

Kids or Cash? Exploring Charter Schools' Response to Declining Government Revenues

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Motivation

- Charter schools are funded through a combination of governmental revenue and charitable donations
- In order to effectively support the charter sector, we need to understand the relationship between these two sources
 - If government funding crowds out donations and/or fundraising activity, then shocks to government funding should lead to at least some offsetting changes in private support for charter schools
 - If public education is characterized by crowding in, then changes in donations and charitable behavior could amplify the impact of any shock in government funding for charter schools as well

The Nonprofit Literature on Crowding In and Out

- Many empirical studies have analyzed crowding in and out
 - see for example, Borgonovi, 2006; Gruber and Hungerman, 2007; Heutel, 2009 and 2014; Hungerman, 2005; Khanna et al., 1995; Jones, 2015; Kingma, 1989; Lu 2016; Manzoor and Straub, 2005; Milton, 2016; Okten and Weisbrod, 2000; or Ribar and Wilhelm, 2002
- The majority of the studies find relatively small effect sizes and crowding in may be a more common finding than crowding out
- A few studies have focused specifically on reduced fundraising activity as a possible mechanism leading to crowding out.
 - In two papers, Andreoni and Payne (2003, 2011a) found that government grants lead to reduced fundraising expenditures and, thereby, reduce donations to charities in arts and social services

Crowding Out in the School Funding Literature

- Some research has been done on the impact of donations on traditional public school district funds
 - see for example Brunner and Imazeki, 2005; Hansen et al., 2015; Jones, 2015; Milton, 2016; Zimmer et al., 2003; or Zimmer et al., 2001; Nelson and Gazley, 2014
- Other recent work has found crowding out in the context of private schools
 - see for example Hungerman and Rinz (2016) or Hungerman, Rinz and Frymark (2017)
 - Hungerman, Rinz and Frymark (2017), found that school vouchers crowd out church donations

Our Theoretical Model

- In the spirit of Steinberg (1986) and Brooks and Ondrich (2007), we model charter schools as not-for-profit firms with “utility” affected by service quality and budget size
 - we add quality or reputation as an argument of the charter schools’ utility because quality is a vital element in the prestige and performance of schools
- The budget is generated by federal and state funding tied to student enrollment and by private donations secured through fundraising efforts
- Private donations to the charter school are a function of fundraising effort or expenditure, of the number of students in the school and the government per pupil contribution g
 - We assume that $DF > 0$. That is, donations increase as fundraising effort increases

The Theory Supports Two Hypotheses

- Hypothesis 1 – An increase in charter schools' fundraising effort increases donations. However, the effects on donations to charter schools of an increase in charter schools' enrollment and an increase in public per pupil funding are uncertain
- Hypothesis 2 – An exogenous increase in public per pupil funding decreases the charter schools' fundraising effort. However, the effect of an increase in public per pupil funding on charter schools' enrollment and ultimately on donations to charter schools is uncertain

The Empirical Approach

- The nature of our model and hypotheses suggests a two-stage empirical approach, in which fundraising and enrollments are treated as endogenous determinants of donations:
- $Fundraising_i = \delta_1 + \sum_2^m \delta_j X_{ij} + \sum_{m+1}^l \delta_j Z_{ij} + \vartheta_i,$
- $Enrollment_i = \gamma_1 + \sum_2^m \gamma_j X_{ij} + \sum_{m+1}^l \gamma_j Z_{ij} + \vartheta_i,$
- $Donations_i = \alpha + \beta_1 Fundraising_i + \beta_2 Enrollment_i + \sum_3^l \beta_j X_{ij} + \varepsilon_i.$

Testing the Theoretical Model in Texas

- Charter schools have been part of the Texas public education system since 1997.
- Open Enrollment (OE) charter schools are independent local education agencies that are analogous to traditional school districts.
- OE charter schools are authorized by the state and operated by institutions of higher education, governmental entities, or non-profit corporations.
 - Like traditional public school districts, OE charter schools may operate multiple campuses, must participate in the state's educational accountability system and may not charge tuition.
 - Unlike traditional school districts, OE charters may operate in more than one metropolitan area, may serve only a subset of grades, and may place limits on the number of children allowed to enroll.

Charter School Funding

- Prior to the 2005-06 school year, charter schools also received funding adjustments based on the funding levels in the traditional public school districts their students would have otherwise attended.
 - Students who resided in school districts with higher property tax rates or higher cost of education adjustments generated more revenue for a charter school than students who resided in school districts with lower taxes or lower cost adjustments.
- In 2005-06, the state revamped its funding formula, basing state aid for charter schools on the statewide average values for tax rates and cost adjustments
- OE charter schools that began operating on or before September 1, 2001, however, were partially grandfathered in, so that their state aid was based partially on the local values and partially on statewide values, with the share of state aid based on statewide values increasing over time.
 - For example, in 2008-09, 60 percent of state aid to long-established charter schools was based on those statewide average values, but 40 percent of their state aid was based on the cost adjustments and enrichment tax rates of the traditional districts their students would otherwise attend.

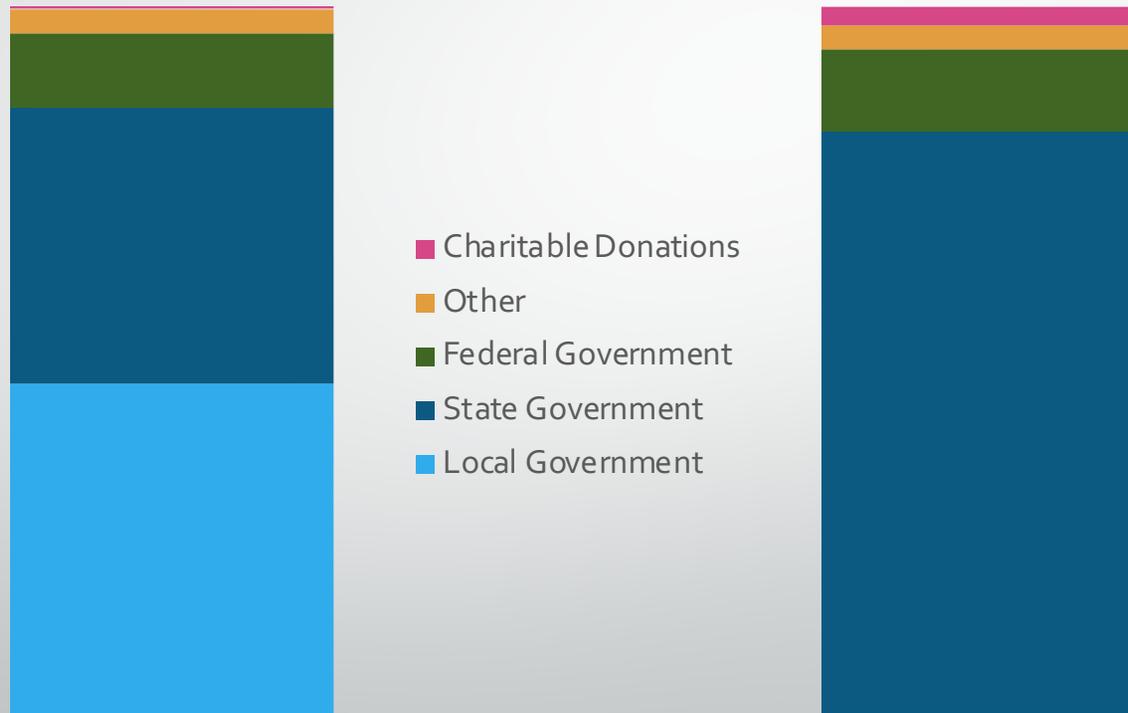
Revenue Sources 2013-14

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%

- Charitable Donations
- Other
- Federal Government
- State Government
- Local Government

Traditional Public School Districts

OE Charter Schools



Donations and Fundraising In Texas Charters

- Donations: revenues received from charitable sources—foundations, other non-profit organizations, gifts and bequests.
 - In 2014-15, the average OE charter school in Texas received \$264 per pupil in revenue from charitable sources
 - Most OE charter schools (82 percent) received less than \$100 per pupil in charitable donations
 - KIPP Dallas-Fort Worth reported \$5,574 per pupil in charitable donations in 2014-15
- Fundraising: all operating expenditures in the designated category, regardless of the funding source.
 - In 2014-15, 68 percent of OE charter schools spent less than \$10 per pupil on fund raising activities.
 - Three Charter Schools—one of which was the aforementioned KIPP Dallas Fort Worth—spent more than \$600 per pupil on fund raising in 2014-15.

Data

- Panel data from the Texas Education Agency (TEA)
- All Texas charter schools since their inception in 1997 through the 2014-15 school year.
 - In 1996-97, there were 16 OE charter schools in Texas, each of which operated a single campus
 - in 2014-15, there were 195 OE charter schools operating 612 campuses

Financial Variables (in \$2015)

- Revenues from charitable sources per pupil
- Expenditures on fund raising per pupil
- Indicator for a history of fund raising
- Overhead ratio
 - Operating expenditures on administration/total operating expenditures
- Fiscal Shock

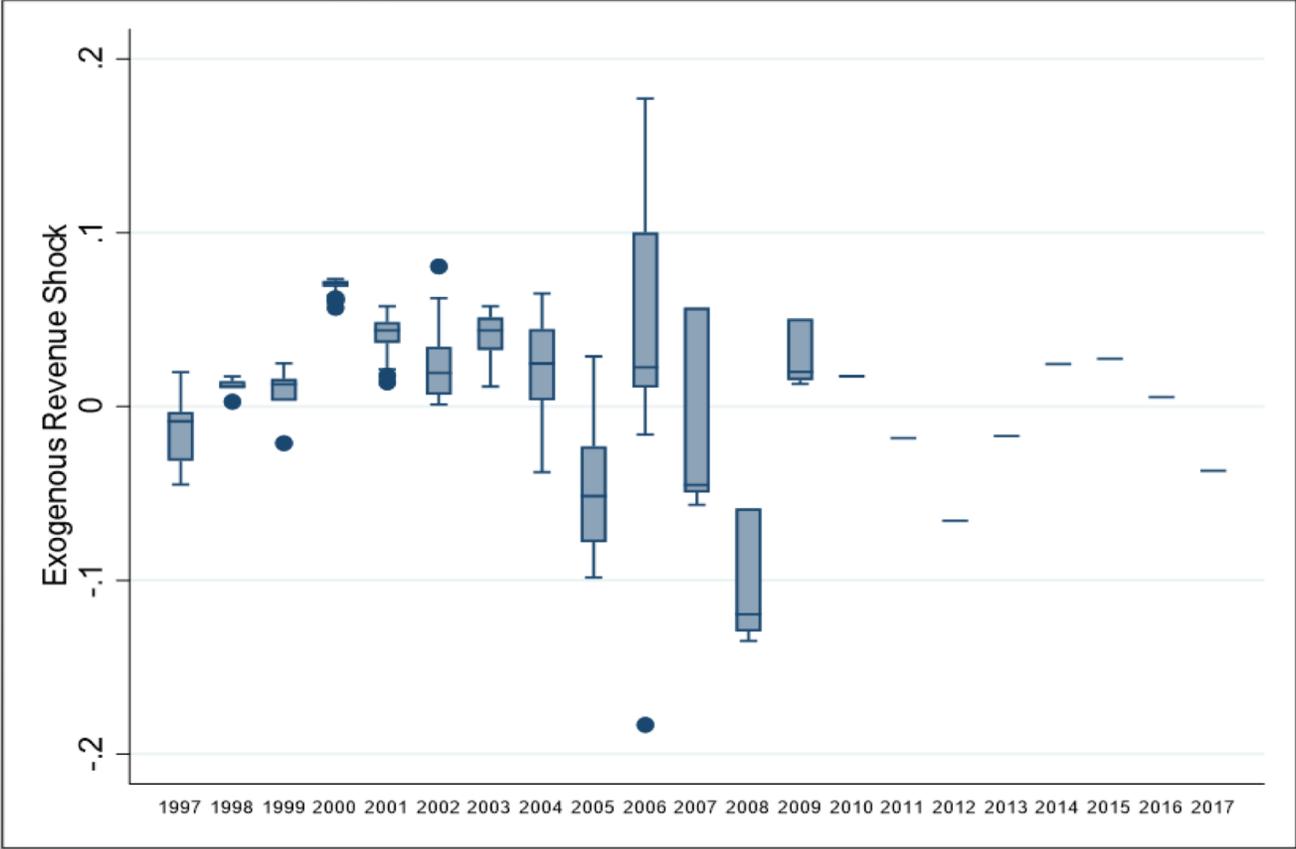
Fiscal Shock

- We measure governmental revenues as total operating revenues from all federal, state and local government sources, and fiscal shocks as year-to-year changes in governmental revenues (per pupil) that arise from factors outside of school district's control.
- Thus, we estimate, for each year, the expected relationship between the funding formula elements and a school district's governmental revenues, using data from the state's traditional public school districts:

$$GR_{it} = \beta_t X_{it} + \mu + \epsilon_{it}$$

- where GR_{it} is the log of real per-pupil government revenue for traditional public school district i , X_{it} is a vector of district characteristics that drive state and local revenues under the Texas funding formula, and μ is a fixed effect for county.

The Fiscal Shock Indicator



Nonfinancial Variables

- Enrollment
- % Economically disadvantaged
- % Limited English proficient (LEP)
- % Gifted and talented,
- % Career and technical students
- % Special education
- % Alternative education
- % Attending low performing campuses
- Austin, Dallas, Houston or San Antonio metropolitan indicators
- Broad prize indicators
- Real per capita personal income (log)

	Donations Models		
	Model 1	Model 2	Model 3
	(2SLS)	(IV Tobit)	(CNR)
Fiscal Shock	-1,153.382 (498.720)**	-705.492 (964.403)	-661.846 (999.511)
Fundraising expenditures per pupil	1.957 (0.534)***	2.606 (1.214)**	0.648 (0.247)***
Log Enrollment	19.556 (58.524)	477.802 (122.892)***	450.820 (128.416)***
First stage F-statistics	40.3; 36.8	110.7, 122.7	(161.8; 36.8)
Number of obs.	3,153	3,153	3,153

Standard errors (in parentheses) were bootstrapped using 1,000 replications for the CNR model

	Fundraising Per Pupil (CNR)	Log Enrollment (OLS)	Donations Per Pupil (CNR)
Fundraising Expenditures per pupil			0.648 (0.247)***
Log Enrollment			450.820 (128.416)***
Fiscal Shock	-351.229 (172.086)**	-1.209 (0.512)**	-661.846 (999.511)
Instruments			
Shortfall indicator	-2.658 (11.569)	-0.287 (0.044)***	
Debt load	4.129 (69.149)	2.466 (0.353)***	
Prior fundraising indicator	193.883 (15.411)***	0.101 (0.029)***	
F-statistic	161.84	36.84	

	Fundraising Per Pupil (CNR)	Log Enrollment (OLS)	Donations Per Pupil (CNR)
Baseline Specification			
Fundraising Expenditures per pupil (D_F)			0.648 (0.247)***
Enrollment (log) (D_N)			450.820 (128.416)***
Fiscal Shock	-351.229 (172.086)**	-1.209 (0.512)**	-661.846 (999.511)
Marginal effect of a fiscal shock (D_g)			-1,434.396 (995.741)
Number of obs.	3,153	3,153	3,153

	Fundraising Per Pupil (CNR)	Log Enrollment (OLS)	Donations Per Pupil (CNR)
Excluding Direct Effects of a Fiscal Shock			
Fundraising Expenditures per pupil (D_F)			0.658 (0.241)***
Enrollment (log) (D_N)			465.804 (132.860)***
Fiscal Shock	-351.299 (171.209)**	-1.209 (0.534)**	
Marginal effect of a fiscal shock (D_g)			-794.014 (337.312)**
Number of obs.	3,153	3,153	3,153

	Fundraising Per Pupil (CNR)	Log Enrollment (OLS)	Donations Per Pupil (CNR)
Asymmetric Financial Shock			
Fundraising Expenditures per pupil (D_F)			0.672 (0.258)***
Enrollment (log) (D_N)			444.872 (125.608)***
Positive Fiscal Shock	-329.580 (248.441)	-0.396 (0.690)	
Negative Fiscal Shock	-385.611 (316.285)	-2.592 (0.998)***	
Marginal effect of a positive fiscal shock			-397.415 (369.678)
Marginal effect of a negative fiscal shock			-1,411.879 (593.262)**
Number of obs.	3,153	3,153	3,153

Conclusions

- We found a significant, positive relationship between fundraising effort and donations, although the magnitude was small enough to suggest that Texas OE charter schools overinvest in fundraising.
- We found a significant, positive relationship between enrollments and donations, suggesting that per pupil donations are larger for larger, more established charter schools.
- Treating both fundraising and enrollments as endogenous, we also found a significant, negative relationship between exogenous fiscal shocks and donations.
 - In other words, we found evidence of crowding out.

Conclusions II

- We found very robust, positive response of enrollments to negative fiscal shocks—consistent with charters responding to a decrease in per-pupil funding by boosting enrollments— and a similarly robust response of fundraising.
- The enrollment response was stronger for negative shocks than positive ones, suggesting some asymmetry, but symmetric effects could not be ruled out.
- The student enrollment channel is at least as important to the crowding out story as is the fundraising response.