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## Strategic public management for financial condition: Focus on fund balances of school districts

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### ABSTRACT

Scholars have emphasized the roles of strategic public management and the financial condition but little is known about the link between the two. Finding the missing link is the purpose of this study. By analyzing data from K-12 Texas school districts, this study investigates how top managers' strategic efforts toward their superiors, subordinates, and external stakeholders affect the financial condition of school districts. The findings suggest that superintendents' managing upward toward school boards increases fund balances, whereas managing downward toward school principals decreases fund balances. Apparently, the relationships between school boards, superintendents, and school principals contain different priorities and incentives that influence their behaviors in managing school district budgets.

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### 1. Introduction

There has been a spike in research activity on how public management has affected organizational performance in the area of public administration over the past few years. In this regard, managers' leadership, employee motivation, organizational goals, cultures, structures, and managerial networking, to name a few, have been emphasized. The research shows that public management improves employees' perceptual performance (Brewer & Selden, 2000), students' academic performance (Meier & O'Toole, 2003), police performance (Nicholson-Crotty & O'Toole, 2004), and state government performance (Jacobson, Palus, & Bowling, 2010). To resolve complex public problems, the so-called *wicked* problems, and to supplement the limited resources available for organizational goals and survival, a body of studies has examined the significance

of public management as part of an organization's strategy (e.g., Agranoff & McGuire, 2004; Galaskiewicz, 1985; Jarillo, 1988; O'Toole, 1997; Pfeffer & Salancik, 1978; Ryu, 2015). Despite progress in this research, as of yet, relatively little attention has been paid to the relationship between public management (specifically, public managers' strategic collaboration behaviors) and performance in the context of local budgeting. Understanding the link between the two deserves scholarly attention because budgeting is one of the most important concerns for public managers. For instance, Gulick (1937) emphasized budgeting as one of an executive's core functions. Schick (1966) argued that budgeting allows managers to control administrative abuse, enhance efficiency in administration, and strategically plan for the organization. In the school districts from which this study draws its data, budgeting is one of the most important management tools used to further the district's educational goals and accomplishments (Hartman, 1999). Well-managed budgeting is a critical antecedent to organizational productivity (O'Toole

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& Stipak, 2002), administrative efficiency and economy (Willoughby, 1918), and responsibility (Cleveland, 1915).

Over the past few decades, due to recurring yet unexpected financial distress, a number of public programs have experienced budget shortfalls. As part of local governments, school districts have not been spared from the effect of such financial challenges. Due to the volatility in both external and internal funding (e.g., local revenue sources and subsidies from upper-level governments), it is likely that school districts will need to find a way to balance their budgets without compromising the needs of their students (Kim & Eom, 2016). In this vein, we were motivated by the need to ponder how to manage local budgets effectively in the public sector, which has long become central in the scholarship, through the lens of strategic management in the specific context of school districts.

Considering the deficiency of relevant empirical research and the lack of a more developed theoretical exposition, this study is expected to contribute to the literature of management and finance by filling the gap by empirically examining the impact of public management on the local financial condition. We first dimensionalize a top public manager's (here, a superintendent of a school board) strategic managing efforts into managing upward, downward, and outward and investigate the impact of each managerial effort on fund balances as a proxy for the financial condition of school districts. For the analysis, we used a superintendent management survey and other financial and personnel data from the 2004–2005 school year in Texas K–12 school districts.

The remaining sections of this study are as follows. The first section begins with the conceptual framework of this research. Definition and measurement of the financial condition of school districts based on fund balances are addressed. Key rationales for public management are also discussed. The next section explains the connection between each management effort and local financial outcomes in the context of school districts and then formulates a set of testable hypotheses. The third section describes the data and measurements for the analysis. The fourth section presents empirical results and a brief discussion of the findings. The final section offers conclusions and implications for public management.

## 2. The financial condition of school districts: focus on fund balance

The financial condition<sup>1</sup> is a complex and multidimensional concept. It is neither easily measured nor defined in a single perspective, and it depends on the fiscal structure that governments possess, the fiscal capacity that they garner, the threats and opportunities that they face, and the financial tools that they utilize (Hendrick, 2011). Indeed, the financial condition can be conceptualized as a government's ability to maintain existing service levels, withstand

economic disruption, and meet the demands of growth and decline (Maher & Nollenberger, 2009, p. 62). For school districts, in particular, the financial condition is of central importance, since it is directly or indirectly related to educational services and students' academic achievement. In school district budgeting,<sup>2</sup> federal and state governments have long continued to support local public education—public elementary and secondary—through aid based primarily on income and sales taxes. School districts have also relied heavily on locally raised revenue derived from property taxes (Kim & Eom, 2016). When necessary, they have issued bonds to fund the capital components of their budget (Nguyen-Hoang, 2012). Based on such financial resources, the financial condition of school districts may influence housing values, local business and economic development, human resources quality, the long-term credit rating on government bonds, and the tax burden applicable to citizens. Local government managers and key stakeholders need to pay attention to the changes in the financial condition to sustain the desired level of public services over both short and long periods of time (Honadle, Costa, & Cigler, 2004).

With respect to the financial condition of a district, Mead (2001) noted that the “financial condition is the ability of a school district to meet its obligations as they come due and to finance the services its constituency requires” (p. 59). According to the Office of the New York State Comptroller (2002), the financial condition is the ability of a school district to balance recurring expenditure needs with recurring revenue sources, while providing services on a continuing basis. In a similar vein, Ammar, Duncombe, Jump, and Wright (2005) and Duncombe, Jump, Ammar, and Wright (2003) viewed it as the ability to finance adequate student performance over the long run with reasonable tax burdens and without temporary disruptions of service. Taking these views together, this study posits that the “financial condition of school districts” refers to the ability of school districts to maintain balanced budgets by delivering adequate and uninterrupted public education service to their students based on its specific political and socio-economic circumstances, funding limitations, and the fiscal rules governing each school district (e.g., the tax burden).

To date, the literature has encompassed a variety of different measurements of the financial condition of state and local governments. However, despite some attempts, no common tool to assess the fiscal condition of school districts has emerged. For instance, to examine the financial condition of school districts, Ratcliffe, Riddle, and Yinger (1990) looked at school districts in Nebraska, focusing on revenue-raising capacity (through property taxes and

<sup>1</sup> In some previous research, the financial condition tends to be used interchangeably with the concept of fiscal health or wellness for local governments, including school districts (see e.g., Duncombe & Hou, 2014; Hendrick, 2011; Honadle et al., 2004; Ladd & Yinger, 1989; Smith, 1986).

<sup>2</sup> For public elementary and secondary schools, the ratio of revenue (federal, state, and local sources) tends to vary by state. In this study, the main source of funding in Texas school districts (FY 2004–05) was drawn from local revenues, followed by state revenues (for more information, see U.S. Department of Education, National Center for Education Statistics, Common Core of Data [CCD] (2007). Table 163: Revenues for public elementary and secondary schools by source and state or jurisdiction 2004–05. In National Public Education Financial Survey, 2004–05. Available at [http://nces.ed.gov/programs/digest/d07/tables/dt07\\_163.asp](http://nces.ed.gov/programs/digest/d07/tables/dt07_163.asp)).

other sources) and expenditure needs. More specifically, they recognized that there has been a gap between needs of school districts regarding district-specific expenditure changes and increases in school spending and the districts' own fiscal capacity to collect taxes and other fees or receive state aid. In their study, this gap was evaluated through a standardized fiscal health approach as described by Ladd and Yinger (1989). In addition, drawing upon two time dimensions (present and future), Mead (2000, 2001) examined each district's annual financial statements with common-size ratios, liquidity, financial position, solvency ratios, fiscal capacity, risk and exposure, and other factors (e.g., socioeconomic and demographic data and performance measures). Later, Ammar et al. (2005) and Duncombe et al. (2003) developed one framework, which was used for the Financial Condition Indicator System (FCIS) of the New York school districts. Basically, following the perspectives on financial condition measurement developed by Ladd and Yinger (1989) and the Office of the New York State Comptroller (2002), this system includes four components: short-run financial condition, long-run financial condition, economic condition, and student performance. These FCIS indicators are converted into membership levels sets (high, moderate, and low)<sup>3</sup> in fuzzy rule-based systems of evaluation (FRBS) and then combined into the overall performance evaluation (poor, fair, and good ratings).

Among a variety of financial ratios and indicators developed by previous studies, this study focuses on the "fund balance,"<sup>4</sup> which can be measured by the difference between assets and liabilities and is a good proxy for a school district's financial condition. In reality, school district budgets depend on fund accounting like other public agencies and have a large general fund that accounts for nearly 75–90% of total resources in the average school district (Odden & Picus, 2008). As such, a fund balance has been regarded as one of the short-run financial condition indicators and the most frequently cited financial factor in credit analyses (Ammar et al., 2005; Duncombe et al., 2003). According to Duncombe et al. (2003), the levels and trends in fund balances is helpful to provide information on whether local governments, including school districts,

are likely to face a budget crisis in the current year or in the following fiscal year. Similarly yet more specifically, the Texas Association of School Boards (2011, p. 1) noted that the fund balance of a school district represents a snapshot in time that will change as assets are collected and financial obligations are met, since it tends to cyclically fluctuate throughout the year. In particular, given that a positive fund balance provides explanations as to how school districts possess (or utilize) their financial resources to finance expenditures in the following fiscal period, a fund balance is important not only to measure a school district's financial condition but also to give an early warning if a district is falling into deficit (Bidin, 2012).

Interestingly, it is notable that little scholarly attention has been given to empirically examining fund balances solely (in particular, general fund balances) in the public administration and finance area. To the best of our knowledge, there are two recent empirical studies by Bidin (2012) and Duncombe and Hou (2014). The former study paid attention to Michigan school districts' fund balances (FY 2001–2010), which was measured as a share of the general fund expenditures; the latter focused on New York school districts' total unreserved and reserved balances of the general fund (FY 1982–2009), which were calculated by per-pupil value and the ratio of each balance as a percent of operating expenditures, respectively. Despite different time frames and local settings, for better financial condition of school districts, they discussed that attempting to maintain positive (somewhat sizeable) fund balances is important to manage school districts effectively in that it helps expenditure on major ongoing operating expenses without compromising parents' and students' demand for public education (even with a fiscal shortfall). The fund balance approach is thus expected to identify the ability of school districts to balance the budget, regardless of continuing political and demographic changes.

### 3. The role of public management: managing upward, downward, and outward

To operate public organizations and to accomplish organizational objectives, people and other considerable resources need to be coordinated (O'Toole & Meier, 2011). However, public management is more than just managing resources within organizations; it also manages the organizational environment by exploiting environmental opportunities and buffering organizations from environmental threats (O'Toole & Meier, 2011; Ryu & Johansen, 2015). In this regard, studies on public management have been broadly conducted. For instance, early management theorists viewed an organization as a closed system and sought "one best way." Representative theories fall under scientific management, represented by Frederick Taylor, and administrative management, represented by Luther Gulick. The early management theorists emphasized the division and coordination of work. In this regard, Gulick (1937) proposed the acronym POSDCORB—planning, organizing, staffing, directing, coordinating, reporting, and budgeting—as representing the principles of public management. However, the following scholars pointed out that early management theories lacked consideration of the

<sup>3</sup> If one district's indicator result is below (above) the fifth (95th) percentile, it is classified as fully in the low (high) set.

<sup>4</sup> A fund balance is neither a savings account nor a rainy day fund. It is the amount of assets in excess of liabilities. These assets include investments, delinquent taxes, accounts receivable and inventories (Texas Association of School Boards, 2011). In the literature, no clear distinction has been made between fund balance and general fund balance due to the general fund's central significance (Marlowe, 2006, pp. 359–360). Specifically, a fund balance, based on the sum of the general fund, the special aid fund, and the food service fund, can be divided into an unreserved unappropriated (UUB) fund balance (sometimes, it is called unreserved undesignated), unreserved (appropriated, unappropriated) fund balance, and reserved fund balance. Some portion of the total fund balance can be reserved for fixed uses (e.g., repairs, debt, or worker's compensation), but the majority of the remaining unreserved portion of the general fund balance may be spent in various ways (e.g., the unreserved unappropriated balance is usually used for temporary deficits or other financial emergencies) (Duncombe et al., 2003). In this paper, we focused on the general fund, known as the primary operating fund for districts, including short-term investments, receivable, and cash for analysis.

psychological aspects of laborers as well as contingent aspects of the organizational environment (Rainey, 2009).

It may not be easy to theorize about all aspects of public management in a uniform way; however, a framework of strategic public management needs to be developed and tested within the organizational context and with clients and stakeholders outside (Berry, 2009). For this reason, the present study adopts Moore's (1995) management strategy. By drawing upon managerial attention in strategic planning, he divided the roles of public management into three segments: (1) managing upward, (2) managing downward, and (3) managing outward. Managing upward is seen when top public managers interact with the political leaders who make decisions affecting the area managed, including personnel and budgetary matters (Moore, 1995). Managing downward is seen when managers interact with and manage their line subordinates (Moore, 1995). Managing outward is the process of managing stakeholders beyond the manager's organizational boundaries (Moore, 1995; O'Toole, Meier, & Nicholson-Crotty, 2005).

Paying special attention to three roles of public management, this study investigates how each managerial role influences an organization's financial condition in the context of school districts. The following section develops hypotheses regarding the relationship between each managerial role and the financial condition of the school district. It also includes a relevant literature review.

#### 4. Literature review and hypotheses

##### 4.1. Managing upward and the local financial condition

In the school district context analyzed in this study, superintendents are the top managers in school districts, and school boards are their political leaders.<sup>5</sup> Superintendents are considered to be appointed chief executives or professional administrators of school districts, managing day-to-day operations of their districts, such as preparing a budget, making revisions as requested by the board, and administering the board-adopted budget (Fusarelli & Petersen, 2002; Kirst & Wirt, 2009; Meier & O'Toole, 2001). Conversely, school boards are elected representative bodies that can function as counselors to provide broad guidance to superintendents (Grissom, 2014; Meier & O'Toole, 2001). Thus, their relationship can be explained by a principal-agent theory. Although school board members have the legal right to oversee budgets, hire or fire superintendents, and even award contracts (Hochschild, 2005; Wong, 2012), most school board members are not professional educators or administrators, and they know little of the complex issues requiring their approval at each board meeting (Cuban, 1976; Fusarelli & Petersen, 2002).<sup>6</sup>

<sup>5</sup> To test the hypotheses, this study focuses on those states where school board members are elected and superintendents are appointed by the board members (e.g., Alabama, Alaska, Arkansas). However, it should be acknowledged that in some states, superintendents are either elected (e.g., Arizona, California, Georgia) or appointed by the mayor (District of Columbia) or governor (Iowa, Maine, Massachusetts).

<sup>6</sup> School board members deal with not only education policies but also non-classroom policies. According to Hess and Meeks (2011), school board

Therefore, they render significant authority to superintendents and, in return, expect superintendents to control school districts on their behalf. Meanwhile, superintendents expect full support from their school board members in order to exercise leadership over their subordinates. Although a principal-agent relationship suffers from moral hazard and excessive monitoring due to information asymmetry, today's educational environment, accompanied by successful school systems, depends on collaborative efforts between school boards and superintendents (Awender, 1985). A well-rounded working relationship between the two key actors is significant for the school district to enhance school improvement, student achievement, long-range planning, and the quality and stability of its educational program (Fusarelli & Petersen, 2002).

The collaborative relationship between school board members and superintendents leads to a positive financial condition. Superintendents are, by nature, budget maximizers (Niskanen, 1975). Because the amount of a budget is set and given by the school boards, superintendents develop a collaborative relationship with school board members in order to secure as much budget funding as possible. Likewise, elected school board members have to respond to the preferences of a majority of their constituents because their elected status is incentivized to support superintendents in the pursuit of better school performance (Feiock, Steinacker, & Park, 2009; Sass, 1991; Stevens & Mason, 1996). In this situation, superintendents may succeed in obtaining more budgets from school boards by actively managing upward toward their school board members. Accordingly, the following is hypothesized.

**Hypothesis 1.** A top manager's managing upward toward political leaders above will have a positive effect on fund balances.

##### 4.2. Managing downward and the local financial condition

Like the relationship between school board members and superintendents, the relationship between superintendents and individual school principals also presents a principal-agent relationship (Meier, O'Toole, & Nicholson-Crotty, 2004; Meier & Smith, 1994; O'Toole et al., 2005). With the discretion given by school boards, superintendents have the authority, including the management of human resources, to effectively control their line subordinates (Bird, Wang, & Murray, 2009). However, it is the school principals who are responsible for managing the day-to-day affairs of their individual schools within a district. Thus, the performance of a school district depends on the leadership of each individual school principal. Principals' direct site-based management roles cover defining the school's mission, managing the curriculum and instruction, hiring teachers, and supervising teaching through monitoring student progress (Kirst & Wirt, 2009). More important, the school district budget process occurs *after* individual

members are a highly diverse group, which may give them a competitive advantage over superintendents to make decisions on non-classroom policies.

schools prepare their budgets and decide the allocation of their funds (diverse revenues). As such, principals are expected to be involved in preparing budgets for review and approval and making financial decisions that reflect the best interests of the school, as they have the responsibility for determining most of the items and amounts included in a budget (Hartman, 1999). In this regard, they have more knowledge and better information on actual expenditures and the expected revenue of schools to plan for the provision of adequate educational services than superintendents do. In such circumstances, principals have to respond to parents' needs and teachers' preferences (e.g., hiring better teachers who receive higher salaries, or constructing a new building) through increasing expenditure. Moreover, principals are budget maximizers and always attempt to secure more school budget funding from their school districts. Thus, principals have high incentives to increase expenditure for their schools, which can cause fund liabilities.

Moreover, in managing individual schools, principals of each school take better positions than their superintendents because principals hold more school-specific information. Due to such asymmetric information, principals may be better able than their superintendents to determine what proper managerial action should be and take a better position in school budget bargaining with their superintendents (Mishkin, 1991; Nooteboom, 1999), and superintendents may be more likely to accept principals' proposal to expand their school budgets, which, in turn, results in negative fund balance at the school district level. Indeed, this point is relevant to Mishkin's (1991) argument that asymmetric information between borrower (principals in this case) and lender (superintendents) in the market results in a financial crisis. Principals are likely to ask for a larger budget from their superintendents by expanding their programs, and superintendents who do not have more school-specific information than their principals are likely to meet the principals' requests. Accordingly, superintendents who actively manage downward toward their principals may be overwhelmed and co-opted by principals' asymmetric positions and their interests (O'Toole & Meier, 2004). As a result, this study expects that superintendents' active managing downward will lead to greater spending and, in the end, to more liabilities and a fund imbalance.

**Hypothesis 2.** A top manager's management downward toward line subordinates will have a negative impact on fund balances.

#### 4.3. *Managing outward and the local financial condition*

Recent scholarship in the field of public management has paid a great deal of attention to collaboration among multiple organizations that are not in the same hierarchical arrangement in order to respond to complex public problems (Agranoff & McGuire, 1998, 2003; Kettl, 1996; Mandell & Steelman, 2003; O'Toole, 1997). The motive for organizations to collaborate with external organizations may be best explained by the resource dependency theory. According to the resource dependency theory, most organizations do not have all the necessary resources to accomplish

their objectives; thus, organizations depend on external organizations for obtaining necessary resources (Pfeffer & Salancik, 1978). Exchanging resources motivates organizations to collaborate with one another. When resources are scarce and organizations must work at obtaining the scarce but necessary resources, managing outward toward securing such resources becomes a top managerial priority. Therefore, it may not be too much to say that the success or failure of organizations depends on managing outward.

Empirical research supports the importance of managing outward. For instance, Agranoff and McGuire (1998) investigated local development officials in 237 U.S. cities and found that facilitation of the cities' economic development resulted from city governments' active managing outward or contracting out joint financing. Similarly, Thurmaier and Chen's (2009) analysis on interlocal agreements in Iowa found that local managers' collaborative efforts led local governments to obtain financial resources from their partners, which resulted in a saving of public funds.

As with the existing literature, we expect, even though external stakeholders in school districts may not be directly involved in operational processes or the decision-making process in school districts, superintendents' greater interaction with their external stakeholders increases the likelihood of obtaining financial support if necessary. Accordingly, it is reasonable to hypothesize that superintendents active in managing outward are likely to improve fund balances.

**Hypothesis 3.** A top manager's managing outward toward clients and stakeholders will have a positive effect on fund balances.

## 5. Data and methods

### 5.1. *Sources of data*

To unravel possible relationships between the three roles of strategic public management and the financial condition, this study investigates Texas K-12<sup>7</sup> school districts in 2005. The data used in this study were drawn from one of the ongoing research projects by Meier and O'Toole (see, e.g., Meier & O'Toole, 2009). Every two years, Meier and O'Toole conducted a series of superintendent management surveys that ask about a superintendent's management style. This study incorporates results from the surveys conducted in the 2004–05 school year, which contained certain independent variables of interest to this study.<sup>8</sup> Other than the survey data, we utilized personnel,

<sup>7</sup> To promote the validity of our analysis and the consistency of our estimations, this study focuses only on K-12 districts that have both fiscal and operating responsibilities.

<sup>8</sup> We use the academic year 2004–2005 datasets, which may be old to some readers. O'Toole and Meier have conducted a superintendent management survey every two years since 2002. Thus, one may question why we use old datasets. Here is a reason. Our study aims at investigating the relationship between managing upward, downward, and outward, and the financial condition (fund balance). To measure managing downward, we used a superintendent's interaction with his/her principals. Unfortunately, after the 2004–2005 datasets, O'Toole and Meier stopped

financial, and district information obtained from the Texas Education Agency.

### 5.2. Unit of analysis

As a special-purpose local government, school districts provide us with a unique opportunity to examine, in several ways, the impact of public management at the local level. First, as previously noted, in addition to locally-raised revenues derived from property taxes, school districts are financed by federal and state aid based on intergovernmental relations. More than half of state and local government expenditure is spent in the area of public education in practice (Kettl & Fesler, 2009). Second, school districts are independent local government entities that have power to tax and to manage instructional personnel matters independently (Meier & O'Toole, 2003, 2009). Finally, Texas school districts, as common public organizations, embed a hierarchical governance structure and also employ more than one percent of public officials in the U.S. This allows us to investigate one of the most representative public organizations (Grissom, 2014; Meier et al., 2004; Meier & O'Toole, 2009). Thus, the selection of school districts in Texas as a unit of analysis produces meaningful implications for public management in general. However, unlike other public organizations, school districts are operated by autonomous, professionalized street-level bureaucrats (teachers), which make school districts distinct from other public organizations. For this reason, any findings from this study would require care in application to other public organizations.

### 5.3. Measures of financial condition of school districts

For the dependent variable, we focus directly on general fund balances (undesignated, unreserved fund balance)<sup>9</sup> as a proxy for a school district's financial condition, which can be measured by the simple difference between assets and liabilities. Even though a general fund balance can be temporarily affected by a district's need to meet its obligations (e.g., using interfund loans), it is an important concept in capturing the ability of school districts to maintain balanced budgets for delivering adequate, uninterrupted public education services, given their political

collecting data on a superintendent's interaction with principals. We cannot measure managing downward using updated datasets. Although we are using 10-year-old datasets, the relationship between managing downward and the financial condition found in our study is still valid in 2015, since the relationship was found to be as expected based on existing theories.

<sup>9</sup> Since 2010, statement No. 54 of the Governmental Accounting Standards Board (GASB) has been implemented in public organizations. The new classification of fund balances include nonspendable, restricted, committed, assigned, and unassigned fund balances (Duncombe & Hou, 2014, p. 2). However, since this study employed FY 2004–05 data for analysis (before the implementation of GASB No. 54), we used the terms "unreserved" and "reserved" here. More specifically, we paid attention to a general fund balance (undesignated, unreserved fund balance). In addition, it should be noted that the fund balance was measured by current financial resources on the basis of modified accrual accounting, following the measurement rule of governmental fund financial statements in the statement No. 34 of GASB.

and socio-economic circumstances, funding limitations, and fiscal rules. As noted earlier, some portions are spent for reserved uses for instructional services (salaries, benefits, and supplies), general administration, maintenance of school buildings, utilities, and other expenses associated with day-to-day operation (Odden & Picus, 2008, p. 246). On the other hand, unreserved (unappropriated) funds may be used for temporary deficits or other financial emergencies (Duncombe et al., 2003). According to Duncombe and Hou (2014, p. 4), the "unreserved fund balance is the most readily available resource once the need arises to cope with a revenue shock." In particular, the *undesignated* component of the unreserved fund balance tends to be available to finance general operating expenditures and the legal appropriation of school districts (National Center for Education Statistics, 2009; Texas Education Agency, 2006). From this perspective, this study posits that the unreserved fund balance is significant for a school district to maintain its financial stability and create a financial cushion to overcome unexpected budget shortfalls and emergencies (Texas Association of School Boards, 2012).

For the analysis, the fund balance variable is logged and its lagged form is also included as a control variable. In this way, endogeneity issues can be controlled, thereby producing more rigorous estimation results.

### 5.4. Measures of managing upward, downward, and outward

As previously illustrated, as a top manager, a superintendent is financially accountable for managing his or her school district effectively; this provides an incentive to devote time and resources to building up closer relations with different key stakeholders within or outside the district. We constructed three different measures of superintendents' collaborative management efforts as the independent variables in our model—managing upward, downward, and outward, as in Moore (1995) and O'Toole et al. (2005). Upward and downward management are measured by asking school superintendents how frequently they interact with each stakeholder (school boards and principals, respectively) within their hierarchical institutional arrangements, using a five-point scale ranging from "no interaction" to "interaction every day." Put simply, one indicates no interaction, whereas five indicates everyday interaction. For the third variable, we focused on a superintendent's frequent interaction with six external stakeholders who are not in the formal organizational hierarchy. The external groups include local business leaders, other superintendents, parental groups, federal education offices, the state legislature, and the Texas Education Agency. Interaction with each stakeholder is assessed on a five-point scale in the same manner as the previous variables. To generate the managing outward variable, a composite scale was created using factor scores after running principal component factor analysis. Based on factor loading scores, higher scores represent greater collaborative management support. In our model, it was found that six related variables are loaded on only one factor with an eigenvalue of 1.237 (see Table 1).

**Table 1**  
 Factor loading scores for managing outward.

Variable	Loadings
Local business leaders	0.734
Other superintendents	0.755
Parental groups	0.821
Federal education office	0.790
State legislature	0.751
Texas Education Agency	0.785
Eigenvalue	1.237

5.5. Control variables

In addition to the main variables of interest, this study controls for a district’s financial resources, school district characteristics, performance, and student composition. Financial resources include the amount of state aid. For school district characteristics, this study controls for teacher turnover rates, number of students enrolled, and the density of student population in the district measured by number of students in a district per 10,000 km as a proxy of the rural–urban indicator. School district performance is measured by the pass rates of an annual statewide exam, the Texas Assessment of Knowledge and Skill (TAKS). Finally, this study controls for the percentages of white students and economically disadvantaged students.<sup>10</sup>

6. Findings

Table 2 shows descriptive statistics of variables and their correlation coefficients. The results of correlation demonstrated that the variables of managing upward, managing downward, and managing outward are distinctive and independent measures. Correlation between managing upward and managing downward was found not to be statistically significant ( $r = 0.050, p = 0.218$ ). Although managing outward was found to be correlated with managing upward ( $r = 0.315, p < 0.000$ ) and managing downward ( $r = 0.253, p < 0.000$ ), the correlation was not high enough to call them similar. Moreover, coefficients among the three variables are positively correlated. In other words, one’s efforts in managing outward, for instance, does not necessarily negate his or her efforts on managing upward or managing downward.

Table 3 reports outcomes of a regression analysis. Model 1 in the table shows that managing upward is positively associated with the financial condition. In other words, one standard deviation increase in managing upward increases the fund balance by 10.4%. It implies that more active interaction with school board members increases the likelihood for superintendents to obtain more financial resources. It supports our first hypothesis testing the positive association between managing upward and financial condition.

Model 1 in the same table also finds a negative association between managing downward and fund balances. That is, one standard deviation increase in managing downward lowers the fund balance by 19.8%. As expected,

more interaction with principals increases the likelihood for superintendents to spend more financial resources to accommodate principals’ needs; thus, our second hypothesis is also supported from the analysis. What struck us was a considerable size of the impact of each variable, about 10% increase and 20% decrease in the fund balance for one standard deviation change in managing upward and managing downward, respectively. Previously, impacts of the roles of public management have been investigated to estimate the level of organizational performance; this study is the first to relate the role of public management to financial condition. We empirically confirmed that managing upward and downward do matter for financial condition. Contrary to our expectation, our analysis failed to find a statistically-significant impact of managing outward on financial condition. More discussion will follow in the discussion Section 7.

Model 2 in the table adds a lagged dependent variable to Model 1. As presented in the table, the adjusted R-square jumps from 0.540 to 0.859. This suggests that a lagged dependent variable can explain most of the variation in the current dependent variable. In fact, it was found that the lagged fund balance variable explained 85% of the variation in the current logged fund balance.<sup>11</sup> Thus, the lagged dependent variable leaves little room for other variables to explain the rest of the variation in the dependent variable. Given this fact, it is not surprising that many variables which were statistically significant in Model 1 are no longer statistically significant in Model 2. Nonetheless, managing upward and downward is found to be statistically significant although the statistical power as well as their magnitude of these two variables decreases. In addition, Model 2 confirms that even after controlling for the lagged dependent variable, managers’ efforts to interact with their overhead political leaders and line subordinates still matter for an organization’s financial condition. Overall, it can be reasonably considered that our empirical findings reflect real-world local budgetary conditions, especially in line with incrementalism perspective. In support of LeLoup’s (2002) and Wildavsky’s (1964) view that most budgetary changes and related policy decisions follow an incremental path (not a random path), this study provides evidence that the impact of lagged variable could be a strong predictor (or control variable) to explain the variation of the fund balance. In addition, we found that even in cases where local budgetary decisions are likely to be incrementally changed (typically prepared in small increments), it is more likely that public managers’ strategic management efforts for obtaining or managing financial resources effectively matter.

Among control variables, it is notable in Model 1 of Table 3 that a school district’s performance, enrollment size, state aid, and student population density are positively related to its fund balance. However, when the lagged dependent variable is controlled, Model 2 finds that only student population density appears statistically significant. That is, when a school district is located in an urban area,

<sup>10</sup> Here, the phrase “economically disadvantaged students” refers to those students who are eligible for free lunches.

<sup>11</sup> The R-square for the simple regression of the logged fund balance on the lagged dependent variable was 0.850.

**Table 2**  
 Descriptive statistics and correlation coefficients.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Fund balance (logged)	1.000										
(2) Managing upward	0.229	1.000									
(3) Managing downward	-0.433	0.050 <sup>a</sup>	1.000								
(4) Managing outward	-0.025 <sup>a</sup>	0.315	0.253	1.000							
(5) TAKS pass rates	0.051 <sup>a</sup>	-0.047 <sup>a</sup>	0.041 <sup>a</sup>	0.011 <sup>a</sup>	1.000						
(6) Enrollment (in thousands)	0.611	0.184	-0.348	0.025 <sup>a</sup>	-0.006 <sup>a</sup>	1.000					
(7) State aid (in million \$)	0.594	0.181	-0.332	0.026 <sup>a</sup>	-0.106	0.862	1.000				
(8) % Low-income students	-0.041 <sup>a</sup>	-0.047 <sup>a</sup>	0.015 <sup>a</sup>	-0.002 <sup>a</sup>	-0.673	0.010 <sup>a</sup>	0.141	1.000			
(9) % White students	-0.337	-0.119	0.172	0.018 <sup>a</sup>	0.519	-0.284	-0.374	-0.675	1.000		
(10) Teacher turnover	-0.204	-0.028 <sup>a</sup>	0.120	0.015 <sup>a</sup>	-0.365	-0.122	-0.132	0.215	-0.129	1.000	
(11) Density	0.568	0.184	-0.339	-0.020 <sup>a</sup>	0.030 <sup>a</sup>	0.604	0.615	-0.055 <sup>a</sup>	-0.268	-0.0601 <sup>a</sup>	1.000
Mean	14.406	4.508	5.385	0.188	62.356	4.474	13.561	50.995	59.743	17.964	0.208
Standard deviation	1.333	0.774	0.871	0.744	11.247	11.897	31.983	18.087	26.090	7.515	0.512
Minimum	8.828	3.000	1.000	-1.567	31.000	0.062	0.080	0.000	0.100	2.645	0.000
Maximum	18.440	6.000	6.000	2.921	95.000	157.743	278.355	99.250	100	55.938	3.831

N: 599. All others are significant at 0.05.

<sup>a</sup> not significant at 0.05.

**Table 3**  
 Regression results.

Variables	Model 1		Model 2	
	Raw coefficient	Standardized coefficient	Raw coefficient	Standardized coefficient
Managing upward	0.178*** (0.053)	0.104	0.074** (0.029)	0.043
Managing downward	-0.302*** (0.049)	-0.198	-0.047* (0.028)	-0.031
Managing outward	-0.012 (0.054)	-0.007	-0.032 (0.030)	-0.018
TAKS pass rates	0.009* (0.005)	0.079	0.002 (0.003)	0.017
Enrollment (in thousands)	0.024*** (0.006)	0.215	0.003 (0.004)	0.029
State aid (in million \$)	0.005** (0.002)	0.120	0.002 (0.001)	0.038
% Low-income students	-0.013*** (0.003)	-0.177	-0.002 (0.002)	-0.034
% White students	-0.016*** (0.002)	-0.310	-0.003** (0.001)	-0.058
Teacher turnover	-0.017*** (0.005)	-0.098	-0.004 (0.003)	-0.025
Density	0.460*** (0.098)	0.177	0.096* (0.055)	0.037
Lagged fund balance (logged)			0.797*** (0.022)	0.813
Constant	16.300*** (0.594)		3.133*** (0.489)	
Observations	599		599	
R-squared	0.548		0.861	
Adj. R-squared	0.540		0.859	

Note: Standard errors in parentheses.

\*\*\* p < 0.01.

\*\* p < 0.05.

\* p < 0.1.

it is likely that the district will have an increased fund balance. Student characteristics, including the percentage of low-income students and the percentage of white students, as well as teacher turnover, are found to have negative impact on fund balance in Model 1, but Model 2, in which a lagged dependent variable is controlled, finds only the percentage of white students to be statistically significant. That is, students' ethnicity influences the level of fund balance, and as school districts have more advantaged students, they are likely to maintain a lower fund balance. This indi-

cates that schools with a majority of white students may want to spend more to accommodate the needs of those students.

## 7. Discussion and conclusion

The initial inquiry of this research was derived from the central question—can a top manager's public management, driven by the pursuit of managing upward, downward, and

outward, induce a satisfactory financial condition at the local level.

To explore the complex nature of public management in the specific context of school districts, this study empirically examined the relationship between superintendents' interaction with other key local stakeholders and the districts' financial condition (here, the unreserved general fund balances of school districts). By investigating the Texas K-12 educational system by using superintendents' management surveys and school district financial data, our sample appears to rule out the possibility of a connection between theory and practice, despite an increasing concern for the management-performance link. Even though the empirical results partially supported our hypotheses, the findings suggest that a top manager's managing upward toward political leaders above and downward toward line subordinates will have a significant impact on district fund balances. It seems that the public manager's primary managing strategies have markedly changed toward facilitating resource sharing in an effective manner to ensure a satisfactory level of organizational performance. As such, our empirical evidence is reminiscent of Moore's (1995) argument that "public managers can become strategists rather than technicians... They engage the politics surrounding their organization to help define public value as well as engineer how their organizations operate" (1995, p. 20).

There are, of course, limitations. The results of this analysis are very preliminary due to data availability and methodology constraints. In particular, this study did not fully distinguish between reserved and unreserved fund balances in the empirical analysis. If we were able to include a separate measure for each fund balance, we would expect rigorous estimation results regarding the differential consequences of reserved vs. unreserved fund balances while controlling for other variables. Next, reliance on survey data from short time periods in only one state limits researchers' ability to draw conclusions with strong evidential support. Moreover, the current measures of managing upward, downward, and outward are based on the frequency of interaction and the assumption that the contents of interaction matter. Of course, it is reasonable to believe that the frequent interaction between superintendents and their key stakeholders is relevant to school district management, considering the superintendents' and their key stakeholders' busy schedule, but the process and contents of the interactions are not given. This limitation results from utilizing secondary data; further investigation is needed to clearly understand the mechanism of the management-performance link. In particular, we failed to find the managing outward-fund balance link. One reason may be that the impact of networking with individual external stakeholders may be different depending on with whom superintendents network. To investigate the possibility, revised model is employed; instead of having a composite "managing outward" variable that measures the pattern of the superintendent's networking behaviors, multiple single networking variables that measures superintendents' networking with individual stakeholders are measured and included for the analysis. The following table shows the result (Table 4).

**Table 4**  
 Regression analysis with multiple managing outward variables.

Variables	Raw coefficient
Managing upward	0.160*** (0.052)
Managing downward	-0.250*** (0.049)
Interaction with local business leaders	0.085** (0.039)
Interaction with other superintendents	-0.198*** (0.047)
Interaction with federal education officials	0.004 (0.054)
Interaction with state legislators	0.172*** (0.052)
Interaction with Texas Education Agency	-0.064 (0.053)

Note: Standard errors in parentheses. All other control variables in the previous analysis are controlled.

\*p < 0.1.

\*\*\* p < 0.01.

\*\* p < 0.05.

As found from the table above, networking with different external stakeholders produces different outcomes. It may be that the impact of managing outward on financial condition depends on the nature/characteristics of stakeholders.

For instance, networking with local business leaders and state legislators is found to increase fund balance while networking with other superintendents is found to reduce fund balance. Local business leaders are those who may be able to financially support school districts when necessary. For local business leaders, students are their future workforce, and they want to financially support school districts to educate their future employees. State legislators, as well, can legally finance school districts. As a result, more networking with them may lead to positive fund balance. As for other superintendents, on the other hand, a superintendent competes with other superintendents in terms of various measures of performance. As a result, interaction with other superintendents may motivate superintendents to spend more expenditure to invest their schools in order not to get left behind. Since the impact of interaction with different stakeholders may vary, the composite managing outward variable is found not significant. In order to support the explanation, more details such as the actual activities taken when superintendents and their networking partners interact need to be investigated. Unfortunately, this study analyzes secondary data which limit to investigate further. Future research is needed for further investigation.

Given such challenges, one should be cautious in generalizing results because local governments have very different demographic, cultural, and political environments and varying fiscal capacity and rules than the state or federal government. Thus, more exhaustive research, based on longitudinal data with more and better control variables (e.g., district-level economic variables, such as median household income or the percentage of owner-occupied housing) is necessary. In addition to using data from more extended periods to build a fully-specified model may enable researchers to improve the understanding of the

mechanisms involved in managing upward, downward, and outward in general and their impact on other various indicators (e.g., liquidity and debt ratio) in the financial condition of school districts. For future research, it would be interesting to conduct extensive interviews with superintendents and review related budget reports published in each district. Such in-depth studies might bring a variety of analytical and practical insights to bear on some of the top managers' strategies.

Nevertheless, this study addresses several intriguing issues that merit discussion. First, as top managers, superintendents hold positional authority and administrative responsibility to maintain closer relations with others inside and outside the district, not only to share budgetary information and expertise but also to securely support satisfactory student academic achievement with funding. Such a perspective may be in accordance with the proposition that "managers have only limited time and resources available and weigh the relative costs and benefits of maintaining relationships with an external actor or organization" (Torenvlied, Akkerman, Meier, & O'Toole, 2013, p. 266). More specifically, superintendents' collaborative efforts with other stakeholders can help reduce costs that are naturally embedded in all human actions, accompanied with uncertainty, exchange, and limited information (Williamson, 1995) and can resolve complex (here, financial) problems that a single school district cannot fully resolve or easily resolve for oneself (Agranoff & McGuire, 2003; O'Toole, 1997; Rethemeyer & Hatmaker, 2008). Therefore, the greater concentration on one of the different types of collaborative relations, the greater likelihood that school district superintendents will strategically utilize (or obtain) desired resources and different levels or types of information from others. It appears that our theoretical propositions remain somewhat consistent with prior literature that illustrates transaction cost theory and resource dependency theory. Perhaps, in cases where financial stress and financial changes are not easily observed at the local level, strategic public management can even enhance the likelihood of achieving higher and broader levels of the financial condition in local governance. The theoretical settings of this study allow for deeper probing of the fundamental topic in the public sector regarding the roles and responsibilities of public managers, regardless of their status in the bureaucracy.

Another point worth noting is that this study deals with how political institutions in school districts served as an incentive (or constraint) structure that influenced key local actors' behaviors in the district budgeting process. Unlike prior studies, by applying new institutional economic theories to frame our analysis, we were able to demonstrate that participants in budgetary decision making have various individual preferences and values with regard to how, and how much, public money should be spent considering institutional arrangements (political governance structures) and networked environments. In particular, it was found that the relationships between school board superintendents and school principals embed different priorities and incentives that influence superintendents' and principals' behaviors in managing the school (school district) budget. Arguably, viewing school systems through the lens of insti-

tutional differences (elected vs. appointed managers) leads to the conclusion that school district budgeting is indeed a political tool as well as a complex decision-making process that attempts to gather additional resources and allocate existing scarce resources among the political and economic needs of a jurisdiction. Our approach appears to provide an alternative explanation as to how and why public sector managers behave differently in the course of seeking desired financial resources.

By synthesizing the conceptual contexts as the previous literature indicated and adding new theoretical leverage, our findings, though limited, may call for continued inquiry into the impact of collaborative public management. This study contributes to the current literature by enhancing our understanding of strategic yet collaborative management skills in the context of the financial condition. More importantly, recognizing that there is a lack of empirical research on the general fund balance only, the present study can be meaningful in that it is one of the first studies to expand our knowledge of fund balances by viewing school districts through the lens of strategic management governance. For many financially low-performing local governments, including school districts, even though they are in need of state or federal fiscal support, the findings of this research provide ways to overcome budget shortfalls and obtain and manage financial resources effectively. Overall, it is expected that scholars and practitioners whose research interests center on public management and finance will pay greater attention to the findings and suggestions of this research.

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