, and create a more comprehensive theory that can account for all the subtle variations in crowd out effects across different public-good sectors.

This paper follows a strategy adopted in several recent studies by investigating a small portion of the public goods sector, in this case local churches. The crowd out literature related to church benevolence is not large; it is comprised mainly of papers written by Daniel Hungerman and others he has worked with. *Are Church and State Substitutes? Evidence from the 1996 welfare reform* (Hungerman 2005) is probably the first paper to directly look at the connection between crowd out and churches. In it, he finds that churches experience a significant crowd out (about 20-38 cents on the dollar with respect to government spending). His conclusion solely relates to church spending decisions; despite investigating donations, he finds no crowd out effect in that area. *Faith-based charity and crowd-out during the great depression* (Gruber & Hungerman 2007) likewise finds significant crowd out (30% of benevolent giving by churches crowded out by government spending), but again leaves open the question of individual’s donations. There is clearly a hole in the empirical literature in that it is unclear whether donations are subject to crowd out effects. Therefore, this study includes a survey section

specifically designed to find the answer to the question: “do taxes crowd out individual’s donations to churches?” This is the primary purpose of the thought experiment section of the survey detailed below.

There is no current experimental research in the area of crowd out phenomenon in churches. However the experimental literature on crowd out in general is quite large, and this study owes much to earlier work. Andreoni (1993) *An Experimental Test of the Public Goods Crowding Out Hypothesis* provides some of the first empirical evidence for crowd out; he finds incomplete crowd out in a modification to a standard public goods experiment. This paper has the significant implication that a “neutral” theory of crowd out won’t explain its results, thereby supporting the alternative “warm glow” explanation. *An Experimental Test of the Crowding Out Hypothesis* (Eckel et al. 2005) provides a number of very important resources for my paper. First, I draw primarily on Eckel’s paper for the inspiration and deduction of the economic model below. Second, Eckel’s paper makes the very valuable contribution of co-opting the concept of “fiscal illusion” from public choice theory and applying it to a crowd out model. Fiscal illusion is defined by Eckel as “when donors/taxpayers do not understand the sources and opportunity costs of funding for activities that they support.” Her experiment goes on to show that fiscal illusion does indeed play a role in crowd out; generally, fiscal transparency (the opposite of fiscal illusion) makes crowd out much higher. My experiment capitalizes on this dynamic by presenting information on government spending and revenue generation to subjects in order to decrease fiscal illusion, and thereby providing an opportunity for crowd out to occur. To explain this method further, I introduce the following economic model.

2. Economic Model

The model of crowd out presented in Eckel et al. (2005) includes:

$$1) x_i,$$

Which is private consumption.

$$2) G=C+T$$

G is total public good provision, consisting of C=voluntary contributions and T=tax revenue.

$$3) g_i=c_i+at_i$$

g_i is the consumer's perceived contribution, consisting of known voluntary contribution c_i and perceived tax support at_i . The parameter on actual tax (t_i) is a , with $0 \leq a \leq 1$, reflecting the degree of fiscal illusion.

Thus, $a=0$ implies complete fiscal illusion; i.e. the consumer is unaware that her tax supports the public good. $a=1$ implies complete fiscal transparency; i.e. the consumer knows her tax supports the public good. The consumer then maximizes:

$$4) \max U = U_i(x_i, G, g_i)$$

subject to the budget constraint:

$$\text{s.t. } 5) x_i + c_i = e_i - t_i$$

where e_i is the consumer's endowment and t_i is a lump sum tax.

The amount of crowd out in c_i that would occur if the government changed t_i can be accounted for by the consumer's preferences between the private and public good, the magnitude of the "warm-glow" motivation for giving, and the amount of fiscal illusion present. The more fiscal illusion (lower a value), the less g_i is affected by the government changing t_i , therefore the less crowd out effect expected.

The beauty of this model is that it can account for various stories of crowd out. For example, if a particular person felt a strong warm glow motivation for giving (ie, the consumer is less concerned with the total public good provision and simply wants the private benefit they get from giving, or perhaps the

consumer feels they cannot affect G with their choice and take it as exogenous) and experienced a high degree of fiscal illusion (low a value), then there is likely to be a low level of crowd out in c_i if t_i is changed because perceived giving wouldn't change much. But if the same person experienced fiscal transparency (high a value), we would expect a greater level of crowd out because perceived giving, g_i , would be more affected by the tax change.

My experiment uses the concept of fiscal illusion to attempt to tease out crowd out effects. Experimentally testing for crowd out effects is a challenging task. Unfortunately, one cannot simply vary taxes and government spending and see how benevolence and spending respond in an experimental setting. Therefore, finding a different way to inspire crowd out behavior was necessary. By exposing some subjects to a treatment that reveals information about government spending and asks them to recall their own t_i , I hoped to create fiscal transparency for some subjects and allow others to remain in fiscal illusion. Then, by exposing these different groups to two experimental tasks and measuring how each responded, I hoped to measure the difference of crowd out in the groups, hypothesizing that the group with high fiscal transparency would display a higher level of crowd out. However, my data did not support this hypothesis.

3. Methodology

This paper utilized a combination of survey questions and experimental treatments to investigate its research questions. The experimental treatments were included in the survey itself, so it felt to participants as if they were simply participating in a survey. In fact, so as not to decrease recruitment, participation was often framed as "taking a survey" instead of as "participating in an experiment."

The survey was administered on Sunday mornings at 3 local Cleveland area churches. The churches displayed differences in ethnic background of attenders, average age, average members of household, average income, average education level, theological beliefs, and social programs provided. (See Summary Stats organized by church below. Variables are explained in the appendix.) Two of the

participating churches are local Oberlin congregations: Mt. Zion Baptist Church (hereafter MZ) and Abundant Grace Church (hereafter AG). The third church is located in Medina, Ohio, perhaps 40 minutes from downtown Oberlin, and is named Harvest Presbyterian Church (hereafter HP). All of the participants from MZ were black/African-American persons. All of the persons (except 1) from the two other churches were white/Caucasian persons. Altogether 92 people participated. 17 from MZ, 24 from AG, and 51 from HP.

The experimental element of this paper was the different versions of the survey administered to subjects. Altogether, there were 4 versions of the survey. All versions ask the subjects for standard demographic information, information about their church involvement (attendance/familiarity with church finances, personal giving level, satisfaction level), and to engage in a thought experiment that asks them to imagine giving to their local church under different governmental regimes. Thereafter, each survey is of one of four types.

Sample means by church with standard errors			
	HP	AG	MZ
FEMALE	0.41 (0.07)	0.57 (0.11)	0.65 (0.12)
AGE	3.2 (0.17)	2.83 (0.29)	4.61 (0.2)
SCHOOL	3.55 (0.17)	3.31 (0.25)	2.24 (0.35)
MAR	0.96 (0.03)	0.7 (0.1)	1. (0.)
WID	0.04 (0.03)	0.04 (0.04)	0.12 (0.08)
HOUS	3.76 (0.21)	3.43 (0.33)	2. (0.17)
CHILD	1.69 (0.22)	0.96 (0.26)	0.12 (0.12)
INC	83588.89 (5590.3)	59782.26 (9338.15)	60032.18 (6075.26)
CHURCHY	9.55 (0.86)	2.26 (0.45)	26.65 (3.32)
ACTIV	1.54 (0.15)	1.26 (0.2)	2.06 (0.29)
FINANC	0.84 (0.05)	0.43 (0.11)	0.76 (0.11)
FINANCEVAL	2.96 (0.12)	3.13 (0.14)	2.18 (0.33)
GIVCHUR	5998.04 (555.8)	4891.3 (1593.9)	5441.18 (1206.13)
GIVCHAR	1438.24 (212.01)	1580.44 (418.43)	626.47 (237.25)

The first level of variation was the fiscal transparency treatment sheet (FTTS) that was included in half of the surveys. In the data, it is represented by a dummy variable ILLU. (0 = No sheet, 1 = FTTS sheet). The FTTS asked participants to recall their actual taxes paid in 2012 (t_i from the model above), and provided information on how the State of Ohio and Federal government spend money on social welfare provision. (See the Appendix for a copy of the FTTS.) The FTTS was therefore intended to raise the α value (lower fiscal illusion) as explained above in Section 2, and to call to subject's minds their (t_i). Then when they faced the experimental tasks explained below, theory would suggest that those exposed to the FTTS would display a greater level of crowd out.

The two different experimental tasks were then as follows:

In the first task (hereafter the spending task), the subjects were told that their survey constitutes a vote of how their church should spend \$100 dollars that the study had donated to the church. They were asked to imagine that the \$100 represented the total church budget, and reveal their preferences for how they would like the church to allocate its entire budget. They were asked to allocate the \$100 however they chose between 3 different categories: "Church Costs of Operation", "Domestic and Foreign Missions Support (evangelism)", and "Local Justice/Mercy Ministry (soup kitchens, schools, etc)". Then, after all the surveys were collected, one survey was chosen at random to determine the actual way the church would allocate the funds donated. That is, the churches promised to allocate the funds in accordance with the votes from the surveys. This treatment looked to see if high government welfare provision (both the level of revenue generation and actual programs) tends to make church members less interested in having their church provide local social welfare. That is, it seems reasonable to assume that the average church-goer isn't particularly thinking of how much the federal government spends on food stamps when they consider what's going on in their church's soup kitchen. They are more likely reflecting on what a positive value they think the soup kitchen brings to the community. However, in this treatment, if the subject has a survey with the FTTS, the subject was asked to bring

those two worlds of thought together and consider how much they would like their church to spend on social welfare provision, given that the government is already doing a lot of that. Therefore it would seem reasonable to expect that those subjects exposed to the FTTS would ask their church to provide less social welfare, that is that we would see a greater crowd out effect because of higher fiscal transparency. To be clear, for this task, the FTTS is not changing the α parameter as detailed in the model above, because the subject is not here deciding on their own level of giving c_i . However, this task does attempt to see if at the level of an individual congregant, the findings of the empirical Hungerman papers hold: namely this task tries to answer the question: “is there crowd out in church spending preferences of individuals in churches due to government action?”

In the second task (hereafter the giving task), the subjects were asked to make a donation to a social welfare program in which their local church was already involved. For MZ, the program was a scholarship fund for high school graduates, run by the church. For AG, the program was a local social-welfare needs clearing house called Love INC that meets all sorts of material welfare needs, including housing, transportation, food, and others. For HP, the program was Cup’s Café, a local café that serves food and coffee for free, runs programs for the unemployed, and provides mothers of infants with formula, among other things. The differences in programs were necessary as the churches didn’t participate in the same program, so there was no way to control for this difference. The expectation for this treatment based on theory was that the FTTS would raise the α parameter for those subjects exposed to it, and induce a greater crowd out effect. That is, at MZ subjects exposed to the FTTS would feel that they already had given much through their taxes to education. At AG, subjects exposed to the FTTS would feel that they already had given much through their taxes to various social welfare needs, including subsidized housing and food provision. And at HP, subjects exposed to the FTTS would feel that they already had given much through their taxes to the hungry (food stamps) and unemployed (unemployment insurance).

4. Main Results

My results did not indicate a treatment effect for either experimental task in this study. Analysis of the spending task data showed that there was no statistically significant difference in how much people voted for their church to spend on “justice/mercy ministry” (the category hypothetically subject to crowd out) depending on whether or not they received the FTTS. That is, when comparing the mean of how much people who had the FTTS voted for “justice/mercy ministry” to the mean of people who didn’t have the FTTS, the means were not found to be significantly different for the whole sample of churches.¹ However, when dividing the sample further into groups by church, although HP and AG still showed no sign of significant treatment effect, MZ did show a statistically significant difference in means. The mean of those without the FTTS was significantly greater than the mean of those with the treatment.² That is, those with higher fiscal illusion wanted their church to give more to social welfare. Does this constitute evidence for crowd out due to fiscal transparency? Not likely; given the lack of significance of the results for the other churches, which had far more participants (in this experimental task, there were only 6 participants from MZ, 3 with the FTTS and 3 without), I would posit that the MZ results are being influenced by a couple of strong outliers. Also, in coding the data I noticed MZ displayed a great deal of variance that was not evident in the other churches. A number of MZ respondents did not respond to questions in a way that was clear, as if they didn’t understand what was being asked of them. I believe to a certain degree this was a result of the age of the respondents (significantly higher than at the other churches, see summary statistics above.), it was clear that some were old enough to be experiencing a slowing of some cognitive faculties. So with these factors casting

¹ The statistical method was a standard means comparison t-test; judging statistical significance at the 10% level, the means were not significantly different.

² The result of a 1 tailed t-test that the mean of those without the FTTS was greater than the mean of those with the FTTS yielded a p value of 0.0296. The result of a 2 tailed t-test that the difference of the means was different from zero was 0.0592.

doubt on the reliability of the data collected, I am not inclined to claim that the statistical analysis is evidence for a treatment effect in the spending task.

In the donation task, again the data does not show signs of a treatment effect.³ For the whole sample, there is no statistically significant difference between how much those with the FTTS gave to the church's program as compared to how much those without the FTTS gave.⁴ When dividing the sample by churches, again MZ shows significant differences between the treatment groups, those without the FTTS (ie having higher fiscal illusion) gave more to the churches charity.⁵ But again, because of small sample size (8 participants, 4 in each treatment) and the concerns mentioned above, I am reluctant to consider this good evidence of a treatment effect; it seems to me likely that outliers are influencing the results.

These results suggest that, if we accept that my experimental mechanism does genuinely expose people to different levels of fiscal illusion, the crowd out mechanism in local churches must be of a different nature than proposed in this paper. That is, fiscal illusion must not be driving the crowd out in local churches that has been reported in empirical studies, because this experiment does not find evidence that fiscal illusion affects people's giving choice nor that it affects their preferences for church spending. There are several reasons we might not accept that the experimental mechanism functions as it ought though, requiring us to consider the question on fiscal illusion unanswered. These reasons are discussed below in the limitations section.

³ For this task, I took raw donation amounts and divided them by both reported gross income, and by reported giving to church. Thus I compared the percentage amount a person gave to the percentage amount another person gave, not the raw donation amounts.

⁴ Again, this result came from a standard means comparison t-test. The means were not significantly different for either a 1-tailed or 2-tailed test in either the situation of donation/income or donation/giving.

⁵ In the case of donation/income, the result of a 1 tailed t-test that the mean of those without the FTTS was greater than the mean of those with the FTTS yielded a p value of 0.007 and a two tailed test that the difference of means was different than zero yielded a p value of 0.014. In the case of donation/giving, the result of a 1 tailed t-test that the mean of those without the FTTS was greater than the mean of those with the FTTS yielded a p value of 0.0738 and a two tailed test that the difference of means was different from zero was not significant at the 10% level.

However, even though there are limitations, this result has some internal confirmation from the non-experimental portions of the study. One of the sections of the survey asked the participants to engage in a thought experiment where they were asked to imagine how much they would give to their local church under different government regimes. They were first asked how much they would like to give in a “normal” year with no family crisis, no economic instability, etc. Then they were asked how much they would give in a similar “normal” year with the exception that the government raised their income tax by 10%. Then finally they were asked how much they would give in a year the government raised their income tax by 10% and then told them that it would be using the extra revenue to fund a program that specifically provided the same social welfare that their church provided. That is, the answer to the first question establishes a giving baseline for a respondent, the answer to the second question reveals if there is any crowd out effect due to government taxation with complete fiscal illusion (no information is given about how the government will use the money), and the answer to the third question reveals if there is any crowd out due to complete fiscal transparency (the participant is told precisely how the government will use the extra tax revenue: i.e., to compete with their local church).

From analysis of the data derived from the third question⁶, there was no statistically significant evidence that fiscal transparency would induce higher levels of crowd out. That is, the difference between participant’s responses to questions two and three (CROWDCHUR2) did not significantly vary from zero in a two tailed t-test. This result based on survey responses is by itself not much in the way of indicating that fiscal transparency doesn’t create aggregate crowd out effects. But this survey result does agree with the lack of experimental evidence discussed above, lending some strength to the idea that fiscal illusion/transparency might not be an important aspect of the crowd out mechanism in local churches.

⁶ Again, the data were all converted to percentages of income as in the experimental donation task. Some respondents directly reported percentage values, other respondents reported numbers and these were divided by reported gross income.

Analysis of the difference between the response to the first question and the second question (CROWDCHUR1) does indicate that tax increase would induce crowd out. The effect was not present at AG or MZ, but was very clear at HP, which had the 47 observations, almost half of the total sample. The result of a one tailed t-test that the mean was greater than zero yielded a p value of (0.0171). The result of a two tailed t-test that the mean was different than zero yielded a p value of (0.0342). The mean for CROWDCHUR1 was 0.0048 at HP indicating that for a 10% decrease in disposable income, the average parishioner would decrease their giving by approximately .5% of their gross income. However, it is important to highlight that this is an aggregate effect. There were some people who reported actually giving more to their church if they had less disposable income. And the significant majority of respondents reported that they would not change their giving level in any of the situations, regardless of the government taxing them more or providing fiscal transparency. I would hypothesize that what drives people to be affected by government actions is actually dependent on their theological beliefs to a certain extent. If you believe you are commanded by God to give 10% of your before tax income to the church, than regardless of what the government does your giving is likely to stay the same. Perhaps this result that HP seems to be different than MZ and AG indicates that there are theological differences, or that the churches attract different kinds of people, with difference responsiveness to government action.

Regressions are not particularly helpful in analyzing the data from this study. Many variations can be run, but they all basically confirm obvious intuitions. For example here's an attempt to explain how much people donate to their local church (GIVCHUR):

```
. regress GIVCHUR FEMALE AGE SCHOOL MAR INC FINANC MZ AG
```

Source	SS	df	MS	Number of obs =	91
Model	573817878	8	71727234.8	F(8, 82) =	3.07
Residual	1.9151e+09	82	23355348.2	Prob > F =	0.0045
				R-squared =	0.2305
				Adj R-squared =	0.1555
Total	2.4890e+09	90	27655071.4	Root MSE =	4832.7

GIVCHUR	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
FEMALE	-973.1352	1035.646	-0.94	0.350	-3033.366 1087.095
AGE	542.1628	505.7674	1.07	0.287	-463.9697 1548.295
SCHOOL	625.3468	433.329	1.44	0.153	-236.6825 1487.376
MAR	218.5122	2390.249	0.09	0.927	-4536.454 4973.479
INC	.0456696	.014924	3.06	0.003	.015981 .0753581
FINANC	902.6302	1268.923	0.71	0.479	-1621.662 3426.922
MZ	865.3536	1600.927	0.54	0.590	-2319.401 4050.108
AG	903.6878	1407.735	0.64	0.523	-1896.745 3704.121
_cons	-2341.874	2499.679	-0.94	0.352	-7314.532 2630.784

Although the regression is significant (F probability of 0.4%), the only significant variable is INC. The coefficient says that for every additional \$1000 of income, ceteris paribus, a person gives \$45 to the local church, or about 4.5% of income, notably less than the traditional 10% tithe. This is a straightforward and expected relationship.

Here is a regression explaining reported happiness (FINANCEVAL) with church financial decisions:

```
. regress FINANCEVAL FEMALE AGE SCHOOL MAR INC FINANC MZ AG
```

Source	SS	df	MS	Number of obs =	92
Model	17.4839657	8	2.18549571	F(8, 83) =	2.65
Residual	68.3855995	83	.823922886	Prob > F =	0.0121
				R-squared =	0.2036
				Adj R-squared =	0.1269
Total	85.8695652	91	.943621596	Root MSE =	.9077

FINANCEVAL	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
FEMALE	-.1721519	.193167	-0.89	0.375	-.5563533 .2120495
AGE	-.0431058	.0947179	-0.46	0.650	-.2314959 .1452842
SCHOOL	.0049032	.0808901	0.06	0.952	-.1559839 .1657903
MAR	-.1438902	.4443229	-0.32	0.747	-1.027631 .7398502
INC	-3.47e-06	2.80e-06	-1.24	0.219	-9.05e-06 2.10e-06
FINANC	.6042744	.2373756	2.55	0.013	.1321439 1.076405
MZ	-.7052256	.3006907	-2.35	0.021	-1.303287 -.1071639
AG	.2697735	.2606954	1.03	0.304	-.2487392 .7882863
_cons	3.071152	.4689632	6.55	0.000	2.138403 4.003901

This regression again is significant in totality, but only one variable can significantly explain variation in happiness with church financial decisions, and that is FINANC, the dummy for people who are knowledgeable about church financial decisions. The positive coefficient indicates more knowledge about church finances results in greater happiness with the church's financial situation.

5. Limitations

This study has a number of limitations on its results. First, the instrument used in this study is brand new. It was developed from scratch. Although that hopefully makes it a helpful contribution, it also means that the instrument is unrefined. It's in all likelihood lacking in precision and consistency. All of the results should be taken with a certain caution simply due to this fact.

A particularly devastating critique one could make is challenging the functionality of the FTTS to truly lower fiscal illusion. If someone took the position that the FTTS is ineffectual, then the result that this study finds a lack of evidence casting doubt that fiscal illusion operates in local churches would be invalid, as there would effectively be no treatment.

The limited size of the study limits its results to a certain extent. Additionally, the different settings and circumstances where the study was conducted introduce random variation that cast doubt on all results as well. This experiment was not controlled particularly tightly due to great logistical challenges.

Lastly, the different social-welfare programs that were picked for the donation task at each church offer a further element of variation that might cast doubt that the members are really facing the same decision. Perhaps it would be superior to find multiple churches that are involved with the same external program and ask members to donate to the same program.

6. Conclusion

This study has produced some interesting results. Whereas previous writing on crowd out in churches has been unable to speak to whether or not government action affects donation levels, this study has suggested that there is the possibility of aggregate crowd out effects to giving as a result of increased taxation. Additionally, this study has found a distinct lack of evidence that fiscal illusion makes an impact in local churches. Applying Eckel's model of crowd out to the local church situation, it seems that U_i is almost completely independent of g_i . This could be explained in several ways. Perhaps the preferences of church goers is such that they derive no private benefit from giving and only care about the total public good provision G . However, given the previous work on warm glow giving in churches and other non-profits, this seems unlikely. I would propose that the deficiency in Eckel's model as applied to this situation could be explained by the idea that church members don't see the public good offered by the government as identical to the public good offered by the church. That is, they don't take at_i to increase g_i . This seems like a very plausible explanation: a church member thinks that her church's soup kitchen is about more than just feeding people physically, it's also about feeding them spiritually. In their mind, a government food stamp program is not a true substitute.

In sum, this study offers a new experimental view into crowd out phenomenon in local churches. It provides a new instrument for the exploration of crowd out phenomenon in many possible non-profit contexts. This paper would indicate further research is still needed into the mechanism by which crowd out occurs in the local church context, as fiscal illusion doesn't seem to offer the necessary explanation. Perhaps further research could be conducted as to why and how people distinguish between the public good provided by their church and the public good provided by the government. Also, investigating the mechanisms by which churches actually allocate their financial resources, not simply the preferences of church members, might help explain where crowd out actually occurs.

Appendix

Variables, names and descriptions

FEMALE – Dummy for females

AGE – Ordinal 1-5, 1=18-29 2=30-39, 3=40-49, 4=50-59, 5=60+

RACE – Dummy for African American

SCHOOL – Ordinal 1=No High School, 2=High School/GED, 3=Some College, 4=College, 5=Post Grad

MAR – Dummy for married

WID – Dummy for widowed

DIVOR – dummy or divorced

HOUS - # of persons in household

CHILD - # of children under 18 in household

BED - # of bedrooms in home

INC – Participants were given ranges of incomes to choose from, averages of categories were taken

FOOD – Dummy for currently being on food stamps

MEDICARE, MEDICAID, SS, SSI, SSDI, CHIP, WIC – Dummies for participation (past or present) in these social welfare programs

MEMB – dummy for being a member of the church

CHURCHY – years at the church

SUND – average Sunday attendance (0-4)

ACTIV – average number of other activities involved with at the church besides Sunday service

CHURCHP – Previous churches attended

FINANC – Dummy for knowledge of church finances (those who answered questions about church finances accurately were given a 1)

FINANCEVAL – Ordinal, happiness with church financial decisions, 0=very dissatisfied, 5=very satisfied

GIVCHUR – amount given to local church last year, again ranges given, averages taken

GIVCHAR – amount given to other charity last year, ranges given, averages taken

SC1CHAR = How much given to charity under scenario 1/INC

SC1CHUR = how much given to local church under scenario 1/INC

SC2CHAR = under scenario 2/INC

SC2CHUR = under scenario 2/INC

SC3CHAR = under scenario 3/INC

SC3CHUR = under scenario 3/INC

CROWDCHAR1 = SC1CHAR- SC2CHAR

CROWDCHAR2 = CROWDCHAR1- SC3CHAR

CROWDCHUR1 = SC1CHUR- SC2CHUR

CROWDCHUR2 = CROWDCHUR1- SC3CHUR

MZ – Dummy for MZ

AG – Dummy for AG

ILLU – Dummy for the FTTS (1=they have it)

SPEND – Dummy for spending task

DONGIV = Raw donation/GIV

DONINC = Raw donation/INC

INTSPENDEQ - % of \$100 voted for “church costs of operation”

MISSPENDEQ - % of \$100 voted for “domestic and foreign missions (evangelism)”

EXTSPENDEQ - % of \$100 voted for “local justice/mercy ministry”

Var/Covar Matrix

	FEMALE	AGE	RACE	MAR	SCHOOL	WID	DIVOR	HOUS	CHILD	BED	INC	FOOD	MEDICARE	MEDICAID
FEMALE	1.0000													
AGE	0.0795	1.0000												
RACE	0.1318	0.3670	1.0000											
MAR	-0.0342	0.5683	0.1607	1.0000										
SCHOOL	-0.1379	-0.1835	-0.2418	0.1000	1.0000									
WID	0.2196	0.2786	0.1556	0.0765	-0.1719	1.0000								
DIVOR	0.0615	0.2398	0.3572	0.0658	-0.0395	-0.0425	1.0000							
HOUS	-0.0332	-0.2386	-0.4018	0.2846	0.2793	-0.1997	-0.2128	1.0000						
CHILD	-0.1269	-0.3042	-0.3383	0.2819	0.3440	-0.1163	-0.1728	0.8417	1.0000					
BED	0.0658	0.1300	-0.1527	0.3358	0.1454	0.0790	0.0518	0.6390	0.4581	1.0000				
INC	-0.1020	0.0885	-0.0628	0.4106	0.3388	-0.0248	-0.0694	0.4678	0.3553	0.4040	1.0000			
FOOD	-0.0018	0.0786	-0.0725	0.0534	-0.0908	-0.0345	-0.0297	0.1096	0.0368	0.0948	-0.1805	1.0000		
MEDICARE	0.0515	0.4992	0.0269	0.1784	-0.0853	0.1568	0.0569	-0.0961	-0.1618	-0.0251	-0.1024	0.1095	1.0000	
MEDICAID	0.0277	0.0443	-0.0458	-0.1725	-0.2608	0.2143	-0.0813	-0.1510	-0.1105	0.0051	-0.3203	0.3653	0.3398	1.0000
SS	0.1005	0.6404	0.2884	0.2034	-0.2643	0.3761	0.0325	-0.3241	-0.3501	-0.0572	-0.1793	0.0855	0.6799	0.2713
SSI	-0.0018	-0.0373	-0.0725	0.0534	0.0853	-0.0345	-0.0297	0.2590	0.0368	0.2531	0.2391	-0.0241	0.1095	-0.0660
SSDI	0.2196	0.1956	0.0259	0.0765	-0.2979	0.2130	-0.0425	0.0499	0.0104	0.0790	-0.0998	0.3320	0.1568	0.2143
CHIP	0.0615	-0.0460	-0.0893	0.0658	0.0569	-0.0425	-0.0366	0.1555	0.1666	0.1168	0.0816	-0.0297	0.2130	0.2730
WIC	-0.0026	-0.0534	-0.1037	0.0765	0.0801	-0.0494	-0.0425	0.1212	0.1372	0.1357	-0.0154	0.3320	0.1568	0.3686
MEMB	0.0951	0.1349	0.1287	0.3530	-0.0205	0.0612	0.0527	0.1886	0.1442	0.1128	0.2116	-0.2602	0.0304	-0.1381
CHURCHY	0.1391	0.3924	0.5900	0.1895	-0.3529	0.3442	0.2424	-0.2932	-0.2015	0.0097	-0.0795	-0.1047	0.1293	0.0114
SUND	0.1188	0.0828	-0.3079	-0.1184	-0.0857	-0.0589	0.0658	-0.0405	-0.1252	-0.0639	-0.1347	0.0534	0.1082	0.0666
ACTIV	-0.1557	0.1670	0.1348	0.0724	-0.0432	0.2394	0.0177	-0.0700	-0.1141	0.1401	0.0563	-0.0797	0.1004	0.0790
CHURCHP	-0.0078	-0.0693	-0.2376	-0.1109	0.1039	0.1424	-0.1267	0.0661	-0.1135	0.0799	0.1209	-0.0219	0.1370	0.1105
FINANC	-0.0193	0.0871	-0.0247	0.2207	0.2013	0.0103	-0.1705	0.1733	0.1677	0.0602	0.2344	-0.0802	0.0564	-0.0355
FINANCEVAL	-0.1739	-0.1976	-0.1868	-0.1563	0.0679	-0.2140	-0.0486	0.1059	0.1094	-0.0436	-0.1009	0.0155	-0.0706	0.0425
GIVCHUR	-0.1381	0.1364	0.0273	0.2482	0.2338	-0.1455	0.0114	0.2440	0.0356	0.2920	0.4337	-0.1374	-0.0126	-0.1534
GIVCHAR	-0.1971	0.1012	0.0231	0.2616	0.2578	-0.1336	-0.0751	0.1841	0.1765	0.2007	0.3210	-0.1281	0.1189	-0.0374
SC1CHUR	-0.1174	0.0757	-0.0611	0.1103	0.1482	-0.1485	-0.0088	0.1039	0.0543	0.1336	-0.0454	-0.1395	0.1174	-0.0089
SC2CHAR	-0.0634	0.2119	0.1925	0.0910	-0.1387	-0.1155	-0.0136	-0.1436	-0.1826	-0.0093	-0.0312	-0.1010	0.1819	0.1548
SC2CHUR	-0.0720	0.1335	-0.0777	0.1438	0.1874	-0.0040	0.0360	0.0689	0.0634	0.1837	-0.0569	-0.1386	0.0887	0.0074
SC3CHAR	-0.0646	0.2013	0.1561	0.1042	-0.0868	-0.1060	-0.0053	-0.1134	-0.1680	0.0327	-0.0087	-0.1020	0.1531	0.1085
SC3CHUR	-0.0327	0.0977	-0.1130	0.1347	0.1867	-0.0090	0.0321	0.1172	0.0674	0.2090	-0.0506	-0.1435	0.0463	-0.0507
CROWDCHAR1	0.0472	-0.1720	-0.2809	-0.0368	0.1746	0.0294	-0.1172	0.0889	0.1042	-0.0411	-0.0343	0.0240	-0.2057	-0.1827
CROWDCHAR2	0.0044	0.0404	0.1353	-0.0480	-0.1919	-0.0356	-0.0306	-0.1124	-0.0549	-0.1548	-0.0831	0.0031	0.1071	0.1715
CROWDCHUR1	-0.1037	-0.1018	0.0240	-0.0503	-0.0960	-0.2998	-0.0879	0.0817	-0.0102	-0.0791	0.0162	-0.0204	0.0713	-0.0326
CROWDCHURCH2	-0.1140	0.1058	0.0982	0.0304	0.0075	0.0141	0.0122	-0.1354	-0.0096	-0.0668	-0.0195	0.0099	0.1233	0.1656

61	SS	SSI	SSDI	CHIP	WIC	MEMB	CHURCHY	SUND	ACTIV	CHURCHP	FINANC	FINANC-L	GIVCHUR	GIVCHAR
SS	1.0000													
SSI	-0.0917	1.0000												
SSDI	0.1224	0.3320	1.0000											
CHIP	-0.1130	0.3909	0.2586	1.0000										
WIC	-0.1313	0.3320	0.2130	0.8607	1.0000									
MEMB	0.0580	0.0428	0.0612	0.0527	-0.1557	1.0000								
CHURCHY	0.3611	0.0058	0.0922	-0.0241	-0.0708	0.2512	1.0000							
SUND	0.0724	0.0534	0.0765	0.0658	0.0765	0.0171	-0.0281	1.0000						
ACTIV	0.0629	0.2025	0.2394	0.0757	-0.0131	0.1414	0.4060	0.0984	1.0000					
CHURCHP	0.0147	0.0186	-0.1182	-0.0270	-0.0024	-0.2963	-0.3757	-0.0412	0.0335	1.0000				
FINANC	-0.0028	0.0945	0.0103	-0.0270	-0.1148	0.4525	0.1764	0.1132	0.2163	-0.1764	1.0000			
FINANCYAL	-0.3120	0.1805	0.1403	0.0869	0.0222	-0.0276	-0.2405	-0.0039	0.1764	-0.0511	0.1079	1.0000		
GIVCHUR	0.0102	0.4941	-0.1036	0.0114	-0.0456	0.1817	-0.0013	0.0873	0.2162	0.0656	0.2136	-0.0129	1.0000	
GIVCHAR	0.0471	0.0015	-0.0924	0.0334	-0.0168	-0.0310	-0.1680	-0.1921	0.1113	0.1972	-0.0066	0.1197	0.1532	1.0000
SC1CHUR	0.0100	0.2450	-0.1427	0.0287	-0.0373	0.1350	0.0505	0.2147	0.1959	-0.0340	0.2941	0.1618	0.5178	0.0496
SC2CHAR	0.2319	-0.0310	-0.0311	-0.0126	-0.0444	0.0672	0.1302	-0.0040	0.1181	-0.0889	0.0874	0.0354	0.0551	0.5084
SC2CHUR	0.0633	0.2726	0.0023	0.0233	-0.0425	0.1464	0.0449	0.2178	0.2111	-0.1281	0.2438	0.1583	0.5688	0.0303
SC3CHAR	0.2238	-0.0243	-0.0806	-0.0221	-0.0557	0.0635	0.0700	0.0101	0.1043	-0.0181	0.0588	0.0437	0.1034	0.5569
SC3CHUR	0.0332	0.2719	-0.0027	0.0090	-0.0569	0.1541	-0.0033	0.2180	0.2202	0.0047	0.2575	0.1784	0.5978	0.0824
CROWDCHAR1	-0.2306	-0.0007	0.0157	0.0174	0.0261	-0.0310	-0.2851	0.0619	-0.1649	0.1218	-0.0773	-0.0264	-0.0014	0.0207
CROWDCHAR2	0.0311	-0.0249	0.1824	0.0349	0.0415	0.0139	0.2226	-0.0522	0.0515	-0.2617	0.1059	-0.0302	-0.1780	-0.1762
CROWDCHUR1	-0.1017	-0.0204	-0.2998	0.0142	0.0051	-0.0040	0.0176	0.0227	-0.0030	0.1776	0.1369	0.0284	-0.0293	0.0439
CROWDCHURCH2	0.0873	0.0099	0.0141	0.0414	0.0396	-0.0175	0.1386	0.0058	-0.0197	-0.3818	-0.0317	-0.0523	-0.0660	-0.1472

	SC1CHUR	SC2CHAR	SC2CHUR	SC3CHAR	SC3CHUR	CROW~AR1	CROWD~R2	CROW~UR1	CROWD~H2
SC1CHUR	1.0000								
SC2CHAR	0.1467	1.0000							
SC2CHUR	0.8776	0.0362	1.0000						
SC3CHAR	0.1180	0.9633	0.0413	1.0000					
SC3CHUR	0.8639	0.0614	0.9390	0.1112	1.0000				
CROWDCHAR1	-0.1406	-0.2761	0.0397	-0.1197	0.1298	1.0000			
CROWDCHAR2	0.1067	0.1405	-0.0185	-0.1304	-0.1834	-0.5783	1.0000		
CROWDCHUR1	0.3713	0.2337	-0.1194	0.1644	-0.0295	-0.3680	0.2568	1.0000	
CROWDCHURCH2	0.0647	-0.0707	0.2031	-0.1979	-0.1462	-0.2554	0.4688	-0.2593	1.0000

Variables with a correlation coefficient > 0.4

AGE with MAR, SS, MEDICARE

RACE w/ HOUSE and CHURCY

MAR w/ INC

HOUS w/ CHILD BED and INC

CHILD w/ BED

BED w/ INC

INC w/ GIVECHUR

MEDICARE w/ SS

GIVECHUR w/ SSI

CHIP w/ WIC

MEMB w/ FINANC

CHURCY w/ ACTIV

GIVECHUR w/ SC1-2-3CHUR

GIVECHAR w/ SC1-2-3CHAR

SC1-2-3CHURCH with each other

SC1-2-3CHAR with each other

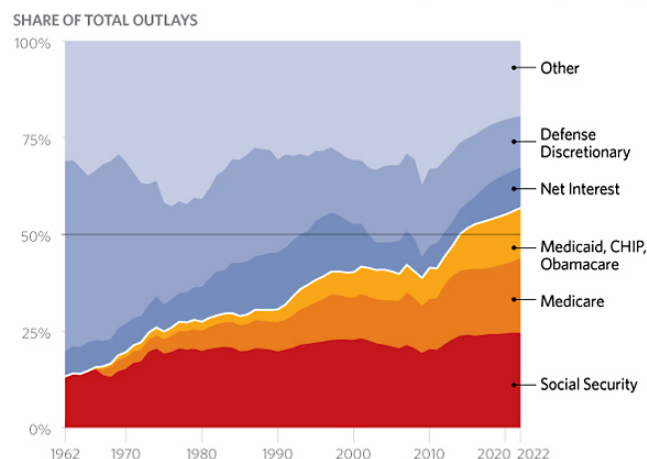
CROWDCHAR1 w/ CROWDCHAR2

FTTS: Please Read This Page Before Continuing!

First, please recall the amount you were actually taxed by the Federal Government last year (2012), including Federal income tax, capital gains tax, the tax on your employer (corporation taxes), social security, etc. Now recall the amount you were taxed by the State of Ohio, income tax, property tax, etc.

Most Americans are unfamiliar with how their tax dollars are spent. Below are some statistics on the expenditures of the US Federal Government, and the State of Ohio, all provided directly by government statistics agencies, or derived from their reports.

Entitlements and Interest Are Crowding Out Other Spending



Sources: Congressional Budget Office, *An Update to the Economic and Budget Outlook: Fiscal Years 2012 to 2022*, Table I-1, <http://cbo.gov/publication/43543> (accessed August 23, 2012), and Office of Management and Budget, *Budget of the U.S. Government, FY 2013: Historical Tables*, Table 8.5, February 2012, <http://www.whitehouse.gov/omb/budget/Historicals> (accessed August 8, 2012).

Federal Spending by the Numbers 2012 heritage.org



- Federal spending per household reached \$29,691 in 2012, a 29 percent increase (adjusted for inflation) from \$23,010 in 2002. The government collected \$20,293 per household in taxes in 2012.
- Major entitlements (Social Security, Medicare, Medicaid, Children's Health Insurance Program, Obamacare) will increase from 44 percent of federal spending in 2012 to 57 percent in 2022.
- Entitlement spending more than doubled over the past 20 years, growing by 110 percent (after adjusting for inflation). Discretionary spending grew by 60 percent.
- All entitlements (excluding net interest) total nearly 62 percent of all federal spending today.
- Food stamps and other nutrition programs have more than doubled in the past 10 years. Food stamp participation rates also more than doubled, growing from 19.096 million recipients in 2002 to 44.709 million by 2011.
- Spending on food stamps doubled in inflation-adjusted terms from \$42 billion in 2008 to \$85 billion in 2012.

Bibliography

- Andreoni, James. 1993. "An Experimental Test of the Public-Goods Crowding-Out Hypothesis." *American Economic Review* 83, no. 5: 1317-1327. *EconLit*, EBSCOhost (accessed November 6, 2012).
- Andreoni, James. 2008. "Charitable giving." The New Palgrave Dictionary of Economics. Second Edition. Eds. Steven N. Durlauf and Lawrence E. Blume. Palgrave Macmillan, 2008. The New Palgrave Dictionary of Economics Online. Palgrave Macmillan. 04 September 2012
<http://www.dictionaryofeconomics.com/article?id=pde2008_C000590> doi:10.1057/9780230226203.0221
- Eckel, Catherine C., Philip J. Grossman, and Rachel M. Johnston. 2005. "An Experimental Test of the Crowding Out Hypothesis." *Journal Of Public Economics* 89, no. 8: 1543-1560. *EconLit*, EBSCOhost (accessed November 6, 2012).
- Gruber, Jonathan, and Daniel M. Hungerman. 2007. "Faith-Based Charity and Crowd-Out during the Great Depression." *Journal Of Public Economics* 91, no. 5-6: 1043-1069. *EconLit*, EBSCO host (accessed September 4, 2012).
- Hungerman, Daniel M. 2005. "Are Church and State Substitutes? Evidence from the 1996 Welfare Reform." *Journal Of Public Economics* 89, no. 11-12: 2245-2267. *EconLit*, EBSCO host (accessed September 4, 2012).

Acknowledgements

I would like to thank the entire economics faculty 2012/2013, for all of their support, help and constructive feedback in this project, especially Ron Cheung, Barbara Craig, and Jordan Suter. I would like to thank my parents Kim and Chris, Tom Petit, Wes Hall, and Brent Zeigler for their continued friendship, encouragement, and support, even when things were rough. I would like to thank the leadership and parishioners of Mount Zion Baptist Church, Harvest Presbyterian Church, and Abundant Grace Evangelical Free Church for their participation in the project. And thanks to my peers in the Honors Seminar for all their camaraderie and commiseration. Soli Deo Gloria.