

**LOCAL GOVERNMENT AUDIT PROCUREMENT REQUIREMENTS,
AUDIT EFFORT, AND AUDIT FEES**

by

Laurence E. Johnson

Department of Accounting
College of Business
Colorado State University

Robert J. Freeman

Area of Accounting
College of Business Administration
Texas Tech University

and

Stephen P. Davies

Department of Agricultural and Resource Economics
College of Natural Sciences
Colorado State University

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Please direct correspondence to:

Laurence E. Johnson

Department of Accounting
College of Business
Colorado State University
Fort Collins, Colorado 80523

(970) 491-6126
(970) 491-2676 fax

EMAIL: Larryej@lamar.colostate.edu

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SUMMARY

The quality of government audits performed by independent certified public accountants is an ongoing public policy concern. The Government Finance Officers Association (GFOA) recommends that to promote audit quality, audit procurement procedures should emphasize auditors' technical qualifications over fees. For several years, Florida local governments have been subject to laws that essentially operationalize the GFOA's recommended audit procurement approach. Thus, comparing audit quality proxies between Florida governments and those in other states tests the validity of the GFOA's recommendation. Hackenbrack *et al.* (2000) report that the fiscal 1992 audit fees of Florida local governments exceed those of local governments in surrounding states and conclude that Florida's audit procurement requirements created an "audit market climate" that promotes audit quality. We extend Hackenbrack *et al.*'s research by comparing the audit effort (hours) and audit fees associated with selected Florida local governments with the audit effort and fees associated with a sample of nonFlorida local governments for fiscal 1996. We find that both audit hours and audit fees are higher in Florida vis-a-vis those of other local governments. Our results replicate Hackenbrack *et al.*'s findings and provide further empirical support for the GFOA's premise that appointing auditors principally on the basis of their technical qualifications enhances audit quality.

Key Words: Audit quality, Audit Effort, Audit Fees, Audit procurement.

Data Availability: The data are available upon request.

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INTRODUCTION

Government audit quality has been a public policy concern since the mid-1980s, when a U.S. General Accounting Office (GAO) study revealed that government audits performed by independent certified public accountants (CPAs) frequently were substandard in terms of both fieldwork and reporting (GAO 1986). Poor audit work was attributed in part to engagement of auditors not familiar with the government environment and thus not qualified to perform government audits. In turn, the engagement of unqualified auditors was considered a consequence of lax audit procurement procedures, in which proposed audit fees, rather than the auditor's professional competence, received undue emphasis in the auditor appointment decision.

The GAO and the American Institute of Certified Public Accountants (AICPA) studied the problem of substandard government audits by CPAs; both organizations concluded that audit procurement procedures could influence government audit quality (AICPA 1987; GAO 1987). Specifically, the GAO study identified "four critical attributes" of high-quality audit procurement procedures, (1) competition among CPAs, (2) solicitation of comprehensive audit proposals by the auditee, (3) technical evaluation of auditor qualifications by the auditee, and (4) presence of a written agreement between the auditee and the auditor. Studies by Wardlow and Friar (1989) and Raman and Wilson (1994) support the GAO's conclusion that these procedures enhance local government audit quality.

The GAO also recommended that detailed auditor procurement guidance be developed to assist state and local governments. In response, the Government Finance Officers Association (GFOA) and the National Association of State Auditors Comptrollers and Treasurers (NASACT) jointly developed the *Audit Management Handbook*; it provides "step-by-step guidance to public finance professionals on how to obtain a [high] quality audit of their government's financial statements" (Gauthier 1989, p.v). A major theme of the *Handbook* is that technical qualifications

should be the primary consideration in the appointment of external auditors. In the GFOA's view, audit fees, though not unimportant, should be a secondary consideration.

Many states are involved to varying degrees in local government audit procurement, typically by monitoring the process or approving the selection of the independent auditor (Wardlow and Friar 1989; NASACT 1996). Florida is unique among the 50 states in that its local governments have long been subject to laws requiring prospective auditors to be evaluated on technical qualifications before fees are negotiated.¹ Florida's posture in this regard is consonant with the GFOA recommendation that professional competence be the paramount criterion for auditor selection.

From 1972 until 1993, the Florida public accountancy statute (Florida Statutes Ch. 473.317, hereafter Ch. 473) prohibited cities and counties from obtaining audit fee estimates until prospective auditors "had been ranked by other means, including quality of work and prior experience" (State of Florida Office of the Auditor General 1995, p. 146). After establishing rankings, a government would attempt to negotiate a contract, including fees, with the top-ranked audit firm. If negotiations failed, the government then negotiated with the second-ranked firm, etc., until a satisfactory arrangement was reached. (Florida's Supreme Court invalidated Ch. 473 in July 1993 on free speech grounds).

Hackenbrack *et al.* (2000) compared the fiscal 1992 audit fees of Florida municipalities with the audit fees of municipalities in seven other southeastern states, finding evidence of fee premia associated with Florida governments. Hackenbrack *et al.* assert that Florida governments benefit from "superior auditor performance" in that, comparatively, Florida's local government audit environment is characterized by (1) a predominance of then-Big 6² firms, (2) comparatively large practice offices, (3) a larger proportion of municipal clients in the auditors' portfolios, and (4) a higher percentage of governments earning the GFOA Certificate of Achievement for Excellence in Financial Reporting.

The assertion of superior auditor performance is not fully persuasive based on the evidence. For example, Hackenbrack *et al.* find no fee premia associated with Big 6 auditors (in contrast to the

findings of several prior studies) but note that Big 6 firms have a comparatively high presence in the Florida audit market. Thus, it is reasonable to question whether Hackenbrack *et al.*'s finding of fee premia associated with Florida is in fact driven by the Big 6 influence. A more compelling answer to the important question of whether Florida's audit procurement requirements are good public policy would involve a direct measure of audit effort. We provide that answer in this paper.

We report a study comparing fiscal 1996 audit effort (audit hours) and audit fees of a sample of Florida counties and cities with fees and hours of counties and cities in other states. We find that audit hours are higher for audits of local governments in Florida than in other states. We also replicate Hackenbrack *et al.*'s finding of fee premia associated with Florida governments. Our results suggest that Florida's audit procurement requirements have been effective in promoting audit quality in the local government sector. By extension, the study's results support the GFOA's view that a high-quality audit is more likely if the technical qualifications of prospective auditors are given weight over fees in the appointment decision.

Hackenbrack *et al.* (p. 2) conclude that “the bidding restriction [imposed by Ch. 473] created a market climate [in Florida] in which required non-price competition impeded the entry of the lesser qualified auditors while the anticipated financial rewards induced the entry of the more qualified auditors.” Significantly, a Florida local-government audit procurement statute (Chapter 11, §.45.3, hereafter Ch. 11) retains the thrust of the now-invalid Ch. 473, that is, precedence of technical ability over fees in auditor selection.³ Certain classes of local government (including *noncharter* counties and special districts) are required to follow the provisions of Ch. 11; charter counties and municipalities are permitted, but not required, to do so.

We contend that Ch. 11 contributes to the maintenance of Florida's quality-oriented government audit market climate. Moreover, though Ch. 473 was invalidated in 1993, there is no reason to believe that its market-climate effects disappeared immediately thereafter, particularly for continuing auditors appointed while Ch. 473 was in effect. Our data identify Florida governments (1) that followed the requirements of Ch. 11 in appointing their auditors or (2) whose 1996 auditors

were appointed under the provisions of Ch. 473. Thus, the interpretation of tests for differences in audit effort (and fees) between Florida governments and those in other states based on 1996 data is straightforward.

The remainder of this paper is organized as follows. In the next section, we identify theoretical and empirical issues related to audit quality and audit effort and develop the research hypothesis. The third and fourth sections present the regression model, data collection and analysis. We conclude with a discussion of the study's findings, implications, and limitations.

AUDIT QUALITY AND AUDIT EFFORT

A well-accepted theoretical definition of audit quality, the probability that financial statements are materially in error, is difficult to operationalize because it is unobservable (Copley and Doucet 1993a). Researchers therefore have employed various proxies for audit quality, including auditor size and audit fees. Auditor size, typically Big 6 vs. nonBig 6, is dichotomous and as such is a coarse measure. Indeed, the validity of a simple Big 6/nonBig 6 distinction as a definitive quality measure is further called into question by Francis *et al.* (1999 p. 186) who raise the possibility that “reputation and expertise of individual Big 6 offices are not standard and uniform but vary from one locale to another along with the city-specific clientele.” Francis *et al.*'s suggestion is consistent with findings from behavioral research (Schroeder *et al.* 1986; Carcello *et al.* 1992) that “team” (local office) factors are more indicative of audit quality than are “firm” factors.

Audit fees would seem to be a more precise measure of audit quality because of their continuous nature. However, fees are an inadequate measure of quality for the purpose of this study for the following reasons: First, fees are highly correlated with auditee size (Copley and Doucet 1993a) but audit quality as measured by oversight review (discussed next) is a decreasing function of size (Deis and Giroux 1992; O'Keefe and Westort 1992), confounding the clear interpretation of fees as a quality metric. Second, several prior studies (e.g., Rubin, 1988; Raman and Wilson 1992; Copley and Doucet 1993a; Ward *et al.* 1994) find a negative association between competitive bidding in the audit procurement process and fees. The comparative absence of such competition

in Florida, rather than audit quality, may constitute some of the basis for Hackenbrack *et al.*'s finding of a positive association between Florida governments and audit fees.

Other possible audit quality metrics are (1) findings from quality reviews of CPA-performed government audits conducted by oversight authorities and (2) measures of audit effort. Quality reviews evaluate the extent to which auditors complied with professional standards of fieldwork and/or reporting. Academic audit quality research has employed federal quality review data (e.g., Copley and Doucet 1993a, 1993b) and state-level quality review data (e.g., O'Keefe and Westort 1992; O'Keefe, King and Gaver 1994; Colbert and O'Keefe 1995; Deis and Giroux 1992, 1996).

Unfortunately, there is no federal quality review data suitable for the purpose of this study and various states' quality review procedures may not be comparable. We intend to draw inferences based on an interstate comparison and thus need a generalizable surrogate for quality. Hours of audit effort appears to be such a measure. Private sector audit quality research incorporating audit effort as the dependent variable has been conducted by Palmrose (1989). In the government arena, Deis and Giroux (1992) document a direct relationship between audit quality as assessed in a quality review and audit effort (hours). Audit effort thus appears to be a reasonable proxy for audit quality.

The GFOA *Audit Management Handbook* (Gauthier 1989 p.81) notes that appointment policies emphasizing auditors' qualifications "may encourage high quality audit firms to participate in the proposal process." O'Keefe, King and Gaver (1994 p.43) argue that audit quality is a function of effort and expertise: "Cost-efficient delivery of high audit quality requires greater inputs of both labor and knowledge than for low audit quality." Further, high quality auditors have incentive to perform to the full extent of their abilities to protect their reputational capital (Copley 1991; Deis and Giroux 1992). This reasoning leads to our research hypothesis:

H1: Audit effort is higher, on average, for Florida local governments than is audit effort for local governments in other states.

THE REGRESSION MODEL

It is necessary to model audit effort to test the research hypothesis (and to model audit fees to replicate Hackenbrack *et al.*'s results). O'Keefe, Simunic and Stein (1994) observe that audit effort is influenced largely by the same factors that determine fees. Other researchers have modeled both audit fees and audit hours with a common set of explanatory variables (e.g., Palmrose 1989; Deis and Giroux 1996). Accordingly, we develop a regression model primarily based upon variables identified in prior government audit fee research and apply this model to both audit effort and audit fees.

The dependent variables in our model are audit effort as measured by audit hours (logarithmically transformed LHRS) and the natural logarithm of audit fees (LAFEE). The explanatory variables control for client size and complexity, audit engagement complexity, audit firm size, effect of fee-based competition in audit procurement, auditor loss exposure, December fiscal year end, auditor tenure, audit delay (number of days elapsing from fiscal year end to date of the auditor's report), and state audit agency influences on the work of independent government auditors. The focus of the research is the categorical variable FLA, signifying a Florida jurisdiction and for which we predict positive coefficients. (Conditions denoted by the categorical variables' names are indicated by values equal to one, zero otherwise.)

Auditee size is an important determinant of audit effort and fees (Palmrose 1989; O'Keefe, Simunic, and Stein 1994). Prior government audit fee studies have employed either population or revenues to control for auditee size. Following Copley (1989) and Ward *et al.* (1994), we control for size using total reported revenues, logarithmically transformed (LTR).

Government complexity is expected to influence audit effort and fees. Rubin (1988) employed an index of government-provided services to control for engagement complexity. Ward *et al.* (1994) did so in terms of the number of financially-significant funds maintained by the municipalities in their sample. Following Johnson (1998), this study includes the number of component units comprising the government reporting entity (CU) as one measure of engagement complexity. An additional such measure is the approximate percentage that the auditor, rather than

the auditee, drafted the financial statements and notes thereto (DRAFT), for which a positive relationship with effort and fees is expected (Gauthier 1989).

As noted, Big 6 firms are hypothesized to be higher-quality audit providers and most prior studies find Big 6 audit firms to command premium government audit fees. Accordingly, we include a categorical variable (B6) indicating whether a government's auditor is a Big 6 firm.

Prior research indicates that audits for which the procurement process included competitive bids were associated with lower fees. Moreover, Copley and Doucet (1993a) find evidence that competitive bidding is positively associated with audit quality (and thus, perhaps, with audit effort). Accordingly, our model includes a categorical variable (BID) for audit engagements for which procurement included obtaining more than one fee estimate, the coefficient of which is expected to be negative.

Government fee studies typically have controlled for the auditor's loss exposure as indicated by general obligation bond ratings lower than investment grade. Bond ratings have been shown to be inversely related to audit fees (e.g., Rubin 1988). It is not clear, though, whether fee premia associated with low bond ratings is compensation for risk of loss or for incremental audit effort. Thus, we consider both ratings for existing debt and sales of new bonds in the model. We control for governments with noninvestment grade bonds with the categorical variable LOBR, identified insofar as possible by reference to a published source (Moody's Investors Service 1995). For governments for which bond ratings are not available, prior researchers have employed surrogates such as per-capita debt in excess of the sample mean (Rubin 1988; Ward *et al.* 1994). We follow a similar practice, except that the surrogate for low bond ratings is debt per capita in excess of \$1,200, as suggested by Leonard (1996). On the assumption that the sale of bonds during the year under audit poses incremental loss exposure to the auditor, the model includes a categorical variable (NEWBONDS) to control for the effect of bonds issued during the year.

Several prior studies (e.g., Rubin 1988, Copley 1989, Raman and Wilson 1992) find a positive association between audit busy season and fees. Copley *et al.* (1994) find evidence of a

negative association between the demand for audit quality and fees and suggest that higher fees might reduce the level of audit quality demanded. Thus, our model takes cognizance of potential busy season influences. In practice, most busy-season government audits represent those with December 31 fiscal year ends; we control for them with the categorical variable DYE.

The effect of auditor tenure has been tested in previous fee research on the premise that initial audit engagement fees often are “lowballed” deliberately to secure the engagement (DeAngelo 1981). Auditors then increase fees in subsequent years (a positive relationship between tenure and fees). Auditor tenure also has ramifications for audit effort. Shockley (1981) notes that longer auditor tenure should lead to efficiencies in audit conduct, that is, reduction of audit hours. Deis and Giroux (1992) and Copley and Doucet (1993b) find that audit quality declines with auditor tenure due to complacency and/or opportunism. Both positions imply a negative relationship between auditor tenure and audit hours. Accordingly, a variable controlling for auditor tenure (ATEN) appears in the model.

The model incorporates the influence of audit delay, the number of days from fiscal year end to date of the auditor's report (DELAY). Audit delay has been shown to proxy for the amount of testwork performed after year end (Ashton *et al.* 1987; Craig 1992). As such, audit delay may represent (1) auditors' emphasis on relatively time-consuming substantive tests as opposed to more efficient reliance on internal controls and/or (2) extreme cases in which the auditor must devote effort to “cleaning up” the auditee's records before conducting the audit *per se*. Alternatively, audit delay may proxy for audit quality (Brown and Margavio 1994; Johnson 1998). Both arguments imply a positive coefficient for DELAY.

Since this study involves interstate comparisons, it is advisable to control for differences in individual state audit environments that may bear on audit effort or fees. One such environmental influence is the presence of state audit agency requirements concerning the scope and nature of work performed by independent auditors of local governments. Our model accounts for the presence of

such requirements with the categorical variable SAAR. We assume that state-agency requirements add to the complexity and cost of audits, thus we anticipate positive coefficients for SAAR.

As noted, the research variable is categorical and denotes a Florida government (FLA). The regression model is thus estimated as:

LHRS, LAFEE

$$= b_0 + b_1LTR + b_2CU + b_3DRAFT + b_4B6 + b_5BID + b_6LOBR + b_7NEWBONDS + b_8DYE + b_9ATEN + b_{10}DELAY + b_{11}SAAR + b_{12}FLA + \epsilon \quad (1)$$

Table 1 summarizes the variables measured in this study and the sources of the data.

Insert table 1 here

DATA COLLECTION AND ANALYSIS

We obtained our data primarily from the fiscal 1996 Comprehensive Annual Financial Reports (CAFRs) of selected U.S. cities and counties (populations greater than 50,000) and via questionnaire. States in which the state auditor influences the scope and nature of government audits performed by independent accountants were identified by reference to *Auditing in the States: A Summary* (NASACT 1996).

Our sampling frame consisted of 335 governments from a collection of CAFRs from around the U.S. maintained at a U.S. university and 150 additional governments (100 cities and 50 counties) selected randomly from *Carroll's Municipal/County Directory* (1995), for which we obtained CAFRs. We reviewed each CAFR to determine total revenues, number of component units, identity of the auditor, fiscal year end, audit delay in days, whether the government received the GFOA Certificate for the prior year, and the names and addresses of each city's finance officer.

We sent questionnaires to each government's finance officer requesting (a) total audit fees for fiscal 1996 (b) auditor tenure as of fiscal 1996, (c) whether the audit procurement process involved competitive bids, (d) actual audit hours (if available) and (e) estimated audit hours as

included in the auditors' proposals. Actual audit hours is the preferred measure.⁴ Florida governments not legally required to follow the procedures prescribed by Florida statute Ch. 11 were requested to indicate whether they voluntarily followed these procedures.

We received 279 responses providing audit fees (57%), of which 144 include proposed audit hours; 79 provide actual audit hours. A few responses include one measure or the other. (No responses provide hours data without fee data.) The variable "hours" (HRS) is assigned the value of actual hours or proposed hours for those responses including one or the other. For responses including both measures, we use the actual value. This procedure is reasonable since actual hours are highly correlated with proposed hours (Pearson correlation coefficient = .992, $p < .001$) based on responses reporting both. The resulting 154 observations for HRS (31%) are logarithmically transformed for analysis (LHRS). The estimate of the fee model also is based on the 154 observations for which we have both hours- and fee data.

A *t*-test of total revenues indicates no difference ($t = 1.10, p = .271$) between nonresponding governments and those that returned the questionnaire with fee data. However, a *t*-test of total revenues between respondents providing only fee data with those providing both fees and hours indicates that the former are somewhat smaller than the latter in terms of revenue (means = \$254 million vs. \$351 million, $t = 2.01, p = .045$). This is consistent with Copley and Doucet's suggestion (1993b) that auditor performance (one aspect of which is audit hours) is more likely to be monitored by larger governments. Nevertheless, the smaller number of governments responding with audit hours, relative to those providing audit fees, is a limitation of this study.

Table 2 presents descriptive statistics for the sample, and shows that the mean revenue of Florida governments is slightly less than the mean revenue of governments in other states. The data represent five of the (then) Big 6 audit firms, and numerous regional and local firms. The data also represent 53 counties and 101 cities from 31 states. Florida governments number 20, and represent about 35% of Florida cities and counties with populations of 50,000 or above. Eight Florida governments were required to follow the auditor procurement procedures of Ch. 11 or did so

voluntarily. Of the Florida observations not following Ch. 11, six indicate auditor tenure of three years or less (i.e., they appointed their auditors after Ch. 473 was nullified). Twelve (eight) of the Florida governments in the sample were audited by Big 6 (nonBig 6) firms. One-hundred forty-seven (95%) of the CAFRs include a GFOA Certificate for the prior year, while none had other than an unqualified opinion on the financial statements. Thus, the CAFRs in our sample represent a high level of quality in financial reporting.

Insert table 2 here

Table 3 presents Pearson correlation coefficients among the independent variables, of which six exceed .30. Three relate directly to government size: LTR is correlated with CU (.461), B6 (.458), and NEWBONDS (.337). Similarly, CU and B6 are correlated (.313), as are CU and NEWBONDS (.323). The correlation between BID and FLA is ! .375, reflecting the comparative absence of fee-based competition in the Florida local-government audit market. The correlation between SAAR and FLA reflects the proportionately large number of Florida governments in the sample (SAAR = 1 for Florida).

Insert table 3 here

The estimated audit hours model appears in table 4. This table shows that the control variables LTR, DRAFT, and DELAY have significant coefficient estimates and the expected signs. The coefficient for SAAR is not significant, nor is the B6 coefficient. The FLA coefficient is positive and significant, providing support for the research hypothesis. The model explains just under one-half of the observed variation in audit hours (adjusted $R^2 = .470$).

Insert table 4 here

Table 5 presents the estimated audit fee model. The coefficients for LTR, DRAFT, B6, NEWBONDS, and DELAY are significant at conventional levels and have the expected signs, while the coefficient for ATEN is significant but negative, counter to expectations. The coefficient for FLA is positive and significant, consistent with the finding of Hackenbrack *et al.* The model's

adjusted $R^2 = .592$. Consistent with results reported by Palmrose (1989) and Deis and Giroux (1996), the explanatory power of our fee model exceeds that of our hours model.

Insert table 5 here

Diagnostic procedures (Wilks-Shapiro tests, White's test, and variance inflation factors, respectively) reveal no problems of nonnormal residuals, heteroscedasticity, or collinearity in the regressions presented in tables 4 and 5. Likewise, Cook's D suggests that the regression estimates are not affected by outliers. Inspection of residual plots does not suggest an omitted-variables problem; Chow tests indicate that regression coefficients do not differ between the Florida and nonFlorida subsamples for either model.

We partitioned the data between Big 6- ($n = 71$) and nonBig 6 observations ($n = 83$) to investigate whether our results are driven by either category of audit firm. Re-estimation of the hours and fee models (excluding B6) from each subsample yields the same substantive results with respect to FLA as is obtained from the full sample.

A potential threat to the validity of our findings is interstate differences in the degree to which government services are provided at the state- versus local level. Although total government spending (combined state and local) per capita is roughly constant among the states, some states are characterized by relatively more (less) spending at the state (local) level and vice-versa. Since we find that audit hours and fees both are functions of revenue to a considerable degree, we also considered whether our results are driven by the level of local government spending in Florida.

We obtained the following 1996 data for each state (U.S. Census Bureau 2000): population, aggregate state revenues, aggregate state expenditures, aggregate local revenues, and aggregate local expenditures. Among the 50 states, the Pearson correlation coefficients between (1) combined state-local revenues/combined state-local expenditures and (2) local revenues/local expenditures each equal .999 ($p < .001$). This shows that government spending is an excellent proxy for government revenues.

We next computed combined state-local revenues per capita and local revenues per capita for each state and ranked them. Florida ranks twenty-fifth in combined state-local revenues per capita and thirteenth in local revenues per capita. These ranking demonstrate that Florida is not an outlier in terms of local government spending and revenue. Moreover, within our sample, the mean revenue per capita of Florida governments is nominally less than that of governments in other states (\$1,400 vs. \$1,493, $t = 0.391$, $p = .702$). Based on the foregoing, we conclude that the high levels of audit effort and fees associated with Florida do not stem from atypically high levels of local government spending and revenue in that state.

DISCUSSION

We employ independent regression models to investigate whether (1) audit hours received, and (2) audit fees paid, by Florida local governments exceed those of other U.S. local governments. Our results are affirmative for both questions and thus suggest that, collectively, Ch. 11 and Ch. 473 have been successful in promoting the quality of local government audits in Florida, albeit at commensurately higher cost. The findings of this study thus provide empirical support for the GFOA recommendation that, to improve audit quality, local governments should appoint their independent auditors according to procedures emphasizing technical qualifications rather than fees. The observed positive relationship between audit effort and fees in Florida also is consistent with prior findings of a positive association between government audit fees and government audit quality as measured by oversight agency reviews (e.g., Copley *et al.* 1994; Deis and Giroux 1996).

The relative differences in fees and hours between Florida governments and others are captured in the coefficients for FLA. Because our models use a semi-log functional form, a *unit* change in an independent variable equates to a *percentage* change in the dependent variables, the natural logarithms of audit hours and fees. Thus, for example, the hours model regression coefficient on FLA, .558, represents a 55.8% increase in the log of hours at the intercept. However, this corresponds to a different percentage shift at the intercept for predicted, untransformed levels of fees or hours. This latter percentage is specified as $1/(1-e^z)$ (Hackenbrack *et al.* 2000), where z is the

coefficient on FLA. Applying this formula, we find that, on average, Florida government audits entail 42.8% more audit hours than do government audits in other states, for which Florida governments pay about 44.7% higher fees.

Our results replicate Hackenbrack *et al.*'s finding of elevated government audit fee levels for Florida governments and provide additional support for their assertion that Florida's local government audit market climate promotes audit quality. Our observed Florida fee premium exceeds that reported by Hackenbrack *et al.* by about eight percent. Compared with their sample, our sample (1) consists of larger governments, (2) is drawn from the U.S. as a whole, rather than from a single geographic region, and (3) has a more balanced distribution of Big 6 firms across Florida and nonFlorida observations. Hackenbrack *et al.* note that their data include proportionately more (fewer) Big 6 auditors within their Florida (nonFlorida) observations; we conjecture that a diffusion of Big 6 and Florida effects within their data may account for some of the difference in the Florida premia observed in the two studies.

Members of the Florida Auditor General's Office with whom we discussed our study suggested that the results might reflect particular diligence by their agency (compared with other state audit agencies) in performing *ex-post* reviews of audits of local governments performed by independent auditors. In response, we obtained various measures of the resources (total budget, total number of professional staff, etc.) of the 50 state audit agencies from NASACT (1996) and ranked them. The Florida Auditor General's Office is above the median in the various rankings, but is never first-ranked. Thus, it appears that, if the Florida Auditor General's Office is indeed singularly diligent in reviewing local government audits performed by independent auditors, it results from a comparatively heavy allocation of state audit resources to the oversight function. The relative apportionment of audit agency resources to independent auditor oversight among states is not available from NASACT. A question for future research is whether an association exists between the extent of state agency *ex-post* oversight of local government audits and audit effort.

The study yielded two other noteworthy findings. These are the relative audit effort and fees between Big 6 versus nonBig 6 firms, and the effect of auditor tenure on fees.

We find that Big 6 firms devote no more effort to their government clients than do other firms, counter to the widely-held view that Big 6 firms provide categorically superior audit quality. To our knowledge, this is the first study to compare a direct measure of audit effort between Big 6 and nonBig 6 firms in the government sector. Thus, it is possible that equality of effort between Big 6- and other firms in the government sector is the “state of nature.” In this regard, Copley (1991 p.263) suggests that “the (then) Big 8 firms are not the only [government] auditors providing a higher quality service.” This concept is tenable given that government audit providers have found it advisable to improve their specialized government auditing knowledge due (at least in part) to the complexities of government auditing imposed by the Single Audit Act of 1984 (Raman and Wilson 1992).

If parity in audit effort prevails between Big 6- and other audit firms, what explains the Big 6 fee premia documented in this and other studies? Possibly, perceptions of quality alone. Firth (1993) suggests that some auditees will pay higher audit fees to engage a “name brand” auditor. He studied the New Zealand experience in which local affiliates of (then) Big 8 firms, formerly required by law to use their domestic New Zealand names, were able to charge higher fees after the law was changed to allow them to practice under their Big 8 names. This was the case even though the scope and nature of the audits were unaffected by the name changes. In summary, this study provides further evidence that Big 6 firms are not the exclusive providers of high quality local government audits.⁵

We predicted a positive association between auditor tenure and audit fees according to the lowballing concept but instead found a negative relationship. A possible explanation is that increased competition in the government audit market has exerted a negative influence on fees (Sanders *et al.* 1995). Competitive pressures may thus encourage auditors to pass learning curve cost savings through to their clients, as suggested by Simunic (1980).

This study's results must be considered in light of its limitations. First, audit effort may not fully capture audit quality, as noted by Palmrose (1989). Also, the CAFRs reviewed for this study do not represent a fully random sample of U.S. local governments, both because of the convenience nature of part of the sampling frame and because conscious effort was made to ensure that Florida local governments were well represented. Third, though the overall response rate (57%) was quite good, the number of responses which included a measure of audit hours was smaller (31%). These limitations should be borne in mind in projecting the results of this study beyond the governments in the sample.

NOTES

1. A Lexus-based review of state laws addressing local government audit procurement procedures in all 50 states supports the uniqueness of the Florida laws in emphasizing technical competence in the procurement process.
2. The recent merger of Price Waterhouse with Coopers & Lybrand transformed the Big 6 accounting firms into the Big 5. During 1992, the time period represented by Hackenbrack *et al.*'s data, and 1996, the fiscal year for which we collected our data, the former Big 6 represented the largest public accounting firms. Thus, for clarity, we refer to the Big 6 throughout the paper.
3. We are grateful to David Bean of the Governmental Accounting Standards Board for pointing out the existence and nature of Florida Chapter 11 §.45.3.
4. Local government finance officers we consulted during development of the questionnaire suggested that many respondents would be unable to provide *actual* audit hours. We were advised, though, that respondents generally would be more able to provide *proposed* audit hours and that proposed audit hours would be an acceptable surrogate for actual audit hours.
5. It might be argued that a unit (hour) of Big 6 audit time is of higher quality than a unit of audit time provided by a nonBig 6 firm. In the governmental sector, at least, this argument seems questionable since, as noted, audit firms in all but the smallest-client segment of the governmental market have incentive to develop government audit expertise in response to the requirements of the Single Audit Act of 1984. Additionally, advanced technological assistance (e.g., generalized audit software) has become available to virtually all audit firms and professional employees of nonBig 6 firms often have prior Big 6 experience. Thus, in our view, the argument that a unit of Big 6 government audit time is of higher quality than a unit of nonBig 6 audit time in government audits is open to question.

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TABLE 1
Summary of Variables for a Sample of
154 U.S. Local Governments For Fiscal 1996

Variable	Name	Source
Audit hours ^a	LHRS	Questionnaire
Audit fees ^a	LAFEE	Questionnaire
Total revenue ^a	LTR	CAFR ^b
Number of component units	CU	CAFR
Extent to which auditor drafted financial statements (%)	DRAFT	Questionnaire
Auditor size (categorical = 1 if auditor is Big 6)	B6	CAFR
Audit procurement process includes competitive bidding (categorical = 1 if yes)	BID	Questionnaire
Low bond rating (categorical = 1 if yes)	LOBR	CAFR ^c
Government sold bonds during the year (categorical = 1 if yes)	NEWBONDS	Questionnaire
December 31 fiscal year end (categorical = 1 if yes)	DYE	CAFR
Auditor tenure (years)	ATEN	Questionnaire
Audit delay (days)	DELAY	CAFR
State audit agency requirements address scope and nature of audit work (categorical = 1 if yes)	SAAR	NASACT ^d
Florida government (categorical = 1 if yes)	FLA	CAFR

a Logarithmically transformed for analysis

b Obtained from review of Comprehensive Annual Financial Report (CAFR)

c Derived from information in CAFR

d Obtained from *Auditing in the States: A Summary* (NASACT 1996)

TABLE 2
Descriptive Statistics and Univariate Tests for Untransformed Variables for a Sample of
154 U.S. Local Governments for Fiscal 1996

Continuous Variables

	Florida Governments (n = 20)				Other Governments (n = 134)			
	Mean	sd	Min	Max	Mean	sd	Min	Max
Audit fees (\$ in thousands)*	147	97	50	460	82	73	12	494
Audit hours*	2,366	1,454	673	5,875	1,542	1,323	160	10,105
Total revenues (\$ in millions)	336	304	48	1,095	345	463	23	2,556
Number of component units	4.5	4.3	1	17	3.6	3.5	0	21
Extent to which auditor drafted financial statements (%)	16.5	32.6	0.0	100.0	27.8	37.9	0.0	100.0
Auditor tenure (years)	6.1	6.1	1	25	5.9	5.7	1	40
Audit delay (days)	114	35	44	162	119	33	31	270

* means are significantly different at " # .10

Categorical Variables

	Florida Governments (n=20)		Other Governments (n = 134)	
	Number	% of n	Number	% of n
Big 6 audit firm	12	60.0	59	44.0
Auditor procurement process includes obtaining bids	12	60.0	126	94.0
Government has a low bond rating	2	10.0	15	11.2
Government issued bonds during the year	10	50.0	32	23.9
December fiscal year end	0	0.0	40	29.8
State audit agency requirements address scope and nature of audit work	20	100.0	42	31.3

TABLE 3
Pearson Correlation Coefficients Among Independent Variables for a Sample of
154 U.S. Local Governments for Fiscal 1996

	LTR	CU DRAFT	B6	BID	NEW- LOBR BONDS	DYE	ATEN DELAY	SAAR			
CU	0.4607										
DRAFT	-0.2513	0.0313									
B6	0.4584	0.1999	-0.1850								
BID	0.0731	-0.0149	0.1097	0.0161							
LOBR	0.2163	0.0443	-0.0437	0.1315	0.0520						
NEWBONDS	0.3372	0.3226	-0.0149	0.1356	0.0174	0.1100					
DYE	-0.0979	-0.0701	0.0825	-0.0428	0.1046	-0.2087	-0.0967				
ATEN	-0.0490	0.0038	0.1504	0.0054	-0.2665	-0.0455	0.0702	-0.1031			
DELAY	0.1584	-0.0437	-0.0833	0.0199	-0.0395	0.0384	0.0281	0.0943	-0.0184		
SAAR	0.2182	0.0208	-0.1442	0.1970	-0.1544	0.0911	0.2108	0.0875	-0.0408	0.0976	
FLA	0.0713	0.0768	-0.1025	0.1077	-0.3749	-0.0128	0.1972	-0.2288	0.0113	-0.0424	0.4706

Coefficients in boldface are significant at $\alpha < .10$

TABLE 4
Ordinary Least Squares Regression Estimate of Audit Effort Model for a Sample of
154 U.S. Local Governments for Fiscal 1996 (Dependent Variable is the Natural Log of Audit
Hours)

Variable (name)	Expected Sign	Coefficient Estimate	Standard Error	t-statistic	p-value
Constant@	+/!	0.9778	0.6686	1.4623	0.0729
Natural logarithm of total revenue (LTR)	+	0.4339	0.0580	7.4821	<0.0001
Number of component units (CU)	+	0.0063	0.0142	0.4468	0.3278
Percentage of financial statements drafted by auditor (DRAFT)	+	0.0040	0.0012	3.1696	0.0009
Big 6 auditor (B6)	+	-0.0309	0.0991	-0.3116	0.3779
Audit procurement includes multiple fee estimates (BID)	!	0.1797	0.1640	1.0953	0.1376
Low bond rating (LOBR)	+	-0.0825	0.1465	-0.5634	0.2870
Bond issue sold during the fiscal year (NEWBONDS)	+	0.0213	0.1091	0.1951	0.4228
December fiscal year end (DYE)	+	0.0158	0.1094	0.1445	0.4426
Auditor tenure (ATEN)	!	-0.0075	0.0080	-0.9389	0.1747
Audit delay in days (DELAY)	+	0.0048	0.0013	3.5309	0.0003
State audit agency requirements address scope/nature of audit (SAAR)	+	-0.0033	0.1086	-0.0309	0.4877
Florida government (FLA)	+	0.5583	0.1667	3.3488	0.0005
Model F-statistic		12.3284			
Prob (F-statistic)		<.0001			
Adjusted R ²		.4704			

@ 2-tailed test, all others are 1-tailed

TABLE 5
Ordinary Least Squares Regression Estimate of Audit Fee Model for a Sample of
154 U.S. Local Governments for Fiscal 1996 (Dependent Variable is the Natural Log of Audit
Fees)

Variable (name)	Expected Sign	Coefficient Estimate	Standard Error	t-statistic	p-value
Constant@	+!	5.8154	0.5516	10.5424	<0.0001
Natural logarithm of total revenue (LTR)	+	0.4061	0.0478	8.4885	<0.0001
Number of component units (CU)	+	0.0034	0.0117	0.2902	0.3860
Percentage of financial statements drafted by auditor (DRAFT)	+	0.0032	0.0010	3.1440	0.0010
Big 6 auditor (B6)	+	0.2091	0.0817	2.5570	0.0058
Audit procurement includes multiple fee estimates (BID)	!	-0.1307	0.1353	-0.9655	0.1679
Low bond rating (LOBR)	+	0.1191	0.1208	0.9853	0.1630
Bond issue sold during the fiscal year (NEWBONDS)	+	0.1168	0.0900	1.2984	0.0981
December fiscal year end (DYE)	+	0.0887	0.0903	0.9825	0.1637
Auditor tenure (ATEN)	+	-0.0103	0.0066	-1.5573	0.0608
Audit delay in days (DELAY)	+	0.0022	0.0011	1.9705	0.0253
State audit agency requirements address scope/nature of audit (SAAR)	+	-0.0757	0.0896	-0.8453	0.1996
Florida government (FLA)	+	0.5928	0.1375	4.3098	<0.0001
Model F-statistic		19.5215			
Prob (F-statistic)		<.0001			
Adjusted R ²		.5922			

@ 2-tailed test, all others are 1-tailed