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Give a little or lose a lot: The effects of increased transparency on local applications for federal grant funds

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Abstract:	In this paper I examine the effects of the increased transparency and reporting requirements on the decisions of Local Education Agencies to draw down federal dollars allocated to state programs in non-mission areas. Data from Local Education Agencies and program expenditures are used to develop a model detailing how transparency impacts the decisions LEAs in two states in drawing down funds from a federal grant program. Findings suggest that rather than the theoretical expectation that managers act in an anticipatory manner, that managers are more concerned with immediate financial needs.

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Introduction

In this paper I examine the impact of increased transparency on local education agency's non-mission specific goals via their financial allocations. The broader examination lies within the context of transparency and public information. While work has been done in this area at the federal level, it has largely examined changes vis-à-vis the National Performance Review (NPR). For example, much of Piotrowski's research focuses on how changes in transparency impact Freedom of Information Act reporting. Additionally, there is a body of literature addressing nonmission goals concerning democratic values see Rosenbloom and Piotrowski (2002). In a departure from this strand, I examine increased transparency in existing programs and explore its effects on non-mission specific goals. Because measuring goals is ultimately about measuring outcomes – a notoriously difficult task; I use a Local Education Agency's (LEA) consumption of federal funds (with and without increased transparency) as a measure of the agency's value placed on the non-mission specific goal. Specifically, I use a natural experiment to examine how new reporting requirements under the American Recovery and Reinvestment Act affected the consumption of funds for an educational technology program (Enhancing Education Through Technology – E2T2) in two states, Florida and Kentucky.

I examine non-mission specific goals in this manner for two reasons. First, the question is novel. While Piotrowski and her colleagues examine commitment to non-mission specific goals in federal agencies, I do not know of a study that explores this at the local level. By examining the impacts on local governments we gain a better understanding of how transparency affects governments as a whole, e.g. are the effects different between different levels of government, and if so how? Second, while Piotrowski and Rosenbloom (2002) examine how changes in reporting requirements can affect non-mission specific goals (specifically

commitment to FOIA), their analysis looks at specific policy provisions under the National Performance Review. My study of non-mission-specific goals addresses how changes to transparency requirements for an existing educational technology program affected the consumption of funds for that program. So rather than looking policy provisions, I examine effects within the context of specific programs.

This addresses a gap in the literature in two ways. First, studies such as this in the local context are novel. Second, by examining local governments it is possible to draw distinctions between how transparency affects governmental decision making at differing levels. This is important given the fact that local governments behave differently than their state and federal counterparts (Trounstine, 2009). Budgetary concerns are different, and service provisions are different. However the effect of local government decisions has impacts beyond the proximity within which they occur. According to the 2010 US Census, 66.8% of individuals employed in government jobs worked at the local level (compared to 8.4% in the federal government and 24.8 at the state level). So by examining local governments this study provides a more complete picture of the effects of transparency as a whole, but also examines transparency in the area where most government employees work.

This gets a broader question within the discussion of transparency. There are those who argue that increasing transparency will promote positive behavior change. Likewise there are those who argue that increasing transparency will cause managers and organizations to become more insulated. The theory and hypothesis I present argues the latter – with a caveat. I argue that transparency will typically be a low level concern unless it causes a manager to be concerned for their own wellbeing. So in effect, transparency does not promote positive behavior, nor does it necessarily promote negative behavior. However when it reaches the level

of causing potential harm to a manager or their budgets, then managers will act in an anticipatory manner to preserve their budgets, even if such action does not comport with the overall mission of the organization.

Working from theories provided by Morris and Shin (2002), Demertzis and Hoeberichts (2005), Dixon et al, (1998) and Wechsler and Backoff, (1986) I propose that increased transparency can have a negative effect on the activities of an organization by making managers increasingly insulated. Specifically they can impose additional reporting costs and can lead to future negative consequences – see Morris and Shin (2002). However, not all transparency rises to the level of a threat. Reporting which has the potential to make an organization look inefficient or bloated may be threatening. Additionally reporting which dramatically increases reporting costs may be viewed as threatening. Because different organizations can have dramatically different budgets the potential costs of transparency can be incurred more easily by some organizations than others. Still, managers are not simply receptors of policies, so my theory goes on to argue that if managers expect to incur such costs, they will act in an anticipatory manner to reduce risk to themselves and their organizations.

Specifically managers will act to stave off potential threats to their agency, even if it means foregoing additional funds (- see Dixon et al, 1998). However, such actions require judgments about the value of the activities being funded. So a tradeoff exists between the value placed on the non-mission specific goal and practical budget considerations. This is my reason for choosing the two cases for the study of the program in question. In examining the E2T2 program I selected Florida and Kentucky. Both states rate above average in their value for

educational technology¹; so both would theoretically see a value in the E2T2 program. However they show marked differences in their budgets, specifically local tax effort towards education.

The treatment I use for increased transparency is the additional reporting requirements put in place under the American Recovery and Reinvestment Act (ARRA). Under ARRA new transparency requirements were implemented from the local level all the way up. This new transparency was especially novel in the educational sector which had typically assumed states as unitary actors for allocating federal dollars to local education agencies. Transparency requirements for LEAs previously consisted of reporting financial and program data back to the state which then compiled the data and reported findings.

Under the new program requirements, the responsibility of LEAs changed to both reporting as-well-as interpreting data which would impact future allocation of funds. However reporting requirements incur both direct and indirect costs. Additional evaluation criteria, new data collection techniques, new metrics, etc. all can serve to increase the man-hours of an agency. Additionally, new transparency requirements can lead to noisy information² being delivered to policy-makers. This in turn can lead to outcomes that are potentially worse for the agency than would otherwise be the case – (see Morris and Shin, 2002 and Demertzis and Hoeberichts, 2005 for a discussion of transparency and outcomes). Piotrowski and Rosenbloom (2002) have demonstrated that in the presence of increased transparency, results oriented agencies have difficulty funding non-mission specific activities. Why should this be any different at the local level where repeated devolutions have already stretched budgets? This

¹ This ranking is provided by the Center for Digital Education. It is discussed in greater detail below.

² Noisy information is discussed in greater detail below. The idea of noisy information is that in addition to the important information (the signal) increased transparency can increase the level of ancillary information (the noise). This occurs because reports are snap-shots in time that do not always accurately convey agency activities and may in-deed provide a skewed picture of agency activities to those who are not experts in the agency's activity.

would seem theoretically relevant since the entire reason for ARRA was providing increased funding for severely damaged budgets.

Several educational areas received ARRA funds including: Title I schools (At-Risk and Low Performing), Title II (Education Technology) and the Individuals with Disabilities Education Act (IDEA). ARRA used a typical grant structure. Funds were awarded to states on a competitive and a formula basis. The states then issued requests for proposals (RFP) to LEAs. Funds were awarded to LEAs on the basis of both competitive and formula grants. With the push for transparency under ARRA, LEAs were required to provide quarterly reporting to state education associations on the expenditure and use of funds (ARRA, § 1512). Given that reporting responsibilities were devolved to local agencies instead of monitored by the state it is reasonable to assume that LEAs would disperse funds to serve best their interest. A point evidenced by the fact that most SEAs and LEAs used ARRA funds to backfill federal, state and local budget holes (Ellerson, 2009). However this was not the case for E2T2. As such it provides a good evaluand to examine the impacts of the devolution of regulatory and financial reporting requirements which are the hallmark of ARRA's transparency initiative.

Background and Context

Enhancing Education Through Technology - Purpose

When considering the impact of increased transparency for existing policies the E2T2 serves a nice study. A criticism of ARRA funding was that it largely amounted to a stop-gap to backfill federal, state and local budget holes (Ellerson, 2009). However, ARRA allocated funding to states specifically for the E2T2 program (as opposed to an all-purpose deposit into a state's general fund). The technology requirements under the Title II provision are funded by the federal government through E2T2. However, they do not figure into state or district accounting

for Adequate Yearly Progress (AYP) and are thus classified as non-mission specific. So if a state or LEA fails to achieve its stated goals within the E2T2 program, their federal accountability rating is not affected. The mission of E2T2 is to provide technology literacy to students and teachers. Additionally, schools receiving E2T2 grants use the funding to pay for infrastructure (internet connections) as well as hardware and software for their schools (laptops, desktop computers, educational software, etc.).

E2T2 is divided into two programs, one based on competitive allocations and the other on formula allocations. I focus here on the competitive grants since formula grants are simply awarded with significantly less reporting requirements. Focusing on E2T2 competitive funds allows me to consider the strategic decisions of LEAs in applying for funds. E2T2 provides technology training and professional development in grades 3-8 in order to assist LEAs in using technology to enhance learning and instruction. LEAs completed an application which was scored and ranked by state education association (SEA) assigned raters. E2T2 funds were typically provided to high poverty districts; a result of the grant's scoring criteria with additional points awarded for a higher free and reduced lunch status.

E2T2 – Funding and Evaluation

The US Department of Education (ED) provided four categories for how funds in this program should be expended: A) Teaching effectiveness and school improvement practices; B) Data and Learning Management Systems; C) 21st Century College and Career Ready Standards; D) Effective Interventions and Intensive Support. These categories are quite broad and can encompass a great many activities. To deal with the broad categorizations and provide additional guidance on the types of activities under each category, the State Education Technology Directors Association provided a listing of specific activities – see Table 1:

Table 1: Methods of expenditure of E2T2 funding – source State Educational Technology Directors Association

Methods of	
Expenditure	State Education Technology Director Association Guidance
Teaching	• Using software which has been shown effective in improving performance on formative assessments
effectiveness and school	• Using school based technology coordinator and coaches to provide technical assistance to teachers and students
improvement practices	• Measuring the impact of professional development to improve teachers' abilities to increase technology literacy
	Acquiring systems to collect and manage data on teacher practices and personalize pedagogy to student needs
Data and Learning Management	• Developing online formative assessments to provide teachers with data on student technical abilities
Systems	• Implementing a Learning Management System to allow teachers to manage instructional practices and material
	Creating or expanding a statewide longitudinal data system to track student performance
	• Using project based learning in the classroom to prepare students for the technology demands of the 21 st Century
21st Century	• Making use of technology to facilitate rigorous interactive content delivery which would not normally be available
College and Career Ready Standards	Developing activities to promote implement and expand the use of technology in classroom activities
	• Developing opportunities for students to use online courseware and learning activities in math and science
	• Developing performance measurement systems to evaluate the effectiveness of Ed-Tech finds
	Developing activities which are carried out in supplement with other Ed Tech, state and local funds
Effective Interventions and	Acquiring technology which is accessible to all students including students with disabilities.

The level of funding an LEA applied for was at the discretion of the program manager.

LEAs may apply for funding once per year (typically in May with funds allocated in August).

The applications were scored on a matrix comprising factors of how the money will be used (see table 1), the ability of the projects to be successful (the capacity of the LEA to accomplish what it says it will accomplish), and upon need (more weight is given to high poverty areas).

Competitive grants could be continued or awarded over multiple years (although not necessarily

• Instructing teachers to use instructional technology which are proven effective as

• Providing secondary school students with access to free online courseware in core content

disabilities

instructional aids

Intensive Support

sequentially). In this study, I use LEAs that received funding every year over a four year period.

Methods of evaluations changed after ARRA. Under the original (pre-ARRA) method each LEA submitted a 6 month progress report and was subjected to end of year evaluation for each project undertaken with the use of E2T2 funds. Additionally, every LEA submitted a technology plan to the SEA in order remain in compliance with the program. This plan consisted of counts, types, and access to technology within schools. Post-ARRA the frequency of reporting increased to quarterly. Evaluation requirements increased, now consisting of internal as well as external evaluation of projects. This included internal and external accounting for infrastructure, student and teacher technology assessments, and pre/post evaluations for professional development. The requirement for submitting technology plans stayed the same.

Previous Research

Given the lack of research specifically addressing the topic at hand, I rely on literature from Piotrowski, Rosenbloom, Fung and their colleagues regarding transparency and non-mission specific goals at the national level. I also address the literature on accountability and the impact of changes to accountability systems on SEA and LEA behavior.

Strategy, Transparency, and Non-Mission Specific Goals

Piotrowski and Rosenbloom (2002) provide an in depth discussion of the differences in reporting of mission specific measures and non-mission specific measures. Their findings indicate that non-mission specific measures show little salience in results oriented organizations, e.g. given that the program in question deals with education technology as opposed to education writ large one could reasonably expect to see decreased concern for the program in a results oriented program. The above statement reflects findings from Nicholson-Crotty and O'Toole (2004). They found that additional tasks placed on police officers (their non-mission specific tasks) had decreased importance to both management and the staff themselves. With the myriad

of state and federal reporting requirements for mission-specific goals, it is not difficult to imagine that limited importance would already be placed on non-mission specific goals in LEAs.

The rhetoric of transparency in public organizations has pervaded public discourse both for what the public knows about what happens within public organizations, and perhaps most pointedly, for what they believe happens in public organizations. Transparency matters because people care about what goes on in their governments. A 2002 First Amendment Center/American Journalism Poll indicated that, "48 percent of Americans feel they do not have enough access to government documents," (Piotrowski, 2007). The substance of this belief was another matter which reflects a well-established fact in the study of political science, that people are largely ignorant of policy. This has a bearing on the impact of transparency in agencies, a point previously addressed in the legislative policymaking literature (Arnold, 1990; Snyder, Ansolabehere, and Rodden, 2008). Specifically, people's ignorance of policy leads them to prefer positions which may make sense to them, but which can lead to collective action problems and are often antithetical to the policies proposed by policy experts and technocrats. This has bearing on transparency because citizens seek transparency in government (Piotrowski and Van Ryzin, 2007), but are unaware that increased transparency may increase agency costs and make outcomes less efficient (Fox, 2005; Morris and Shin, 2002)³.

The idea that transparency imposes costs is not new. Fung, Graham and Weil (2002) provide an excellent synopsis of this fact,

"New facts alter competitive advantage and change the benefits and costs for disclosers.

They empower some interests and threaten others, rearranging the political environment surrounding the transparency system."

³ Note that none of the authors mentioned here call for removing transparency; nor are they suggesting that transparency is in-and-of-itself costly. However, they do suggest that the call for increased transparency concerns by the public can become politicized issues and reach a point of diminishing returns where the level of information becomes superfluous and hinders efficient decision making.

They go on to argue that transparency can be a normatively good thing, but also that it can devolve into costly paperwork exercises with no real purpose. Transparency costs are of two kinds: Direct and Indirect (Davis et al, 1999; Arrow, 1962). Direct costs arise because effective transparency requires providing accurate information. At the very least this requires a well-functioning information system and labor inputs from evaluators and other technology resources. For my purposes though, the indirect costs of transparency are the more interesting. Indirect costs may arise from the intensity of policy decisions in response to what is found within the new information.

Indirect reporting costs are found in the logic of administrative procedures. These costs must be kept in context, i.e., that they are typically applied only if they provide information about something the public readily cares about⁴. Transparency is a means by which legislatures can control bureaucracies. Procedural requirements permit legislatures to control agencies without paying much attention to them (McCubbins, Noll and Weingast, 1987). They may require agencies to collect and disseminate specific information, and in doing so they increase the costs to agencies of altering policies which are favored by specific groups.

As stated above, the potential for indirect costs does not mean the costs will be incurred. To argue that otherwise requires one to assume that the public is responsive to transparency as a general theme. In her 2010 work Piotrowski implies that effective accountability balances democratic accountability with accountability for results. So there may be areas of reporting that the public simply does not care about. Van de Walle and Roberts (2008) give reasons why this would be the case, i.e. increases in information do not necessarily beget an informed public nor politicians willing to make changes. As such, disseminating information gives the illusion of control even though the bureaucracy is aware the public largely does not pay attention.

⁴ This does not argue for the source of the concern, i.e. a genuine concern or something revealed via focusing event.

A more specific conception of how such processing can be harmful was demonstrated Morris and Shin (2002) and Demertzis and Hoeberichts (2005). By increasing the amount of noisy information, transparency forces an increased use of private judgments by policymakers. Noise introduces uncertainty by adding additional information which may be unnecessary for assessing the proper functioning of a program vis-à-vis its defined criteria for success. If data equal signal plus noise, then increases in transparency have the capacity to increase both signal and noise. Evaluations and reports are snapshots in time that do not necessarily reflect movement towards an organization's goals, especially when goals long term or have long start-up periods.

Consider that a program may report outcomes once per year (a typical scenario for education). If it must issue quarterly reports then the program is issuing three reports showing it expenditures on activities and infrastructure, but with no outcome measures to show for it. Only in the fourth report can they truly know whether they are efficient, effective, etc. So if a report shows dollars being expended but that results are not yet occurring then policymakers only receive portions of the signal and a great deal of ancillary information until the program can show several years of data (after all it is not desirable to make long term decisions on a single report). So because the information provided is noisy, policymakers are forced to rely on private judgments in coming to conclusions.

How can increased information be harmful: Costs and Policies

The detrimental effects of increased public information come from the fact that policymakers overweight public information specifically because it is public, i.e. it is readily available to both policymakers and to groups with an interest in agency activities. This type of overweighting of public information occurs, despite the fact that it may present an incomplete

picture (Bartels, 1991; Mayhew, 1974; Arnold, 1991; Dahl, 2006). Overweighting information necessarily underweights noise thus giving the noise larger relative effect. Because this occurs, managers may not necessarily pay attention to transparency writ-large, but rather ask whether increased transparency can affect them. For example, FOIA requirements exist for all public agencies but not all manages concern themselves with them (Piotrowski, 2002). However if a new rule requires that all receipts be displayed on an agency website, then managers will increase their attention. This is because such requirements have direct costs (scanning, posting, server maintenance, etc.) and indirect costs (interest groups pointing to individual receipts out of context – a hotel bill for a conference may be seen by some as wasteful spending). So if managers believe new requirements can affect them then one may expect to see some change.

The places the anticipatory behavior proposed by Dixon et al (1998) within the context of Fung, Graham, and Weil (2008) who find that transparency policies are often adopted in a retrospective manner by credit-claiming politicians. Although these policies tend to produce negligible public benefits⁵, they can significantly increase reporting costs. Agencies engage in anticipatory analysis on a regular basis when considering organizational change and strategic management (Dixon et al, 1998; Wechsler and Backoff, 1986; Boyne and Walker, 2004)⁶. What I refer to as strategies are what Boyne and Walker (2004) refer to as a *Combination of Stance* and Action. Boyne and Walker identified 15 potential interactions between stances and actions. They make the case that certain strategies produce better outcomes for organizations than others, but do not provide empirical analysis of this claim. Using their taxonomy, the particular combination herein is of the defensive manager and a market context, i.e. a manager defending his organization by reacting to market forces.

⁵ They do cite lending, restaurant hygiene and financial disclosures as area which have had a significant beneficial impact.

⁶ Note though that I am dealing with a taxonomic strategy in single organizational type.

There are of course strong arguments for transparency. Piotrowski and Borry (2009) note that the greater the level of public information, the easier it is hold public officials accountable. . With the incentive of bureaucracies to maintain secrecy (Moe and Bendor, 1985) and the tendency to remain secretive (Weber, 1968) it is desirable that there be transparency in order to maintain accountability. Piotrowki and Borry (2010) emphasize the necessity of public activity for public information to have meaning. However not all transparency creates positive effects. There is the traditional collective action problem associated with interest group theory. By serving their own interests, groups may do public harm, e.g. incomplete information, regardless of how benign, has the potential to be framed as waste, abuse, etc. In response, policymakers may be incentivized to take actions or positions that put negative pressures on agencies.

Finance as a Measure of Goals

When one discusses finance with regards to particular outcomes they are making a judgment call (Hanushek, 2005). Because of this I avoid discussing questions of adequacy and rather use finance as a proxy for a particular (non-mission) goal. With regard to practice, the accounting literature is explicit that the use of budgets can be used to measure managerial goals. Moreover, it is clear from Otley (1978) that distortion of financial information within organizations can often be the result of managers diverging from organizational goals. This is interesting since Boyne and Walker (2004) argue that managers are often the puppets of broader organizational strategies, while Otley (1978) argues that managers can subvert organizations. This is not unexpected but is a well-established principle given the work of Rosemary O'Leary.

Theory and Model

There are two issues which inform my theory: first is the issue of imperfect information.

Because transparency increases public information, managers ask whether this new information

can affect them. Second, should managers find that the information will affect them; they will act in an anticipatory manner. If threat of increased scrutiny can induce a particular behavior, as demonstrated by Hanushek and Raymond (2004, 2005 and 2006) then one would expect an LEA to act in a manner which maximizes its utility. In this case, utility is defined by the amount of funding they receive. So when they encounter lean times this means that an organization would seek to protect programs that contribute to their measureable outcomes, possibly at the expense of those programs which do not⁷. This implies they would divert funds from programs that are not mission specific. This means that there may be situations when managers in LEAs have an incentive to forego additional funding if that funding will lead to increased reporting costs and other risks (multiple reports with incomplete information

Because E2T2 is non-mission specific, if my theory holds then an organization that places less value on educational technology could go one of two ways: (1) they could simply seek the same amount of funding and roll the dice since they are not acting in a strategic manner. Or (2) they could forego the additional funding in an attempt to weaken a program in which they do not see value. But how does one tell which is which? An externally validated measure of the value an agency places on technology should go far in addressing this. If there is lower value on education technology, one would expect to see larger cuts in areas that contribute to the program, i.e. not just cuts to the program but also to the support mechanisms for the program. So there are two means of conceptualizing the value of a program.

Funding decisions do not exist in a vacuum. States and LEAs differ in educational attainment, local effort to education, social service provision, etc. In turn these factors may influence the decision of an LEA to pursue non-mission specific goals, i.e. high poverty areas with low education funding are already less likely to see a value in educational attainment and

⁷ Note that Piotrowski (2010) argues a point similar to this in the context of non-mission democratic values.

would thus be less likely to see a value in educational technology. This is not so clear for other areas such as those that have high poverty but also contribute a large percentage of an already small tax base to education. With this in mind, the relevant model would need to control for: the value placed on the activity in question, pre-existing performance differences, poverty, local effort; and the proportion of minority students⁸.

Selection and Method

This study examines LEAs in two states Kentucky and Florida. These states were selected based on a variety of criteria: they are squarely in the median in terms of education performance per Peterson and Hess (2005, 2006, and 2008). The Peterson and Hess studies were used instead of just performance on state tests because of the much-noted lack of standardization in cross-state measures. They found that many of the states which ranked higher in AYP were much less aligned with NAEP standards than states which introduced more rigorous accountability systems. Additionally, they both place a high value on educational technology per their rankings from the Center for Digital Education (CDE).

If education technology is already non-mission specific, and the SEAs and LEAs are results driven, then one could reasonably expect to see an already decreased concern for this program as opposed to mission oriented programs. This means that any attempt to measure goal attainment in the non-mission specific area would need to account for the discrepancy between the values placed on mission versus non-mission specific goals in each district – a nearly impossible task given the difficulty of measuring outcomes in just a single agency. Because of this difficulty I rely on funding as a proxy and use an externally validated measure of the value

⁸ **Poverty**: since it is a factor both in determining eligibility for applying to E2T2 and may incentivize a district to pursue additional funds regardless of the impact on a program;

Local Effort: since this is indicative of the proportional level of support the community has for education; **Minority Students**: because racial composition is a correlate of an At-Risk district, again the district may seek funding in lieu of increased transparency.

placed on educational technology, their Center for Digital Education rankings, as a means of accounting for differences in previously held values for the non-mission specific goal.

The CDE rankings were used because they should theoretically control for the value placed on educational technology. These rankings were based on the proportion of schools with access to high speed internet, availability of and level of access to online education programs in K-12, and the degree of professional development required for teachers which focuses on integrating technology and pedagogy. The measures in these rankings included the prevalence of K-12 online education ventures, the reciprocity of online and digital licenses with departments of education and local education agencies, online professional development for educators, and a variety of other variables addressing the perceived importance of educational technology.

Finally, the states show large differences in the proportion of funding going towards education. As a percentage of their budgets, Florida contributes much less to education than Kentucky. This is largely due to higher property values in Florida. Because of the similarities among Kentucky and Florida with regards to performance and educational technology, but differences with regard to funding, if managers are acting strategically then there should be a difference in the types of valuations which occur between these two states. They both have concerns over the same things, but because LEAs with larger budgets can more easily absorb additional costs than LEAs with smaller budgets, the decisions they make in response to increased transparency may also be different.

Expenditures are often used to track the activity of public agencies (Lipsky, 1981; Wilenksy, 1974; Atkinson and Van den Noord, 2001). By tracking the changes in monetary expenditures of an LEA it is possible to track an increase or decrease in agency activity (Camerer and Hogarth, 1999). The E2T2 program operated under the pre-ARRA model with limited

transparency requirements, but also under ARRA's enhanced transparency requirements. As such, if increased transparency and the subsequent theorized ability of LEAs to influence decisions has any merit then there should be a discernible difference in expenditures in between these two periods.

The dependent variable in this study is the allocation of federal dollars to district from E2T2. Because the total to states changed over the four year period, I normalize the expenditures by the amount changed. In this way the results of the LEA's impact are not confounded by changes at the federal level. E2T2 allocations are based on the quality of the application and the stated need and data provided by the districts. Because poverty index is given extra weight in the scoring grant applications, high poverty districts tend to receive more awards than lower poverty districts. To deal with this, I disaggregate the free/reduced lunch data throughout the analysis.

Independent variables include non-school community inputs as measured by local tax effort going towards education (L); the district's poverty level (P); the proportion of minority students (those who are not White-non-Hispanic) (M); and a dummy variable for pretransparency (0) and post-transparency (1) (T). The ratio of change in the dollars going to support services and the dollars going to the instruction are also included (RS). Finally, a series of dummies are also used: state (0=KY, 1=FL) (S); state*transparency (S*T); 1=post-ARRA, 0=pre-ARRA; state*Local Effort (S*L); Transparency * Ratio of Support Services (T*RS). Additionally, I use a dummy to account for the period in which the country was in a recession from 2007 to 2009. This is necessary since transparency continued after ARRA was passed, but ARRA was passed because of the recession.

The percentage of students in poverty was used because it has been demonstrated that LEAs often over-report their National School Lunch Program data because it is tied to additional

Title 1 funding (Dunifon & Kowelski-Jones, 2003). Per the E2T2 RFP, additional weighting is given to high poverty LEAs, so the inclusion of these factors can control for changes seen in the allocation of funding based solely upon need, and focus more directly on pre and post-ARRA.

Local Effort was used instead of other measures such as per pupil allotments because it is a more accurate measure of fiscal disparity than per pupil allotment which is supplemented by state spending (NYED, 2002). Also, Downes & Pogue (1994), Duncombe & Yinger (1998) and Fisher and Papke (2000) note that aid formulas such those used to account for per pupil index rarely capture the environmental factors associated with poverty, e.g., Local Effort is fundamentally linked to fiscal capacity. Because of this, Local Effort not only serves as a measure of fiscal disparity, but also elucidates the relative values the citizens see in using their own finds to pay for education. If they see low value, it is likely the LEA would seek to draw down more federal funding in an effort to avoid increasing the tax burden on the voting public. In the two states in this study, the average local effort fluctuated widely over the four year period, partly because of differing tax structures and partly because of overall poverty. As noted in the NYED (2002) study, Local Effort is typically low in LEAs with high and low incomes. Higher Local Effort is seen in LEAs with median incomes. The ratio of instructional dollars to all support services was used as an indicator of whether districts were in fact circling the wagons around their mission specific programs. If they were, then one would expect to see the level of support for instruction go up while support services go down.

A generalized least squares approach was used. Using OLS the Durbin-Watson statistic indicated autocorrelation – this would be expected since agency performance is correlated over time (Rogoff and Sibert, 1988); second I anticipate change over time. However I do not use a

lagged dependent variable so GLS makes sense. This is because the inclusion of one or more lags in the dependent variable creates multiple concerns, not just autocorrelation (Greene, 2006).

Because the question is concerned with the consumption of funds for a specific program, I also estimate the same model using total federal funding to a district less the E2T2 funding as the dependent variable. Note that I do not use the federal funding less E2T2 as a control variable because it is perfectly correlated with the dependent variable and as such would artificially inflate the explanatory power of the model. Additionally, if the model explains changes in E2T2 funding as well as federal funding less E2T2, then the theory would not hold since any effect in E2T2 would be spurious because it would have occurred in the total federal allocation anyway.

Since E2T2 funds are competitive grants the *n* is necessarily small. The argument could be made that the decision to pursue these funds in the first place is a tacit acceptance of the new transparency requirements. To address this, I examined the activities stated in the grant applications for each district in question (available at the State Education Technology Directors Association). I specifically looked at whether the activities were expanding new programs, or continuing existing programs, i.e. was the activity stated as being a continuation of an activity which was being engaged in during a previous round of funding. In the cases of KY and FL the stated usage of funds included technology purchase (stated as laptops for teachers and students and software), paying salaries, and funding the states' virtual school programs. In the post-ARRA period, the programs were all listed as maintaining, rather than expanding, i.e. the types of activities listed were the same as the year prior to ARRA being implemented – purchasing laptops for teachers and students, paying salaries and funding the states' virtual school programs.

Unfortunately, information was only available for awarded grants; as such I was unable to compare funded and unfunded grant applications. However, allowing for lags from states

which received funding one year and not the next introduces additional error into a measure of change in funding in pre and post ARRA periods because a state's not being awarded funding can be viewed as an external assessment of the state's proposed or previous use funds, something I cannot account for and which is not readily captured in a fixed factor.

Hypotheses

The main hypothesis is that there will be differential effects for both states and transparency as well as between LEAs. Since both states already place a high value on education technology, the degree of local effort should affect decisions in the application level. So LEAs which already have a higher local effort can simply absorb the increased costs and transparency therefore any response to transparency would be seen in LEAs that cannot readily absorb costs. Another alternative is that there will be no change whatsoever. Typically this would be the null, but there are at least two reasons why no change would be seen, only one of which leads one to conclude that there is no effect. First is that transparency simply is not a major concern and that organizations are more concerned with simply maintaining their budgets. The other is that organizations are essentially gambling, i.e. transparency may potentially be a big cost to them but they simply cannot continue providing services with any less than funding.

If the former is the case then we should not see interactions with other costs such as dollars going to instruction. If we do see changes in response to spending in other areas, then this may be caused by strategic decisions by managers. As these hypotheses apply to the two cases at hand, if a district places a high value on the non-mission specific goal, but has a lower local effort (as in FL) then operating under the above theory, there should be a decrease in the consumption of funds since the LEA would be making an anticipatory decision and protecting its current resources. However if the value placed on the non-mission specific goal is less than that

placed on practical budget concerns, one would also expect a reduction in the consumption of funds. If this is the case though, one would still expect a state where LEAs have a higher local effort to show a decrease in their consumption if they are acting to preserve a valued non-mission specific goal. Since both KY and FL have relatively high rankings from the CDE, but KY has much higher local effort, I expect FL to show no effect with KY still negative.

Table 2: Changes between and within states pre and post-ARRA⁹

	Pre-A	RRA	ARRA		
Measure	FL	KY	FL	KY	
Mean E2T2 Consumption	\$1,317,762	\$1,919,892	\$837,256	\$1,932,934	
Mean Local Effort	26.62%	61.83%	29.15%	63.37%	
Mean Poverty	21.34%	24.07%	21.03%	25.35%	

Of course it could be the case that the value placed on the non-mission specific goal has no effect on the consumption of funds and it is purely a decision based on practical budget matters. In this case I would expect both to be negative. Based on my theory I expect the model to perform well in explaining the proportion of educational funding lost from the previous year since the educational funding structure is largely determined by factors of poverty, local effort, etc. Additionally, since ARRA was put in place due to a recession and because Florida was hit much harder than Kentucky, there should be a large effect size for state * transparency.

Additionally, since local effort it largely determined by property values, there should also be a relationship between transparency and local effort. I use a Prais-Winsten transformation to difference the data rather than utilize simple differencing since I only have 80 observations.

Findings and Conclusion

Table 3: Initial Model – GLS residuals predicting cuts to education. (For ease of interpretation, the coefficients of interaction terms and dummies are the full change, rather than the initial coefficient of the dummy).

	β	σ	t value	p

⁹ Note that differences in Local Effort and Fund Balance are significant both within and between groups at a = .05; whereas differences in free/reduce lunch is significant between group but not within group.

(Intercept)	3.974E+11	1.101E+12	0.361	0.719
Local Effort in KY	-2.686E+11	1.62E+11	-1.658	0.102
Poverty in KY	-6.001E+10	1.138E+11	-0.527	0.6
Minority	2.895E+10	6.382E+10	0.454	0.652
Inst:SS	1.642E+12	1.567E+12	1.048	0.298
Transparency in KY	2.844E+12	9.937E+11	2.862	0.006**
State (FL)	-1.537E+12	9.825E+11	-1.564	0.123
Recession in KY	2.071E+11	7.507E+10	2.759	0.008**
Transparency in FL	6.828E+10	2.217E+11	0.308	0.759
Local Effort * Transparency	-1.393E+11	1.131E+11	-1.232	0.223
Local Effort in FL	3.422E+11	1.607E+11	2.129	0.037*
Poverty * Transparency	-1.621E+11	1.419E+11	-1.142	0.258
Poverty in FL	9.805E+10	1.95E+11	0.503	0.617
Inst:SS * Transparency	-4.905E+12	2.011E+12	-2.439	0.017*
Recession in FL	-2.081E+11	1.058E+11	-1.967	0.053†

R-sq = 0.423, Adj R-Sq = 0.299; F=3.803, note predicted - actual RMSE = 2.31, ** sig at .01; * sig at .05; † sig at .1

The model does a good job of predicting changes in educational spending with Transparency in KY having an especially large positive effect in total spending. This may suggest that the proposed theories are not correct and that decisions on funding levels have more to do with immediate values than with forward looking policies. This would seem to be the case since the value for recession in KY also predicts a large increase in education spending in the previous year in KY. Notable are the differences for the instructional: service ratio in the presence of transparency and transparency in FL. Theoretically this makes sense, being that FL was hit especially hard by the recession and that education spending tends to be a leading indicator of the amount spent on instruction.

Table 4: Full model: GLS Residuals including cuts to Education. (For ease of interpretation, the coefficients of interaction terms and dummies are the full change, rather than the initial coefficient of the dummy).

	β	σ	t value	p
(Intercept)	361.700	181.100	1.998	0.050
Local Effort in KY	1.543	27.180	0.057	0.955
Poverty in KY	-63.620	18.750	-3.394	0.001***
Minority	-5.581	10.500	-0.531	0.597
Inst:SS	-6.468	259.700	-0.025	0.980
Transparency in KY	-549.400	173.300	-3.170	0.002**
State (FL)	182.500	164.500	1.110	0.271

Ed Cuts	0.000	0.000	-0.656	0.514
Recession in KY	-5.672	13.040	-0.435	0.665
Transparency in FL	-42.840	36.460	-1.175	0.244
Local Effort * Transparency	30.140	18.800	1.603	0.114
Local Effort in FL	2.099	27.320	0.077	0.939
Poverty * Transparency	47.130	23.560	2.001	0.050*
Poverty in FL	86.350	32.110	2.689	0.009**
Inst:SS * Transparency	705.000	345.300	2.042	0.045*
Recession in FL	3.824	17.900	0.214	0.831

GLS (PW) Coefficients (under fitting test revealed p=0.119); note that I also included interaction variables for state and every control and transparency and every control but they did not significantly increase the explanatory power of the model. Note predicted – actual RMSE = 4.05; *** sig at .001; ** sig at .01; ** sig at .05.

The results indicate statistically significant effects for poverty in both FL and KY, however Transparency is significant by itself only in Kentucky; however, transparency and the change in the ratio of instructional to service spending had a significant effect in both states. Note the effect size of this interaction variable, a one unit increase in the ratio of instructional to service spending in the presence of transparency leads to a corresponding increase of \$705. The positive and significant effect suggests that in periods of transparency when spending on instruction increases relative to spending on other services, that (at least in this specific program) the managers will seek to make up for lost funding with additional grant funding despite the increased scrutiny. Note that it is interesting that this is only the case for cuts at the district level; cuts to general education expenditures do not seem to affect the amounts sought.

Also, note the different direction in poverty for FL and poverty for KY. In FL a one unit increase in the poverty rate for the average district led to an increased draw down of \$86 whereas in KY (in the absence of transparency) the corresponding draw is a decrease of \$67 for each period. It is interesting given the higher poverty rate in KY (in the absence of transparency), but the effect sizes are largely negligible since the amounts being discussed are in the hundreds of thousands. If local effort were also significant this may provide a means of interpreting this change since the higher local effort in KY would theoretically be more capable of absorbing a

cut, however this is not the case. As such, an interpretation of this interaction may have more to do with how funds were expended, i.e. items requiring deferred maintenance may not have been sought in areas with higher poverty and positions which were additional drains on budgets from long-term unsecured debt (retirement services) may not have been sought. However more data would be needed to substantiate this position.

A good step would have been to examine grant requests in states which did not receive funding, however this information was unavailable, as only the winners were publicly announced. A next step for me will be to examine states which received funding at different yearly intervals. If changes in the amounts received are significantly different than those who won each year, then it may be able to say something about the influence of strategic decision making among those managers (lowering requests to win, altering proposed activities, etc.). At this point though, it does not appear as though managers are making strategic decisions with regards to potential threats from increased transparency, but rather are making decisions based on practical budget concerns. Given the small sample size, these conclusions cannot be called definitive. However the fact that managers do not show meaningful changes in their behavior in the presence of transparency is an interesting finding.

Discussion

For those who argue on either side of the debate about whether transparency promotes positive or negative behaviors, the results from this study would seem to indicate that it does neither. Transparency may just be a low level concern; treated as an additional paper pushing exercise. Concerns over maintaining budgets at current levels appear to be maintained despite increases in transparency. It appears that the potential costs incurred from increased transparency as well as the increased evaluation costs associated with it are just filigree work.

This study examined whether increased transparency affected managers decisions regarding applications for federal grant funds. The relevance of the question comes in novelty because of location, but also in its implications for ideas regarding the effects of transparency. Given the effects of these interactions in the proposed model, it does not appear that managers are acting in an anticipatory manner. Rather it appears they are concerning themselves with immediate budget concerns. If strategic decisions were at work then according to the proposed theories one would expect to see this type of behavior in the presence of transparency. However one would also expect to see an effect from the reduction of total education spending in the previous year. The fact that there is an effect in the interaction between transparency and the current ratio of instructional to service spending (in the presence of transparency), but in the opposite direction, means that the managers in charge of these programs are more concerned about the real losses to budgets than about the potential for losses due to increased transparency.

What this says about the potential direction of the strategic management literature is also unclear given the sample size, but the potential implications are that the typologies of strategic managers (at least at the local level with regard to funding) need revision. Specifically, managers are more concerned with immediate matters than with future costs. It may be that transparency requirements are not the types of challenges that managers seek to defend against. If this is the case then it presents two additional questions: are these requirements just considered ancillary to the job of a manager? (an admonition made by Piotrowski, 2010). Or do managers not recognize the value of public information and the effects that it can have on their organization? By extension, if they do recognize the potential effects of increased public information, it may be that they have no reason to be concerned with what Dahl (2006) calls the apathetic majority.

The lack of response to transparency is interesting because it is observed at the local level and is observed in specific programs, not just FOIA requests. Given Piotrowski's (2002, 2007, 2010) findings regarding the national performance review and the relative importance of FOIA, it appears that limited concerns over transparency may span levels of government. This comports with Piotrowski's (2010) admonition that transparency requirements are currently considered ancillary to the tasks of most administrators. Even when there are additional requirements, which managers are legally bound to meet, this does not mean that they will necessarily change their behavior in one direction or the other. It may be that managers do not change their behavior in the presence of increased transparency because transparency is just not that big of a concern. The broader question is why?

If increasing transparency does not have an effect on the behavior of managers is it because they have no incentive to change? After all, transparency only provides the information; it is up to the public and policymakers to do something with it. So transparency requirements may have the effect of increasing access to information which is a normatively good thing for democratic values. This seems poignant taking Madison's (1822) argument for transparency that, "a popular government without popular information is but a prologue to a farce..." in comparison with Dahl's (2006: 119) "apathetic majorities." It is the case that having unabridged access to information is a normatively good thing (Cooper, 2004). However the findings here in conjunction with earlier findings suggest that until the public or policymakers have reason to utilize the information, the effects of transparency by itself will be negligible.

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