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A Perspective on Research in Governmental Accounting

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SYNOPSIS AND INTRODUCTION: According to the December 1991 issue of the *Survey of Current Business*, expenditures of state and local governments account for more than 11 percent of the U.S. gross domestic product. Moody's 1991 Municipal Manual indicates that these governmental entities have an outstanding debt now approaching $800 billion, and a report by the Public Securities Association (1987) indicates that this debt grew at a compound annual rate of 12 percent from 1966 to 1986. State and local governmental activities continue to increase in magnitude, and evidently form an important part of the political and economic environment in which accounting operates. Important accountability issues distinctive to these organizations need accounting research attention.

The articles by Feroz and Wilson and Deis and Giroux in this issue, which we have been invited to review, address some of these topics. The study by Feroz and Wilson can be regarded as an extension to the public sector of capital-market-based research that examines the effects of financial-accounting disclosures on security prices and returns. They hypothesize segmentation of the market for municipal obligations along national and regional lines and study the effects of differential information disclosure on borrowing costs. In the other study, Deis and Giroux utilize quality reviews that were conducted by the Texas Education Agency to evaluate and rate the audits (by public accountants) of public schools' financial reports. They test hypotheses about audit quality that were originally developed in the context of commercial firms. Both studies thus represent extensions of theories and methods used in research of private-sector accounting and auditing issues. The contributions of the two articles are discussed, and modifications that consider the unique aspects of governmental accounting are presented in sections I and II. Other possible avenues for research are discussed in section III.

Invited by the Editor.

I. Feroz and Wilson's Paper

NUMEROUS studies in governmental accounting have investigated the role of financial reporting by local and state governments in credit evaluation. This research has consistently documented that accounting variables are useful in explaining bond rating classifications, as well as net interest costs (Ingram et al. 1987). In addition, studies by Wallace (1981) and Wilson and Howard (1984) suggest that substandard reporting practices result in lower bond ratings or higher borrowing costs. A closely related body of research has addressed other aspects of the disclosure policies of governmental units. For instance, Ingram and Dejong (1987) document that cities in states whose regulations do not conform with generally accepted accounting principles (GAAP) have less disclosure than those in unregulated or GAAP-regulated states. Giroux (1989) examines the influence of political factors on disclosure and Evans and Patton (1983) investigate links between disclosure and government form and size.

Feroz and Wilson's study represents a further step in the assessment of the effect of the quality of financial disclosure on the determination of the financing costs of municipalities. Closely related to the work of Wallace (1981) and Wilson and Howard (1984), its primary innovation is an explicit recognition of market segmentation in the municipal debt market. Feroz and Wilson hypothesize that the usefulness of financial disclosure depends on the market the instrument trades in. In the national market, investors are easily able to obtain alternative information to determine credit worthiness, and therefore the quality of the financial disclosure is not priced. Because there is little alternative information on the quality of management in the regional markets, the cost of a debt issue decreases with disclosure quality in that market.

Three measures of disclosure quality are identified and tested by Feroz and Wilson, who examine 119 bond issues marketed by 100 cities from 1978 to 1983. These measures are (1) a disclosure index developed by Rees (1982), (2) auditor type, and (3) professional certificate of conformance. They find that disclosure quality is not related to financing costs in the national underwriting market, but a significant negative association between disclosure quality and net interest cost (*NIC*) exists in the regional underwriting market. The authors then replicate their findings using city and bond issue size as alternative proxies for market segmentation.

Feroz and Wilson's explicit consideration of segmented markets is an interesting extension of the financing cost literature. Their arguments regarding the availability of alternative information parallel those used in capital-markets research. Specifically, they state that their argument is analogous to that of Atiase (1985) in that accounting information at the time of the bond offering is expected to have a greater effect on prices when there is a lack of alternative information, as is usual for municipalities whose bonds trade in the regional market. Their approach, however, does not examine the effect of the reported information on the calibration of prices, which might be investigated by examining the association between the magnitude of price changes and disclosure quality at the report's release date. Rather, they investigate the degree to which disclosure quality is valuable in reducing interest costs. This requires a link between the information conveyed in the signal and the prices of municipal bonds.

Feroz and Wilson assert that disclosure, type of audit firm, and professional certification are indicators of management competency. Evans and Patton (1987) used a similar signalling argument to explain city managers' incentives for obtaining a certif-

icate of conformance. Presumably then, all three variables—the disclosure index, auditor type, and certification of conformance—proxy for the same variable, management quality. If management quality reduces the likelihood of default risk, then the higher the signal, the lower the bond interest costs. Because there is sufficient alternative information in the national market to assess management competency, investors' priors on management quality are precise. However, because there is little information in the regional market, traders have diffuse priors on management quality and therefore weight the disclosure index heavily in determining high-quality management.

If management competency is the underlying construct then this *latent variable* should be estimated initially by combining each of its three proxies. To clarify what is involved consider the following system of equations:

$$NIC=\alpha_0+\alpha_1 MGTQLT+\alpha_2 BONDRAT+\alpha_3 AVMAT+\alpha_4 BBIND + \sum_{k=1}^{K}\alpha_{4+k} FINVAR_k, \quad (1)$$

$$BONDRAT=\beta_0+\sum_{k=1}^{K}\beta_k FINVAR_k+\beta_{K+1} MGTQLT, \quad (2)$$

$$MGTQLT=\gamma_0+\gamma_1 INDEX+\gamma_2 COFCONF+\gamma_3 BIG8AUD, \quad (3)$$

where the symbols are defined as in Feroz and Wilson with the following two exceptions. *BONDRAT* is a discrete variable reflecting bond rating, $FINVAR_k$, $k=1,\ldots,K$, which are financial variables used to explain bond rating as in Wallace (1981). *MGTQLT* is the latent variable representing management quality. This recursive system of equations suggests that *MGTQLT* could affect *NIC* in different ways, for instance, through β_{K+1} in the bond-rating equation (2) or via α_1 in equation (1), the *NIC* equation. These possible differences in the causal paths suggest alternative testing strategies with latent-variable analysis. Unfortunately, we cannot estimate these equations because information on financial variables is not available to us.

The reason bond costs fluctuate with the quality of accounting and auditing requires a more thorough discussion than that supplied in Feroz and Wilson. For instance, in footnote 5, they seem to reject the notion that these disclosure variables signal management quality. Moreover, many of their citations seem to imply that regional underwriters are closer to the issuers (fn. 1). If regional investors are closer to the issuer, why is the disclosure index more useful in the regional market than in the national market? Although we believe the authors have made a convincing argument that the municipal bond market may be segmented, they have not been entirely successful in explaining how this segmentation affects investors and the value of information.

There are reasons to question whether the data really support the argument of disclosure quality. Given that Standard and Poor's credit rating agency explicitly considers disclosure quality in the rating process,[1] why does the bond rating not fully capture the effect of the disclosure policy? That disclosure quality would drive bond ratings appears to be consistent with the work of Wallace (1981) who finds a statistically significant association between bond ratings and measures of audit quality.

[1] In 1980, Standard and Poor's announced that it would accord a negative factor in its ratings of reports not prepared according to GAAP or some modification. (See Standard and Poor's Corp. 1983.)

If bond ratings fully capture the quality of disclosure, why should a significant relationship exist between *NIC* and disclosure quality in the segmented market? One potential reason is that the interaction variable *UWIND* is correlated with some missing factor.

The number of bidders in the underwriting market for the bonds and the effect of state laws may be related both to underwriter type and *NIC*. Research has consistently shown a significant negative relation between number of bidders and interest costs (Cook 1982). Hence, disclosure could be spuriously correlated with number of bidders; conversely, high-quality disclosure could attract more bidders. Evidence of the latter would be of special interest. Prior research has also documented that disclosure is in part driven by state laws (Banker et al. 1989a; Ingram and Dejong 1987). Moreover, many states require GAAP. Thus, disclosure quality may be driven by state-specific factors as well as by signals from management. We know that net interest costs are driven in part by state pledging requirements. State taxes may also have differential effects on yields although such a relationship has not yet been documented empirically. In Feroz and Wilson's examination, we know nothing of the state representation or number of bidders in the sample. Although they define two distinct markets for municipal bonds for which yields may vary due to the supply and demand characteristics, no acknowledgment of this fact is embedded in the estimation of *NIC*.

Feroz and Wilson's table 1 reveals that the *NIC* in the regional market is *lower* than that in the national market over their sample period, a finding that is interesting in its own right. This yield differential is the essence of segmented markets, that is, different yields result from varying supply and demand characteristics. A regression with a dummy variable indicating type of market (1 = regional, 0 = national) may control for these potential shifts in interest costs across markets, as shown in our table 1. The regression reported by Feroz and Wilson in their table 4 as model 1B is shown in the left column of our table 1. Note that their model allows for only a slope difference across market types. The regression reported in the middle column of our table 1 (including *UW*) allows for both a slope and an intercept difference. The table reveals that it is virtually impossible to distinguish the effect of disclosure type (*UWIND*) from the overall regional effect (*UW*). That is, the slope change on the disclosure index for the regional issues noted in the regression on the left may be proxying for the difference in mean *NIC* across markets, rather than for disclosure differentials. Left unanswered is what drives this yield differential. It may be that disclosure quality does drive these differences; it is important, however, that theories of disclosure developed in for-profit environments be modified in the governmental market. Other drivers of disclosure unique to the state and local environment need to be incorporated in the research design.

A primary distinction between the financial reporting of governmental units and that of commercial businesses concerns the end users of the financial statements. Although many parties may be interested in the reports of commercial enterprises, the information needs of investors and creditors have been emphasized (SFAC No. 1). Governmental accounting reports are also used by creditors,[2] but governmental agen-

[2] In 1985, new issues of municipal bonds totaled $222 billion and exceeded total private-sector capital issues by $30 billion (Public Securities Association 1987).

Table 1

Extension of Feroz and Wilson's Regression Model 1B, Table 4

(Absolute *t*-statistics in parentheses)

$$NIC=\alpha+\beta_1 BBIND+\beta_2 AVMAT+\beta_4 A1+\beta_5 A+\beta_6 BAA1 +\beta_7 BAA+\beta_8 INDEX+\beta_9 UWIND+\beta_{10} UW$$

	Feroz and Wilson	*Including UW*	*Excluding UWIND*
INTERCEPT	−1.455 (4.93)	−1.425 (4.59)	−1.355 (4.52)
BBIND	0.919 (47.04)	0.917 (46.29)	0.915 (46.60)
AVMAT	0.120 (9.24)	0.120 (9.13)	0.122 (9.43)
AA	−0.059 (0.41)	−0.054 (0.37)	−0.035 (0.24)
A1	0.191 (1.18)	0.197 (1.21)	0.208 (1.28)
A	0.338 (2.14)	0.339 (2.14)	0.339 (2.14)
BAA1	1.074 (3.17)	1.069 (3.14)	1.051 (3.09)
BAA	1.646 (7.93)	1.649 (7.90)	1.668 (8.04)
INDEX	−0.000 (0.13)	−0.001 (0.29)	−0.003 (1.19)
UWIND	−0.005 (2.66)	−0.003 (0.88)	— —
UW	— —	−0.058 (0.31)	−0.206 (2.52)
p (model)	0.0001	0.0001	0.0001
Adjusted R^2	0.9575	0.9572	0.9573

Note: *UW*=1 for a regional market, 0 otherwise. The definitions of other variables are as in Feroz and Wilson.

cies do not have a unique group of investors or equity holders. Rather, these entities provide information to diverse but important constituencies such as grantors, taxpayers, voters, legislators, and oversight boards. Therefore, measures of performance cannot be reduced to a simple "bottom line" notion such as earnings or return on investment. Governmental reporting to various constituencies requires information on whether the unit is operating efficiently, effectively, and according to the specific guidelines of these interested parties.

Examination of how governmental accounting information is processed by decision makers other than creditors is an important area for future research on governmental financial-reporting issues. We know little about whether and how taxpayers incorporate accounting information, such as fund deficits or debt levels, in their voting

decisions. Governmental units, such as legislative bodies, delegate tasks to managers, appropriations are made, and resources are then consumed. Because many of the outcomes are not financial, it is not clear how voters, managers, taxpayers, legislative committees, and oversight boards utilize accounting information.

An example of research that links accounting information and governmental constituencies is the Giroux and Wiggins (1987) analysis of accounting numbers and levels of government grants. Giroux and Wiggins find that intergovernmental grant levels increase with the fiscal surplus of the grantee rather than with fiscal deficit. Another example is Epple and Schipper's (1981) analysis of the underfunding of pension obligations by municipalities. Their evidence suggests that pension underfunding is capitalized into lower housing prices. Issues regarding "interperiod equity" are considered important elements of accountability by the Government Accounting Standards Board (GASB 1990). Further research on the link between the accrual accounting system, management decisions, and economic outcomes (Goldin 1985) will help delineate the effects of governmental financial reports. More generally, a promising avenue for research in this area involves investigation of how the array of constituencies use accounting information to allocate resources and make other decisions.

II. Deis and Giroux's Paper

Recent auditing research concerning governmental units has included audit pricing (Beck and Barefield 1986), school board auditor changes (Roberts et al. 1990), audit fees (Baber et al. 1987; Rubin 1988), and the relation of audit budgets to credit costs (Marks and Raman 1986). Much of this research has used concepts that were initially developed for explaining auditing phenomena in the commercial sector. Hence, the results have tended to confirm many of the findings from the private sector. Although testing theories in different markets is useful in that it helps determine a theory's generalizability, there may be unique variables within markets. One such unique explanatory variable in many governmental studies is political competition. Baber et al. (1987) find that political competition is positively related to audit fees. As they point out, however, they have no theory to explain their finding. Introducing the preferences of other interested parties into the governmental auditing environment would be fruitful for future research.

Deis and Giroux's study examines factors determining quality of governmental audits. Their hypotheses are based on theories that were originally developed in the context of the private sector. Their principal hypotheses are that audit quality increases with reputation effects and decreases with the power of the client. The reputation-effect argument rests on the assumption that auditors will cut quality to retain clients without substantially increasing audit fees. The extent of the quality reduction, however, will be traded off against the potential loss in future audit engagements and fees in the event that an audit firm's reputation is damaged. The power-conflict argument states that wealthy clients hire auditors principally to satisfy the requirements of third parties. Such clients are not interested in the auditor's findings *per se* and will exert pressure on the auditor to perform a low-quality audit.

Deis and Giroux test their hypotheses using 232 observations of audit quality obtained from quality reviews by the Audit Division of the Texas Education Agency

Table 2
Factor Analysis of Deficiency Items for the Deis-Giroux Study

Deficiency Item	Deis and Giroux: Perceived Rank by Director of Audits	Factor Analytic Weights: Factor 1: Major Audit Deficiencies	Factor Analytic Weights: Factor 2: Minor Audit Deficiencies
Internal Control: Major	5	0.308	−0.182
Internal Control: Minor	18	0.065	0.474
Legal Compliance: Major	3	0.325	−0.038
Legal Compliance: Minor	10	−0.170	0.188
Substantive Tests: Major	7	0.402	−0.055
Substantive Tests: Minor	19	0.033	0.260
No Engagement Letter	14	0.331	0.016
No Management Representation Letter	6	0.301	0.057
Working Papers: Major	2	0.238	−0.041
Working Papers: Minor	17	0.070	0.184
Audit Program: Major	1	0.394	−0.035
Audit Program: Minor	15	−0.016	0.227
Audit Procedures: Major	4	0.306	0.223
Audit Procedures: Minor	16	−0.179	−0.039
Inadequate Statistical Sampling	13	0.036	0.439
Inadequate Audit Risk Assessment	12	−0.006	0.500
Errors in Financial Statements	8	0.060	0.103
Errors in Audit Reports	11	0.123	0.106
Ethics Violations	9	0.194	−0.164

(TEA), which reviewed public accountants' audits of school districts.[3] The regression results show that auditor quality increases with number of auditor clients, and decreases with school district wealth, and audit tenure. They conclude that their results support both the reputation and power conflict arguments.

Deis and Giroux develop a continuous metric of audit quality to relate to predictor variables. Their measure of audit quality is constructed by weighting the responses to 19 deficiency areas examined by the TEA audit teams. Because prior studies essentially infer audit quality from auditor type (e.g., Big Eight vs. non-Big Eight), Deis and Giroux state that their metric is a more refined measure of quality. We agree with their assertion. A primary contribution of the study is the development of a quality metric that allows for a more complete test of established theories of audit quality.

A problem, however, arises in deciding how the 19 variables from the compliance reports should be weighted in order to construct a proxy of auditor quality. Deis and Giroux chose to weight the 19 variables in inverse relation to their perceived importance as determined by the director of audits of the TEA (see the second column of our table 2). An alternative approach would estimate a logistic response function model to predict the referral decision and have the weights inputed by means of maximum likelihood estimates. This would help reduce the subjectivity that is implicit in the approach of Deis and Giroux. From table 2 of their study, an overlap is evident between the range that incorporates all of the non-referrals (0 − 1.107) and the quality for the refer-

[3] Such quality reviews, originally mandated by the U.S. Office of Management and Budget, have been enacted into law by Congress in the Single Audit Act of 1984, so this practice has spread to many states as well as to the federal government. See Deis et al. (1990) and Berry and Harwood (1987).

rals (0.563 − 3.086). It is an empirical issue whether the ranges from a logit model overlap less than those from the subjective weightings. We examined the association between the 19 deficiency variables and the referral decision using a logit model. The results revealed that the referral decision was predictable. Each referral decision could be explained as a combination of the 19 deficiency variables. In fact, the referral decision could be explained with a 97 percent accuracy by using a subset of only five of the 19 variables. Because of high collinearity among many of the deficiency variables, we chose not to interpret the individual coefficients. The results from logit estimation are reassuring in that they suggest that the referral decision is predicated on concepts used by Deis and Giroux as measures of audit quality.

The high collinearity of the individual deficiency items in Deis and Giroux suggests that audit quality may be measured by just a few main attributes. Therefore, we also conducted a principal-components analysis using the 19 deficiency items to identify common dimensions. The two most important factors are described in our table 2. The first factor explains approximately 25 percent of the variation in markings and the second explains 10 percent. These two factors have a natural interpretation. The loadings on the first factor suggest that this component represents major audit deficiencies in internal control, legal compliance, substantive testing, and audit programs and procedures. A review of the loadings for the second factor suggest that it represents minor deficiencies. The high correlation (0.86) between the first factor and the referral decision of the TEA indicates that referral decisions are based on major audit deficiencies, as opposed to (1) the overall quality metric designed by Deis and Giroux, which has a correlation of 0.63 with the referral decision, or (2) our minor audit deficiencies factor, which has a correlation of −0.02 with the referral decision.

In table 3, we report estimates from regressions with the same predictors as in Deis and Giroux. The three alternative quality metrics used as dependent variables are the referral decision and the two principal factors, as discussed above.[4] It is reassuring to note that the general results reported by the authors are also present in the logit and primary-factor models. In fact, the results from our model of the major audit deficiencies are very similar to those reported by the authors. This triangulation helps to delineate precisely what their quality metric represents.

A review of the regression results in table 4 of Deis and Giroux are generally supportive of their primary hypotheses. One variable they include as a control variable is audit hours,[5] which they document is positively related to quality. We agree that hours and quality are related, but surmise that both are jointly determined by the auditor. Therefore, OLS estimates lead to simultaneous equations bias. In a manner similar to O'Brien and Bhushan (1990) we estimate the following system of simultaneous equations:

$$QUALITY = \beta_0 + \beta_1 TENURE + \beta_2 CLIENTS + \beta_3 PEER + \beta_4 BOARD + \beta_5 WEALTH + \beta_6 YEAR + \beta_7 REPORT + \beta_8 TIME + \beta_9 HOURS;$$

$$HOURS = \phi_0 + \phi_1 TENURE + \phi_2 CLIENTS + \phi_3 SIZE + \phi_4 WEALTH + \phi_5 TIME + \phi_6 QUALITY.$$

[4] Seemingly unrelated regression procedure is not required because the independent variables are identical. Since referral decision is a dummy variable, parameters and standard errors are estimated by using a logit model.

[5] The high correlation between *HOURS* and *SIZE* in Deis and Giroux's model results in a Belsley-Kuh-Welsch condition index of 32.54, with variance proportions of 0.556 and 0.938 for the two variables.

Table 3

Alternative Measures of Audit Quality for the Deis-Giroux Study

(Absolute z- or t-statistics in parentheses)

$$Q=\beta_0+\beta_1 TENURE_i+\beta_2 CLIENT_i+\beta_3 PEER_i+\beta_4 BOARD_i+\beta_5 SIZE+\beta_6 WEALTH+\beta_7 YEAR+\beta_8 REPORT+\beta_9 TIME+\beta_{10} HOURS$$

Variable	Referral (0, 1) (Logit Estimation)	Factor 1: Major Audit Deficiencies	Factor 2: Minor Audit Deficiencies
INTERCEPT	NA	NA	NA
TENURE	0.035 (1.45)	0.050 (3.33)	−0.011 (1.00)
CLIENTS	−0.185 (1.77)	−0.074 (2.14)	−0.005 (0.22)
PEER	−7.941 (0.40)	−1.021 (3.11)	−0.314 (1.31)
BOARD	0.395 (0.40)	0.054 (0.09)	0.645 (1.58)
SIZE	0.674 (2.99)	0.490 (3.95)	0.010 (0.12)
WEALTH	0.511 (1.60)	0.539 (2.86)	−0.018 (0.13)
YEARS	−0.130 (0.28)	−0.327 (1.23)	−0.098 (0.51)
REPORT	−0.669 (1.13)	−0.218 (0.74)	0.015 (0.07)
TIME	1.134 (1.06)	1.396 (2.35)	0.701 (1.63)
HOURS	−1.410 (3.28)	−1.007 (4.29)	−0.504 (2.96)
p (model)	0.0001	0.0001	0.0147
Adjusted R^2	0.2403	0.2144	0.0525

The first equation suggests that quality is driven by many of the variables suggested by Deis and Giroux. Size, however, is omitted from the quality equation. The second equation indicates that the number of hours the auditor works is jointly determined with desired quality. Hours are hypothesized to be a function of desired quality, client size and wealth (*SIZE* and *WEALTH*), industry expertise (*CLIENTS*), experience with client (*TENURE*), and complexity or difficulty (*TIME*). Estimating these relations simultaneously with three-stage least squares results in the coefficients reported in our table 4.[6] Note that *HOURS* is driven by size, complexity (*TIME*), and quality. (Recall that high quality is represented by low measures of the *QUALITY* variable.) *QUALITY*,

[6] Limited information maximum likelihood and two-stage least squares estimates are very similar and are not reported separately.

Table 4

Simultaneous-Equations Model for the Deis-Giroux Study

(Absolute *t*-statistics in parentheses)

$$QUALITY = \beta_0 + \beta_1 TENURE + \beta_2 CLIENTS + \beta_3 PEER + \beta_4 BOARD + \beta_5 WEALTH + \beta_6 YEAR + \beta_7 REPORT + \beta_8 TIME + \beta_9 HOURS$$

$$HOURS = \phi_0 + \phi_1 TENURE + \phi_2 CLIENTS + \phi_3 SIZE + \phi_4 WEALTH + \phi_5 TIME + \phi_6 QUALITY$$

Variable	*Quality*	*Hours*
INTERCEPT	−2.354 (1.68)	2.525 (3.19)
TENURE	0.017 (2.80)	0.000 (0.02)
CLIENTS	−0.025 (1.79)	−0.014 (1.40)
PEER	−0.566 (4.09)	— —
BOARD	0.223 (0.97)	— —
SIZE	— —	0.309 (11.06)
WEALTH	0.125 (1.57)	0.011 (0.20)
YEAR	0.002 (0.02)	— —
REPORT	−0.182 (1.46)	— —
TIME	0.553 (2.24)	0.428 (2.50)
HOURS	−0.090 (0.68)	— —
QUALITY	— —	−0.274 (1.97)

however, continues to be related to the variables hypothesized by the reputation-effects theory, peer review (*PEER*) and audit complexity (*TIME*), but is not as strongly driven by hours as inferred by Deis and Giroux.[7]

There are questions as to whether the data really support the two hypotheses of reputation effects and power conflict. DeAngelo (1981) defines audit quality as including both competence and independence. Deis and Giroux readily admit that their hypothesis tests consider only variables that impinge on independence and ignore issues of competence. This omission of potential explanatory variables can lead to biases in both the estimates of the coefficients and the corresponding standard errors.

[7] This reexamination of the data with a simultaneous equations model points to the multiple meanings of constructs. In the *HOURS* model, *TENURE* and *CLIENTS* proxy for expertise. In the *QUALITY* model, these variables represent the reputation-effects argument.

There are also differences in emphasis that need to be considered in governmental auditing. Many governmental audits deal with compliance issues and are concerned with whether a reporting entity has utilized its resources according to statutes and specific legislative appropriations. This differs from the customary emphasis on faithful representation in audits of commercial enterprises (i.e., whether the financial statements fairly represent the financial position of a firm). This suggests that the factors that make for a "quality" audit may differ between the private and governmental sectors. It is not obvious, therefore, that the associations Deis and Giroux find in their study carry over into audits of commercial firms or that all the relevant variables have been incorporated appropriately in their analysis. Further, as we shall see in the next section, there are many issues in governmental auditing outside the scope of the matters studied by Deis and Giroux.

III. Other Avenues for Research

The articles by Feroz and Wilson and Deis and Giroux are welcome additions to the sparse coverage of topics in governmental accounting and auditing in *The Accounting Review*.[8] Major developments that have been occurring in these areas invite research attention. Guidance for municipal accounting was previously provided by periodic update of the "blue book" (*Governmental Accounting, Auditing and Financial Reporting*) by the National Council on Governmental Accounting (NCGA) under the sponsorship of the Municipal Finance Officers Association. This has been supplanted with continuing attention to governmental accounting problems by the GASB.[9] The Federal Accounting Standards Advisory Board (FASAB 1991), partly in response to the Chief Financial Offices Act of 1990, has articulated its objectives in the preface to its exposure draft entitled *Financial Resources, Funded Liabilities and Net Financial Resources of Federal Entities:*

> The Board plans to identify users' information needs, articulate objectives of federal accounting and reporting, and determine the accounting principles needed to satisfy various information needs. Each of these steps will require varying degrees of research and deliberation. Results of the research will provide a basis for developing a conceptual overview for federal accounting and reporting and will assist the Board in developing accounting standards.

The magnitudes involved are huge, and the issues to be addressed are important. As we noted in our opening paragraph, state and local governments now account for some 11 percent of U.S. gross domestic product. The total of public expenditures, which includes federal as well as state and local government, approaches 40 percent of gross domestic product. With the addition of the closely related area of not-for-profit activities and entities,[10] the total tops out at well over 40 percent.

[8] We are grateful to M. Granof and S. Y. Lee for helping us through the last five volumes of *The Accounting Review*. We located only four articles that dealt with governmental accounting and two more that addressed not-for-profit accounting.

[9] The NCGA identified the overall goals of governmental accounting as providing information useful for (1) making economic, political and social decisions, (2) demonstrating accountability and stewardship, and (3) evaluating managerial and organizational performance. Its successor, the GASB, also recognized that uses of external financial reporting of governmental units consist of (1) comparing actual financial results with the legally adopted budget, (2) assessing financial condition and results of operations, (3) assisting in determining compliance with the finance-related laws, rules and regulations, and (4) assisting in the evaluation of efficiency and effectiveness.

[10] We will not address the research issues of not-for-profit entities. A summary regarding management and accountability may be found in Drucker (1990), and a description of current budgeting and accounting practices may be found in Anthony (1991).

Responses from other disciplines have been forthcoming in forms which include the development of PPBS (program, planning, budgeting systems) by the economics division of the RAND Corporation. As described in Cheek (1977, 8–11), these have stimulated further developments like those represented by ZBB (zero-base budgeting) and MBO (management by objectives)—all of this being done without any contributions by accounting researchers that we have been able to discover.[11]

Continuing this evolution to broadened realms of accountability, GASB has recently issued a research report which is also a call to research entitled "Service Efforts and Accomplishments Reporting: Its Time Has Come" with a foreword by M. Ives, its Director of Research, from which we excerpt the following:

> The GASB believes that SEA [Service Effort Accomplishment] will become a major element of governmental financial reporting, assisting in fulfilling government's duty to be publicly accountable and in enabling citizens, elected officials and other users of financial reports to assess that accountability. . . . The researchers [in this report] identify four types of SEA indicators (input, output, outcomes and efficiency) but tend to emphasize the more complex ones: outcomes and efficiency. This is because the outcomes and efficiency indicators—relating efforts to accomplishments—are useful not only in accounting for the past, but also in planning for the future. They help answer some of the fundamental questions of state and local government: How much better off might the citizenry be as a result of specific increases in resources for a particular activity? What are the tradeoffs (in terms of likely outcomes) from applying an expected decline in resources to one activity as compared with another (p. iii).

If governmental accounting is described as being in a state of rapid evolution, one would have to use a term like "revolutionary" to characterize the developments initiated in the 1960s by the U.S General Accounting Office (GAO). According to Elmer Staats, the former comptroller general, these developments were undertaken when it was found that the financial audits used by his predecessor were not adequate for Congress and the public once the "Great Society" programs of Lyndon Johnson were launched.

Still referred to as "GAO-type audits," these audits have a variety of other names, such as performance audits, management audits, value-for-money audits,[12] and comprehensive audits. By whatever name, these audit concepts and practices have now spread to state governments and to governments in other parts of the world. They have also affected the conduct of internal audits in private industry and practices in public accounting, as reflected in the management audits sometimes conducted for public utility commissions.

The revolutionary nature of these auditing developments can perhaps best be indicated by noting the reversal that occurs in management-auditor relations. In customary financial audits, which are also stylized as "attest audits," auditors review the representations that management intends for the audiences it selects (usually the financial community). In comprehensive audits, the situation is reversed, and the auditor selects the area of management activity to be examined as well as the audiences to which the results are to be reported. Management is then given an opportunity to attest or take

[11] There have, however, been studies (see, e.g., Patillo 1977) undertaken by organizations like the National Association of Accountants to describe and (to some extent) evaluate some of these developments.

[12] This name was apparently coined by J. J. Macdowell when he was auditor general of Canada. He subsequently changed it to "comprehensive audits," which appears in the title of the Comprehensive Audit Foundation that he helped organize. For further details, see the discussion under the term "audit" in *Kohler's Dictionary for Accountants* (Cooper and Ijiri 1983).

exception to all or parts of what is reported, with comments that are (or should be) incorporated in the audit's report prior to its release.[13]

These new types of audits may take various forms and focus on various issues. According to Churchill et al. (1977), the issues may be classified in terms of (1) propriety (of objectives and methods), (2) effectiveness (ability to state and achieve goals), and (3) efficiency (benefits achieved, resources used). It is possible to cover all three areas in a single audit, as was done by the GAO in its examination of the FBI's domestic surveillance activities in the 1960s. These activities were found to be improper in their objectives (no constitutional or legal authority) and methods (use of wiretaps without court authorization) as well as ineffective (no clear statement of goals and no achievements of note) and inefficient (few benefits and excessive expenditures).[14]

From the standpoint of ordinary financial audits, all this might seem farfetched. But this response overlooks challenges and opportunities that might be involved in exploring possibilities and locating boundaries for such expanded-scope audits.[15] Even the GAO audit of the FBI, for instance, suggests possible uses for such audits in objectively as well as completely evaluating and guiding local police activities (in contrast to the usual reviews by internal affairs divisions of the same departments). This is a topic that should be of interest for research, at least in governmental accounting and auditing.

This orientation toward improvement of practice is not unknown in respected circles of research. Economics proved responsive, for example, in developing the tools and concepts that are associated with cost/benefit and cost/effectiveness analyses. Other related disciplines, like management science and operations research, have also been responsive in a variety of ways. Data envelopment analysis,[16] for example, was developed in response to the need for evaluating activities such as the "Program Follow Through" experiment in U.S. public schools. The experiment involved multiple outputs and inputs without any "bottom line" being evident; also, unknown and complex interrelations between program components placed severe strains on customary regression, correlation, and ratio approaches.

IV. Concluding Remarks

In closing, we do not want to leave an impression of blaming *The Accounting Review* for lacunae in the research activities reported in its pages. Like any journal of scientific research, the *Review* must be responsive, in large part, to what researchers supply and demand. Researchers in accounting, it seems, have not been responsive to the problems and opportunities associated with developments in governmental accounting. Deficiencies in the preparation of researchers, as noted in a recent editorial by Burton and Sack (1991), have not been confined to the areas of governmental accounting and auditing.[17]

[13] This is standard GAO practice, but it is not always followed. For instance, a report issued in July 1991 by the Office of the Texas Comptroller of Public Accounts recommends sunsetting the TEA (which issues the ratings cited by Deis and Giroux) but did not provide TEA with an opportunity to respond to the findings or recommendations contained in the report.

[14] For further discussion see Churchill and Cooper (1978).

[15] See the discussion in Burton and Fairfield (1982).

[16] See Banker (1989) and Banker et al. (1989b) for an introduction to data envelopment analysis from the perspectives of econometric and operations research.

[17] See also Cooper and Zeff (1992).

Our examples from other disciplines that have been responsive to these needs and opportunities might be regarded as slanted toward a heavy emphasis on methodology as in econometrics or management science. Alternatives to such an emphasis might be considered, however, and need not involve any serious abandonment of what has already been accomplished in present programs for Ph.D. preparation in accounting. One possibility is to develop a research agenda that ensures that use is made of results from base disciplines in a sufficiently rapid manner or, even better, in a way that influences these disciplines in directions that promise to be of use. This can be done, as has already been demonstrated, by interactions between statistics and auditing research.[18] Another alternative is to encourage work with persons in other disciplines who are capable of developing new methods or modifying existing ones in response to what is needed to address accounting issues.

Still other alternatives might be suggested, but the main desiderata lie in the development of attitudes that will encourage accounting researchers to respond to problems in the profession and practice of auditing and accountancy. Without this attitude, the ability to communicate and interact with others in disciplines such as statistics, operations research, economics, psychology, and computer science is likely to reinforce rather than remedy the kinds of deficiencies in research attention that we have been examining.

[18] There has even been a National Research Council study on this topic. See *Statistical Models and Analysis in Auditing*, prepared for the National Research Council Board of Mathematical Sciences by the Committee on Applied and Theoretical Statistics (NRC 1988).

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