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AN ANALYSIS OF REPORTING  
PRACTICES IN AMERICAN CITIES

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## AN ANALYSIS OF REPORTING PRACTICES IN AMERICAN CITIES

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A recent study of municipal reporting practices found substantial noncompliance with generally accepted accounting principles in large American cities (Keller and Maher [1976]). In the light of these findings and the uncertain financial position of several large cities, "reforms" have been called for to improve reporting practices in American cities.<sup>1</sup> Criticisms of current practices have frequently focused on the perceived needs of information users. The implication of these criticisms is that governments have not been responsive to the needs of users. However, "the real issue in contemporary municipal accounting is whether the proposed reforms will enhance decision making or accountability in government. If they do not, then their value is not worth the 'costs.' Specific users and uses of financial reports must be analyzed to justify such 'reforms.'" (Mandolini [1978], p. 155.)

In this paper, we are concerned with the reasons why governments have not been "responsive" to external user needs (i.e., supply of information), or alternatively, the reasons why external users have not made greater demands on government for information (i.e., demand for information). Our discussion is structured to focus on information demand and supply for two dimensions of decision making: accountability of governmental managers to taxpayers and valuation of debt claims by bondholders. As a result of our analysis, we hope to provide some insight into the rationale for observed reporting practices in cities.

In the first section, "Some Information Needs," we determine some general uses for information in a multiperson, multiperiod setting. For our purposes, accountability uses of information are assumed to be derived from the relation between principals (e.g., taxpayers) and the agents (e.g., public managers) to whom they have entrusted resources for the purpose of carrying out certain activities; valuation uses are assumed to be derived from the valuation of debt claims by bondholders. As we proceed, we shall see that this partition of information uses

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<sup>1</sup>For further discussion, see Wright (1975); Cockrill, Keller, Maher, Meyerson and Savage (1976); Davidson, Green, Hellerstein, Madansky and Weil (1977); Maher (1977) and Hogan and Mottola (1978).

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is not clearly defined. Taxpayers who hold either debt claims or real property claims may rely on information similar to that used by bondholders. Bondholders, on the other hand, may rely on accountability processes in valuing debt claims. Further, we have by no means exhausted the sets of information uses and users. However, by focusing on two user groups whose information needs are essentially different, we believe we can develop some insights into the reasons for observed reporting practices. The analysis of other user groups (e.g., employees, voters who select politicians, public agencies, recipients of government services) remains the subject of other analyses.<sup>2</sup>

In sections two, "Demand for Information," and three, "Supply of Information," we examine current and expected practices of information demanders and suppliers. We argue that observed reporting practices are not surprising in view of the incentives for governmental managers to supply information and for certain users to demand it. In "Conclusions and Implications," we note that criticism of government managers for being unresponsive to disclosure needs of current taxpayers and bondholders may be unjustified. We suggest that greater justification for "reforms" may come from internal information users (e.g., governmental managers who face continued demands for services with tightening constraints on resource inflows) or from third parties (e.g., prospective bondholders and taxpayers). However, more research is needed to determine whether calls for reform in external reporting practices has had an impact on ex ante control and ex post monitoring systems and whether governmental units that have made "reforms" have received any relative advantage in dealing with information users as a result of their reforms.

### SOME INFORMATION NEEDS

In this section, we determine some of the general uses for information. We assume a multiperson, multiperiod world in which information can be used for two purposes. First, it can be used by principals to monitor the activities of their agents. Second, information about the past can be used by decision makers to assess the future.

In this paper, we focus on information uses by parties outside of the organization. We classify the first use of information

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<sup>2</sup>Zimmerman (1978), focusing on the electoral process and the relation between politicians and voters choosing among alternative candidates, examined the underlying political and economic forces which have led to the present state of reporting practices.

as an "accountability" use, in which governmental managers (agents) are accountable to taxpayers (principals) who have entrusted them with resources.<sup>3</sup> The theory of the principal-agent relation provides the foundation for this analysis (Ross, [1973]; Jensen and Meckling [1976]; Harris and Raviv [1978]).

We classify the second use of information by external parties as a "valuation" use. Present and prospective holders of debt claims are assumed to use information in valuing their claims.<sup>4</sup> Valuation theory provides the foundation for this analysis (Fisher [1930]; Miller and Modigliani [1961]; Fama and Miller [1972]).

### Accountability

When contracting parties do not constitute a team (Marschak [1955]; Marschak and Radner [1972]), their divergent preferences and incomplete information may lead one of the contracting parties to act contrary to the best interests of the other party. The principal-agent contracting relationship has been defined as one in which principals engage agents to perform some action on their behalf (Ross [1973]; Jensen and Meckling [1976]). Normally, this requires delegating some decision-making authority to the agent. If agents are utility maximizers and principals have incomplete information about some combination of their actions, their skills, the task environment, or their output, then we expect that the agents may not act in the best interests of their principals.<sup>5</sup>

By incurring monitoring costs and providing appropriate incentives, principals can limit the divergence of the agents' actions.

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<sup>3</sup>The agency paradigm can be used to analyze a number of other relations in government, such as superior and subordinate, bondholders and debtors, employees and pension fund managers, and voters and elected officials. We shall refer briefly to some of these other relations where they have a bearing on our analysis, but we focus our attention on the accountability of government managers to the primary sources of funds: taxpayers.

<sup>4</sup>As in our analysis of accountability, no pretense to completeness is made. External accounting information may also be an input to other types of valuation, such as employees' valuation of claims to future cash flows from pensions and real estate owners' valuation of property claims.

<sup>5</sup>For example, Alchian and Demsetz (1972) examine shirking in the context of team production. Demski and Feltham (1978) incorporate effort-aversion into their analysis of budget-based contracting. Harris and Raviv (1978) examine Pareto optimal contracting arrangements when employees are effort-averse.

from principals' preferences. However, it may not be optimal for principals to remove all divergences or even to minimize them.<sup>6</sup> The principals' problem, rather, is to minimize the total cost of the agency relationship, where

$$(1) \quad C = M + B + (R|M*B*)^7$$

C = total agency costs

M = monitoring costs, including the costs of measuring agent performance and the costs of controlling agent behavior

B = bonding costs incurred by the agent to ensure that (s)he will not take certain actions that would harm the principal, or that the principal will be compensated if (s)he does take such actions

(R|M\*B\*) = the residual loss occurring because of the divergence between the agent's actions and those actions that would maximize the welfare of the principal, given optimal monitoring and bonding by the principal and agent

Monitoring the actions of agents can be useful for both motivational and evaluative purposes. From the principal's perspective, monitoring the agent's performance can be used to (a) motivate the agent to take actions consistent with the principal's preferences, (b) evaluate the costs and benefits of retaining or replacing the agent (which may be difficult in the governmental sector with nonelected agents), and (c) evaluate the costs and benefits of withdrawing from the agency relationship (e.g., stockholders selling stock in the commercial sector, taxpayers moving out of the jurisdiction in the governmental sector). The principal must trade off the cost of monitoring and inducing agents to act in principal's best interests against the consequences of variant behavior.

The problem of monitoring agents and inducing them to act in the best interests of their principals can be found in a variety of settings. Management control issues can be analyzed using the principal-agent paradigm (Demski and Feltham [1978]; Maher, Ramanathan and Peterson [1978]). It has been used to analyze

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<sup>6</sup> Extensive analyses of optimal contracting with various attitudes toward risk and information about the act-skill-state outcome can be found in Demski and Feltham (1978).

<sup>7</sup> Jensen and Meckling (1976), pp. 308-309.

ownership structures in a theory of the firm context (Jensen and Meckling [1976]). Harris and Raviv (1978) have used the paradigm to study employment contracts, insurance contracts, and law enforcement contracts. In this paper, we analyze accountability issues between the managers of city governments (agents) and taxpayers (principals). In particular, we utilize the principal-agent paradigm to determine whether observed city reporting practices are consistent with the way we should expect agents to report on their performance.

### Valuation

The valuation of an asset is derived from the investment decision to sacrifice current consumption for claims to future uncertain cash flows.<sup>8</sup> In deciding how to allocate funds between current consumption and investment, the investor has a demand for information to help predict future cash flows. We define the exchange of cash flows between an organization and outside parties as follows:<sup>9</sup>

$$(2) \quad X - I \equiv D_d + D_e - NC_d - NC_e$$

where X = net cash flows from (+), or for (-), operations

= receipts from customers minus payments for operating expenditures

I = investment in assets (including cash balances)

D = distribution of cash to holders of debt ( $D_d$ ) and equity ( $D_e$ ) claims

NC = new capital provided by debt ( $NC_d$ ) and equity ( $NC_e$ ) claims

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<sup>8</sup>An extensive literature is available. For a sampling of the literature with a historical perspective, see Fisher (1930), Miller and Modigliani (1961) Hirshleifer (1970), and Fama and Miller (1972).

<sup>9</sup>Miller and Modigliani (1961).

<sup>10</sup>Customers, here, refers to direct purchasers of government services. (In the governmental sector, X will generally be negative.)

<sup>11</sup>Equity holders, here, refers to taxpayers.  $D_e$  represents tax refunds. Welfare payments, etc., are included<sup>e</sup> in X.

As our analysis focuses on information demands of bondholders and information supply by public managers, the key variables of interest are

$$(3) D_d = NC_e - D_e + (-X) - I + NC_d.$$

Thus, we assume that bondholders are interested in forecasting the amount and timing of these variables.

### DEMAND FOR INFORMATION

In this section, we evaluate observed accounting and reporting practices in American cities in light of the practices we should expect to prevail given two sources of information demand: taxpayer demands for accountability, and bondholder demands to price securities.

#### Accountability to Taxpayers

The issue and current practices. The problem of measuring benefits in the governmental sector is well known; as a result, we expect performance evaluation to be costly and incomplete. Additionally, the combination of incomplete monitoring and effort aversion is likely to result in variant behavior on the part of agents.

This problem is not limited to the governmental sector. It is commonly associated with staff functions in the commercial sector. In the absence of well defined output measures for activities like data-processing and accounting, we frequently find emphasis on controlling the agents' acts and skills.<sup>12</sup> Examples include restricting hiring to prospective employees whose skills are signaled by degrees and certificates. Also, we observe such input constraints on activities as discretionary budget ceilings. Although the problem of evaluating performance when outputs are difficult to measure is not confined to the governmental sector, nonetheless we expect that the proportion of actions for which output measures are not well defined is larger in the governmental sector.

As previously indicated, the taxpayers' (principals') problem in their agency relationship with public managers is to balance the costs of monitoring (and bonding) against the optimal level of

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<sup>12</sup>An extensive literature has developed which describes attempts to improve control over staff functions in the commercial sector. For example, see Pondy (1969); Pyhrr (1970); Stratton (1971); Collier (1977); and Dogramaci (1977).



residual loss from variant behavior. As monitoring includes both the cost of ex ante control and ex post performance monitoring systems, the problem is to find the best tradeoff among these two activities, as well.

In our study of major American cities, we found that ex ante control systems to constrain actions were universally used. The use of fund and budgetary accounting imposes constraints on public managers. In particular, the controls are designed to ensure that funds from certain sources will be used to finance specific governmental activities (e.g., special assessments) and to impose a ceiling on the amount of funds spent in a particular time period. In short, an implication of the difficulty in monitoring performance is the development of extensive control systems to ensure accountability for expenditures on government services.<sup>13</sup>

Another aspect of the performance monitoring problem which we observed was the emphasis on financial rather than operational control. As shown in Table 1, only a few cities in our study of forty-six large American cities have developed ex ante control systems oriented toward efficient operations. Where output measures are used, expenses or costs of achieving outputs were frequently not used. For example, the budgeting system in Dayton, Ohio, presented the greatest emphasis on output measures of the forty-six cities. The budget included such measures of the effectiveness of the police force as the percent of public opinion survey respondents who classify their neighborhood as (a) "safe anytime," (b) "safe, if careful," etc. However, the cash-based accounting system measured expenditures rather than expenses or costs of achieving these outputs.

Our study found that most cities use ex ante control systems which focus on financial and custodial accountability. These systems are designed to ensure that funds are not stolen or misappropriated and that monies spent for an activity do not exceed budget limitations. These systems do not measure performance, however.

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<sup>13</sup>These choices are generally made by city council. We assume that council reflects taxpayer choices in this budgeting process to avoid introducing another agency relationship which is peripheral to our analysis.

TABLE 1

Use of Budgets for Program Results

	<u>Number of Cities</u>	<u>Percentage</u>
Cities reporting output performance measures with program budgets	3	6.5
Cities reporting program budgets without output performance indicators	18	39.1
Cities reporting predominantly object of expenditure budgets without output performance indicators	<u>25</u>	<u>54.3</u>
Total cities budgeting general fund activities	<u>46</u>	<u>100*</u>
Total cities studied	<u>46</u>	<u>100</u>

\*Percentages do not sum because of rounding.

Source: Authors' analysis of budgets of the 46 cities studied in Keller and Maher (1976).

Our study also suggests that a greater emphasis is placed on ex ante control systems than on ex post performance monitoring systems. Examples of the lack of emphasis on disclosure through ex post performance monitoring are shown in Table 2. (See Keller and Maher [1976] for more detail.) We concluded from our observations that financial reporting plays a secondary role to the budgeting process.

TABLE 2

## Financial Disclosure Practices

	<u>Number of Cities</u>	<u>Percentages</u>
1. <u>Financial Statement Audits.</u>		
Cities audited by an independent CPA firm:		
Cities receiving audit opinions which did not take exception to accounting practices on the basis of accounting principles	8	17.4
Cities audited in which exceptions were taken to accounting practices	<u>19</u>	<u>41.3</u>
Total cities audited by an independent CPA firm	27	58.7
Cities not audited by an independent CPA firm	<u>19</u>	<u>41.3</u>
Total cities studied	<u><u>46</u></u>	<u><u>100%</u></u>
2. <u>Pension Plan Disclosure.</u>		
Cities disclosing the excess, if any, of the actuarially computed value of the vested benefits over the total of the pension fund and net balance sheet pension accruals	11	23.9
Cities with pension plans not making the above disclosure	<u>35</u>	<u>76.1</u>
Total cities studied	<u><u>46</u></u>	<u><u>100</u></u>
(continued)		

TABLE 2 (continued)  
Financial Disclosure Practices

	<u>Number of Cities</u>	<u>Percentages</u>
<b>3. <u>Overlapping Debt Disclosure</u></b>		
Cities disclosing overlapping debt	21	50
Cities not disclosing overlapping debt	<u>21</u>	<u>50</u>
Total cities having overlapping debt	<u>42</u>	<u>100</u>
<b>4. <u>Disclosure Timeliness</u></b>		
Annual report issued within 60 days of fiscal year end	8	17.4
Annual report issued 60-90 days after fiscal year end	10	21.9
Annual report issued more than 90 days after fiscal year end	<u>28</u>	<u>60.9</u>
Total cities studied	<u>46</u>	<u>100</u>

\* Percentages do not sum because of rounding.

Source: Keller and Maher (1976).

Reasons for current practices. Monitoring the performance of agents in governmental service could induce taxpayer-principals to retain, replace, or reward agents, or it could lead to their withdrawal from the agency relationship.<sup>14</sup> The benefits to be derived from such monitoring activities take the form of lower taxes (holding services constant) or increased real estate values. However, taxpayers may not have incentives to incur privately the costs of monitoring non-elected governmental agents. While the public benefit of monitoring may be large, the private benefits may be insignificant relative to private monitoring costs. For example, without collective action and sharing of monitoring costs, it is possible that,

$$(3) \quad \delta NC_{ej} - M_j < 0$$

where  $\delta NC_{ej}$  = the  $j^{\text{th}}$  taxpayer's share of savings in taxes, and

$M_j$  = the  $j^{\text{th}}$  taxpayer's monitoring costs

Likewise, private transaction costs reduce the opportunity to capture the benefits of changed real estate values. Transaction costs here are higher than in some agency relationships (e.g., stockholders in publicly traded corporations).<sup>15</sup> In the short run, we should not expect to observe taxpayers' migration out of a taxing jurisdiction because of dissatisfaction with the performance of public managers.

We expect that the private costs and benefits of evaluating performances of nonelected agents are such that information demands for this purpose are negligible. The nature of governmental output, which is difficult to measure, and the lack of incentives to incur monitoring costs may be among the reasons why we observe an emphasis on ex ante control systems. Either improvements in measuring outputs or changes in taxpayers' incentives are required before we expect to see a shift in the emphasis from ex ante control systems toward ex post monitoring systems. Even then, the marginal benefits of ex post monitoring systems may be reduced because ex ante control systems are already in operation. Further, taxpayers have data available which do not require ex post financial reports. These include

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<sup>14</sup> See Williamson, Wachter and Harris (1975) for an analysis of the use of employment in entry-level positions to evaluate and screen employees.

<sup>15</sup> See Maher (1977) and Zimmerman (1978) for a discussion of the potential impact of transaction costs on taxpayer mobility.

the private costs of taxes paid, a subjective assessment of benefits derived from government services, and an estimate of transaction costs.

It could be argued that ex post financial reports yield benefits because they can aid in the prediction of future events. For example, the disclosure of a large unfunded pension obligation could be used to forecast a cut in future government services or an increase in future taxes. It may not be in the best interests of present taxpayers to disclose publicly this information however. Revealing it could reduce real estate values and increase the costs of issuing debt. In the absence of disclosure, taxpayers' real estate may be either overvalued or undervalued, compared to its value when disclosure is available. If taxpayers believe real estate is undervalued, in this sense, they would tend to prefer greater disclosure, while the reverse is true if they believe real estate is overvalued. Risk averse taxpayers who don't know the value of real estate will tend not to prefer disclosure. Further, the costs of disclosure would tend to strengthen the argument against it.

On the other hand, disclosure may have positive benefits to nontaxpayers (e.g., prospective taxpayers). However, present taxpayers have limited opportunity to capture these benefits.<sup>16</sup>

In short, disclosure tends to be costly to present taxpayers, it has uncertain effects on the value of their real estate, and it may publicly reveal unfavorable information about the city. Disclosure is likely to be preferred by present taxpayers when they expect it to reveal information that could favorably affect their real estate values, subject to disclosure and transaction costs considerations.

### Valuation by Bondholders

Information needs. As mentioned earlier, demand for information by bondholders is derived from the investment process, which is a sacrifice of current consumption for claims to uncertain future cash flows. Information is used to predict future cash flows, and the investment decision is usually characterized as a tradeoff between the expected return and the risk that actual returns may differ from those expected. Of course, in a portfolio context, each security is viewed in terms of its contribution to the return and risk of the portfolio.

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<sup>16</sup>In the classic public good analysis, there is an underproduction of the public good if the effects on third parties are not incorporated into the decision to produce the good and pay for it. See Samuelson (1954); and Tullock (1971).

In this section, we set forth the cash flows that city bondholders are assumed to desire information about, indicate conditions that could affect those cash flows and determine expected information demands in view of the conditions that affect future cash flows.

The cash flow of concern to bondholders is  $D_d$ , from equation (2). In particular, bondholders are collectively expected to look for conditions that could cause,

$$(4) \quad D_d - D_d^C < 0$$

where  $D_d^C$  = the contractual future levels (and timing) of  $D_d$

Equation (4) describes a default situation where the actual amount paid to debtholders (i.e.,  $D_d$ ) is less than its contractual debt service requirements.<sup>17</sup> Causes of default are numerous and include, but are not limited to, those described below.

- (a) Limitations on tax rates: Tax rate limitations or reductions without a corresponding limitation on spending may become an important factor if numerous tax limitation measures similar to California's "Proposition 13" are passed. The reduction in  $NC_e - D_e$  may have to be offset by reductions in  $I$ , which could have long-term detrimental effects, or by increases in  $NC_d$ , which could increase risk to present bondholders.
- (b) Reductions in tax base: In the long-run, taxpayer-principals can be expected to leave cities if they believe the performance of their agents is unsatisfactory. The transaction costs of moving may create more short-run slack for public managers than for those in the private sectors. However, the existence of these transaction costs presents a double-edged sword, because they are incurred both when exiting and entering the taxing jurisdiction. Thus, they tend to increase the difficulty of attracting taxpayers into cities in which the value of services is slightly greater than the cost to the taxpayer. Cities with poor reputations for giving taxpayers their money's worth may have great difficulty rebuilding their tax base.

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<sup>17</sup> Individual bondholder  $j$  is also concerned with the priority ordering of  $D_d$ ; that is, whether  $D_d - D_d^S$  could be less than or equal to zero, where  $D_d^S$  is the debt service requirement of debt that is senior to the bonds held by individual  $j$ .

- (c) Increasing demands for services: Increasing demands for services without increases in taxes may be a factor in driving  $NC_e - D_e + (-X)$  below zero. Major industrial cities with changing population mixes and/or declining populations have found this to be a particular problem.<sup>18</sup>

The number of cities for which there is risk that  $NC_e - D_e + (-X) < 0$  is not trivial. The authors found that twenty-nine of the forty-six cities studied expended more on operations (i.e., the X term from equation (2) which excludes capital expenditures) than they collected locally from taxpayers (i.e., the  $NC_e - D_e$  terms from equation (2), exclusive of state, federal and other intergovernmental transfers).<sup>19</sup>

Although the number of bond defaults since the 1930's has not been large, the potential risk is evident. Further, "as a result of New York's experience, ...interest in credit-worthiness has revived. Investors now demand to know much more about a city's circumstances before buying its securities." (Browne and Syron [1977])

Reasons for Current Disclosure Practices. On a security-by-security basis, we would expect demand for information by present and potential bondholders to evaluate security prices in terms of risk. In a portfolio context, however, some of this risk may be diversifiable. Further, as argued in the commercial sector (Beaver [1977]), the need for entity-specific information may be reduced for investors holding a diversified portfolio. Without disclosure some securities will be overpriced and some will be underpriced, compared to prices prevailing, if disclosure is made. A diversified portfolio may contain some of each, and their effects will tend to be offsetting. Thus, portfolio holders may not demand entity-specific information.

This may be a partial explanation for the similarity in city bond interest yields found by Browne and Syron (1977). Twenty-nine cities with populations in excess of 300,000 were studied and virtually no difference in interest yields on 1984 general

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<sup>18</sup>Clark, Rubin, Pettler and Zimmerman (1976).

<sup>19</sup>See Keller and Maher (1976). These twenty-nine cities balanced their budgets (i.e., maintained a positive or zero sum of  $NC_e - D_e + [-X]$ ) through state and federal aid.



obligation bonds was found for twenty-one of the twenty-nine cities.<sup>20</sup>

Although prospective bondholders may always prefer more information, subject to private costs, this may not hold for present bondholders. Current prices presumably reflect current publicly known information. Additional disclosure ( $y$ ) may increase prices ( $P|y > P$ ) or decrease prices ( $P|y < P$ ). If present bondholders have no knowledge of the content of  $y$ , if they are risk-neutral, if no costs of disclosure are passed on to them, and if information is not a consumption good, they would presumably be indifferent to disclosure. Bondholders who are averse to risk, or who may bear some of the costs of disclosure, would tend not to prefer disclosure.<sup>21</sup> On the other hand, current bondholders who believe  $P < P|y$ , would favor disclosure, subject to cost considerations.

### Summary

In summary, a major impetus for additional disclosure apparently is derived from bondholders who believe they hold underpriced securities ( $P < P|y$ ), subject to cost considerations. Second, current taxpayers who believe their real estate values would increase with disclosure and those who could obtain private tax savings would also prefer additional disclosure, subject to considerations of monitoring and transaction costs. We find little demand for increased disclosure via ex post performance monitoring systems from other current bondholders and taxpayers. Prospective bondholders and taxpayers, who are expected to prefer more information to less, subject to private costs of obtaining and processing information, provide the third source of demand for more disclosure and "reforms." As these are third parties to the disclosure decision, and information has public good properties, information may not be produced in the amount that would prevail if information was a private good.

### SUPPLY OF INFORMATION

The demand for information by two user groups for two purposes revealed limited demand for information by present taxpayers and bondholders. Potential taxpayers and bondholders, however,

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<sup>20</sup>These cities are Atlanta, Chicago, Cincinnati, Dallas, Denver, Fort Worth, Houston, Kansas City, Los Angeles, Memphis, Miami, Milwaukee, Minneapolis, Nashville, New Orleans, Oklahoma City, Pittsburgh, St. Louis, San Antonio, San Francisco, and Tucson.

<sup>21</sup>Disclosure may be costly to bondholders if it diverts resources otherwise available for  $D_d$ . Another scenario is that disclosure costs are borne by taxpayers.

generally prefer more information to less. These conflicts pose a dilemma for public managers. Their incentives to disclose to these user groups are explored in this section.

Public managers may reduce the amount of discretion they have by providing better information. This argument has been used to explain the lack of observed consolidated financial statements.

"An accounting system which allows the public agent to report selective subsets of information (and discretion to alter reported expenditures and revenues), thereby presenting different financial conditions to different groups (and altering reimbursements), will be preferred by the agent, and even perhaps by a majority of voters, to an accounting system which reports a single unified set of information (and which reduce the agent's discretionary powers to alter reported expenditures and revenues in selective funds)."  
(Zimmerman, 1978, p. 125)

The diversity of functions that must be accounted for and the variety of ways of accounting for them makes comparison across cities difficult.<sup>22</sup> This coupled with unconsolidated financial statements enables public managers to retain some control over selecting the information signals that are disclosed.

#### Incentives to Suppress Information

Public managers can be expected to suppress unfavorable information about themselves. If they know their own performance ( $\rho^a$ ), and their performance as perceived ( $\rho^p$ ) by taxpayers and bondholders, they have incentives to suppress information if they believe  $\rho^a < \rho^p$ . Further risk-averse public managers and those facing an asymmetric penalty-reward function, with relatively heavier penalties for poor performance than rewards for good performance, have incentives to suppress information about their performance. Public managers who believe  $\rho^a < \rho^p$  in some periods and  $\rho^a > \rho^p$  in other periods may also be inclined to minimize disclosure.

Public managers who believe  $\rho^a > \rho^p$  consistently can be expected to engage in signaling activities.<sup>23</sup> They may signal through their ex post monitoring systems by having their disclosure system audited or by "reforming" their financial reports through

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<sup>22</sup>See Keller and Maher (1976).

<sup>23</sup>The concept of signaling has been applied in many settings. See Spence (1974) for a discussion in a market setting.

sites. Further, as previously indicated, it may not be in the best interests of present taxpayers or bondholders.

### Disclosure Regulation

If taxpayers and bondholders associate signaling with performance, then public managers have incentives to signal. Selective and unregulated signaling disclosure would seem to be favored by public managers unless they believe  $\rho^a > \rho^p$  consistently. If so, they would prefer regulated disclosure of information, subject to cost considerations.

### Adverse Selection in Bond Issues

One implication of public managers' incentives to suppress unfavorable information is the incentive to offer bonds without disclosure, analogous to the adverse selection phenomenon discussed by Akerloff (1970) in product markets and Beaver (1977) in security markets. Assume that (a) public managers have better knowledge about the quality of bonds (i.e., risk of default) than do prospective buyers; (b) prospective buyers are limited in their ability to assess quality (risk) differences among bonds, if public managers do not disclose quality; (c) and sellers of lower quality (higher risk) bonds can imitate, to some extent, the signals disclosed by sellers of higher quality bonds. Let  $i$  = the interest cost to the city without disclosure and  $i|y$  = the interest cost with disclosure of some signal that cannot be duplicated in cities not having the characteristic.

If investors are unable to ascertain risk differences without  $y$ , lower risk bonds would tend to be "undervalued" ( $i > i|y$ ); higher risk bonds would tend to be "overvalued" ( $i < i|y$ ). Note that over/undervalued here refers to that which would prevail if the disclosure was available to investors. Without disclosure, we observe greater incentives for public managers to offer overvalued (high risk) bonds than undervalued (low risk) bonds.

Public managers for whom  $E(i) < E(i|y)$  would be inclined to issue bonds and not disclose  $y$ . Public managers for whom  $E(i) > E(i|y)$  would be expected to engage in signaling activities to distinguish the quality of their bonds. We would expect them to use bond rating agencies and to obtain CPA and MFOA certifications of disclosure quality. On the other hand, risk averse public managers who are uncertain whether disclosure would increase or decrease borrowing costs over current levels will be less likely to disclose.

From a social perspective, the more general problem of information underproduction is wellknown in the commercial sector. A public good will be underproduced if there are third parties ("free riders") who benefit from it, but do not participate in

consolidation (e.g., Dallas, Texas; Portland, Oregon). They may also signal by "reforming" their ex ante control systems. This includes the use of "modern" budgeting techniques (zero-base budgeting, program budgeting), computerized information systems, input and output measures of program efficiency, (e.g., Dayton), etc. Signaling may be an effective way of identifying high performance public managers (or at least those who believe  $\rho^a > \rho^p$ ), if the signals cannot be duplicated by lower performers. In this respect, obtaining an unqualified audit opinion may be a more effective signal than the acts of consolidating financial statements or "reforming" control systems.

While public managers have an incentive to disclose their performance when it is favorable to do so, failure to disclose performance could be a signal that  $\rho^a < \rho^p$ . Thus, signaling may be observed both when  $\rho^a > \rho^p$  and  $\rho^a < \rho^p$ . Public managers for whom  $\rho^a < \rho^p$  have incentives to signal in a way that does not reveal  $\rho^a$ , while public managers for whom  $\rho^a > \rho^p$  have incentives to signal in a way that does disclose  $\rho^a$ . For example, the act of consolidating financial statements may not reveal  $\rho^a$ . Public managers could subcontract the consolidation, thus not revealing their ability to consolidate. However, the information in the statements could reveal their performance.

#### Incentives to Shirk

Managers in the commercial sector may be able to capture some of the present value of managerial efficiencies in the value of their stock. Some efficiencies may be passed on to customers, employees and others; however, managers who own stock may have some incentives to generate efficiencies. Alchian and Demsetz (1972) argue that the future consequences of improved management are not capitalized into present manager/stockholder wealth in the governmental sector. "One should, therefore, find greater shirking in nonprofit, mutually owned enterprises" (p. 790). However, public managers may be taxpayers, thus the value of their efficiencies may be captured in real estate values and lower taxes (holding services and employee rewards constant), thus, it's not clear that shirking would be more prevalent in the governmental sector for this reason. However, the private costs of gaining efficiencies are likely to be large compared to the private value of benefits captured. We also expect shirking on the part of effort-averse public managers because of the previously indicated difficulty in measuring output. With incentives to shirk, we expect to find incentives to suppress information which might reveal shirking.

#### Disclosure Costs

Finally, disclosure is costly. It reduces public managers' discretion to reduce taxes, render services or consume perqui-

the decision to produce or to pay for it.<sup>24</sup> Potential taxpayers and bondholders benefit from additional disclosure without directly incurring disclosure costs. Thus, there is less disclosure than there would be if these groups participated in the disclosure decision and helped pay for disclosure. In short, we expect less disclosure if third parties (e.g., prospective taxpayers and bondholders) are not incorporated in the disclosure decision and are not charged for disclosure.

### CONCLUSIONS AND IMPLICATIONS

In this paper we analyzed some of the determinants of information supply by governmental managers and information demand by taxpayers and bondholders. We found taxpayer demand for additional disclosure to come primarily from taxpayers who believe their claims to real estate would increase in value or taxes would decrease more than would the costs of disclosure incurred. Risk averse taxpayers who are uncertain about the impact of disclosure on real estate values and taxpayers who believe additional disclosure would reduce the value of their claim to real estate would tend not to prefer additional disclosure. Bondholder demand for disclosure is limited in a similar fashion to those who believe disclosure would increase the value of their bonds. Of course, prospective bondholders and taxpayers would tend to prefer more disclosure to less.

The issue is even less clear when we have bondholders (or taxpayers) who presently hold claims and also consider acquiring additional claims. We expect bondholders or taxpayers who are in this dual role to oppose disclosure which would reduce the value of their claims.<sup>25</sup> If they believe disclosure will increase the value of their claims, they might be inclined to acquire additional claims at current prices and demand more disclosure. Of course, if homogeneous beliefs are assumed, market prices would adjust such that  $P = E(P|y)$ , because  $E(y)$  is the same for all market agents; and there would be no demand for more disclosure unless risk averse bondholders believed that more disclosure would cause  $V(P|y) < V[P|E(y)]$ , where  $V$  denotes variability.

In general we expect demands for additional disclosure from taxpayers and bondholders who believe the value of their claims will be increased. This holds if we assume (a) heterogeneous beliefs and (b) private gains from disclosure exceed private processing costs.

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<sup>24</sup> See Hirshleifer (1971) for an application of the public good problem to information.

<sup>25</sup> We are assuming short sales are not available.

We also observe a relative emphasis on ex ante control systems rather than ex post monitoring systems. As the problems of performance monitoring of staff functions are well known, this focus on controlling behavior rather than reporting on outcomes may reflect taxpayers' strategy to find an optimal balance among ex ante control, ex post monitoring, and the consequences of variant behavior. If so, greater demand for ex post monitoring would arise if the relative cost of ex ante control or variant behavior increased, or if the relative cost of ex post monitoring decreased.

Limited incentives to supply information are observed, as well. Public managers who believe the consequences of disclosure would be favorable to them would be inclined to disclose, subject to cost considerations. However, managers who are uncertain about the consequences of disclosure or who believe the consequences will be unfavorable would not prefer more disclosure. Further, for disclosure to be effective, it must reflect the characteristic being disclosed in a way that cannot be duplicated by cities not having the characteristic. Thus, the presence of consolidated financial statements or accrual accounting may not be effective signals. The data presented in those statements or the audit opinion expressed by an independent CPA may be more effective signals. In short, with costly disclosure, we don't expect public managers to favor more disclosure unless it favorably reflects upon them.

Although we have some empirical evidence about the state of financial disclosure in cities, little analysis of the determinants of information supply and demand has been observed. Our partial analysis presented here suggests that a number of propositions warrant attention.

There have been numerous calls for "reform" in municipal accounting and disclosure practices.<sup>26</sup> Have these been responded to by municipal management? Are the municipal managers who are responding more quickly to reforms those who believe increased disclosure will reflect favorably upon them? What are effective (unique) signaling strategies for these managers? Has there been a reallocation of resources following disclosure? Are there more efficient tradeoffs among the costs of ex ante control and ex post monitoring systems and the consequences of variant behavior?

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<sup>26</sup> Calls for empirical research often suggest the need for determining the effects of "reforms" on information user decisions. Patton (1978) tests the association between report format (consolidated vs. fund-by-fund) and predictions of interest rates. He finds some association between report type and prediction of expected interest rates ( $\alpha=.10$ ) by surveyed members of MFOA.

Does the absence of strong incentives for greater information supply and demand mean "reforms" are unlikely? It may not if we turn to two additional sources of incentives for reforms. First, with third parties not participating in the disclosure decision, mandated disclosure to achieve efficiency or equity becomes an issue. Third parties may be incorporated into the disclosure process via pricing mechanisms; however, mandated disclosure may be less costly.<sup>27</sup> Calls for mandated disclosure are likely to be forthcoming from those favorably affected, particularly if they do not share disclosure costs, including prospective bondholders and taxpayers.

Reforms may also come from internal, rather than external, information users. In the face of demands for services with constraints on available resources, municipal decisionmakers have incentives to be more efficient in their use of those resources.

In conclusion, increased disclosure may not take place because of limited incentives to demand or to supply information. With costly and incomplete output measurement, emphasis on ex ante behavior control and allowing variant behavior may be more efficient than allocation of resources to ex post performance monitoring. Public managers who do not respond to calls for more disclosure may be acting in the best interests of current taxpayers and bondholders because (a) disclosure could publicly reveal unfavorable information which would harm them, (b) disclosure is costly and may require an increase in taxes to hold the level of services constant, or (c) more disclosure could upset an efficient balance among ex ante control, ex post monitoring and the consequences of variant behavior.

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<sup>27</sup> For further discussion, see Stigler (1964); Posner (1974); and Beaver (1977).

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