

Determinants of State Audit Delay: An Empirical Analysis

Mary Fischer

The University of Texas at Tyler

Treba Marsh

Stephen F. Austin State University

Prior audit delay studies concentrated on municipal government, counties and school districts. This study adds to the literature by examining the determinants of state governments' timeliness of audit reports. Audit delay determinants found by previous municipal research are used to identify characteristics that may influence state audit delay. This study's results suggest both agreement and contradiction of prior research audit delay determinants. Financial variables alone do not predict state government audit delay. However, a combination of financial and nonfinancial variables used in municipal audit delay studies do.

INTRODUCTION

GASB Concepts Statement No. 1 (GASB, 1987) identifies timeliness as one of the qualitative characteristics necessary for effective financial reporting, stating that useful information must be issued as soon as possible after the reported events to affect decisions. Timely preparation of annual financial reports is recognized as an important characteristic of financial information in governmental research (Johnson, 1998; Dwyer & Wilson, 1989; Payne & Jensen, 2002). Thus, the timing of the annual financial report (AFR) publication has been an extensive topic of government and not-for-profit reporting research (Johnson, 1998; McLelland & Giroux, 2000; Payne & Jensen, 2002; Johnson et al., 2002; Kioko, 2013; Lopez & Pitman, 2014; Lopez & Rich, 2017; Deis & Byus, 2016). These studies investigate audit delay (AD) determinants of local governments i.e., municipalities, towns, counties, or school districts but not state governments.

Only three studies investigated the timing of all types of governmental AFR audit delay including the time of states' audit delay (GASB, 2011; Merritt, 2012; Henke & Maher, 2017). The GASB report investigates financial report timeliness covering the fiscal years 2006-2008 and finds the mean number of days to issue the state AFRs was 199.12 days. The Merritt Research Services in a continuation of their longitudinal studies of 2011 AFR reports find the states were the slowest reporting credit sector with a median audit delay of 182 days or just over six months while all other governmental sectors issued AFRs in only 145 days (Merritt, 2012). Henke and Maher (2017) include states' audit delay in their study of credit market implications for government report timeliness. However, their sample only includes 34 states, just over 50 % of the total states, and found an audit delay of 197 days for the period of January 2013 thru October 2014. Wang et al. (2007) and Johnson et al. (2012) report financial conditions of state governments but the research scope was limited to financial condition. None of these studies investigate the determinants of the state audit delay.

This research explores the determinants of state governments audited financial statement issuance timeliness employing the determinants identified by prior municipality audit delay research. Unlike the Securities and Exchange Commission (SEC) (2017) that requires Form 10-K be filed in 60 days by large accelerated firms, 75 days for accelerated firms, and non-accelerated publicly traded firms to file their audited financial reports within 90 days after the end of the firm's reporting year, there is no criteria for state government to report their AFR in a timely manner other than perhaps legislative expectation.

Audit delay is measured as the time from the end of the government's financial year to the date of the auditor's opinion letter which presumes the report is available for public disclosure (Johnson, 1998; Cagle et al., 2014; Elder et al., 2015; Rich et al., 2016). Although the auditors sign the audit opinion letter, it does not necessarily mean the audit report is immediately available to the public as the legislature may take additional time to approve its dissemination.

Since 2006, the earliest year of state reporting studies, the United States experienced a major economic downturn and the Governmental Accounting Standard Board (GASB) issued over 30 extensive new accounting and reporting standards including the display of pension and benefit obligations, derivative reporting, recognition of deferred outflows and inflows of resources, lease obligations, fair value measurements and tax abatements. These new guidance items result in extensive note disclosures and AFR restatements. Although not all the new GASB guidance is immediately effective, in fiscal year 2011 municipal bond issuers' financial statement disclosures increased by 12 percent over the prior fiscal year (Merritt, 2012). The question is, have these new reporting changes enabled a greater efficiency in audit report timeliness, i.e., a decrease in the audit delay or an increase in audit delay?

The remainder of this paper is structured as follows: Section two provides the literature review of the determinants that influence audit delay in governments, while section three describes the development of the research questions and models. Section four presents the empirical results and analysis. The final section presents a summary, conclusion, and limitations together with suggestions for future research.

LITERATURE REVIEW

State financial statements contain information regarding the state's financial condition, performance, and present an accountability measure for decision makers (Taylor & Rosair, 2000). Thus, any delay in distribution of the audited financial report is important in these economic times when the financial condition and performance of the state governments regarding efficiency, effectiveness, and economic wellbeing are of concern.

In 2005, the GASB investigated the needs of governmental financial information users to determine what issues should be a part of the GASB's agenda. An overwhelming response by the respondents was financial reporting should be timelier (GASB, 2011, p 3).

The Municipal Securities Rulemaking Board (MSRB) desires municipal borrowers to have their audits available within 120 days of the close of the fiscal year. The Merritt (2012) study finds general obligation borrowers i.e., states, would find the 120-day reporting obligation a challenge as only 3.8% of all states meet the 120-day rule (p 3).

In 2010, the GASB surveyed users of governmental financial information (GASB, 2011) to identify their needs and concerns. Overall, the survey finds the usefulness of financial information to recipients diminishes with time. Some nine out of ten survey respondents find information received within 45 days to be very useful. GASB finds that relationship reduced by half when the information is received within 90 days. Subsequently, only one of nine respondents find information to be useful when received in six months which is less than the average time of financial report availability found by GASB (2011) and Henke and Maher (2017).

State government financial reporting is costly at both the judicial and legislative levels. There are significant costs incurred to develop and implement financial systems, operate data collection processes, prepare the documents, conduct an audit review and publish the financial results. Considering that timely financial reporting is costly, the state's system and activities must flow smoothly to gain efficiency. The financial statement publication depends on the audit function as the statement cannot be made public until

the auditors finish their work (Johnson, 1998). Concerning the audit activity, auditors are expected to perform attestation services without delays within the constraints imposed by auditing standards and ethics (DeAngelo, 1981).

Bamber et al. (1993) argue audit delay is one of the few variables associated with audit efficiency that can be observed. They find audit lags were positively correlated with the amount of required audit work. Bryant-Kutcher et al. (2013) research supports a greater audit effort leads to a higher audit quality. Knechel and Payne (2001) however find an association between hours worked and audit delay. While Ettredge et al. (2011) report lengthy audit efforts reflect bad news. These research efforts find a positive association between time and audit effort to complete the audit typically result in an audit effort extending beyond normal expectations. This ambiguity of results in audit completion resulted in Blankley et al. (2014; 2016) seeking to discover whether unusual audit delays were associated with audit quality measures. Their analysis finds unusual audit delay has a significant positive association with financial statement restatements.

Audit Delay Determinants

Although prior research on audit delay address primarily corporate or local governments and not state governments, it is presumed that many of the same determinants that explain corporate and local government audit delay also explains state audit delay. The discussion of determinants is presented in alpha order as there is no assumption regarding which determinants contribute more, or less, to the states' audit delay. Other determinants, however, also may explain state audit delay because states are typically much larger than most local governments excluding New York, Chicago, Los Angeles and Houston.

Audit Firm Size

Several audit delay studies find audit firm size to be positively associated with the audit timeliness. Payne and Jensen (2002) find that a larger number of employees at the audit firm performing the audit reduced the audit delay as the firm can allocate resources in such a way to expedite the audit. Payne and Jensen (2002) also report that firms with experience in governmental audits reduce audit delay. Rubin (1992) reports a significant association between decreased audit delay and the size of the audit firm. This relationship was confirmed by multiple research studies (McLelland & Giroux, 2000; Deis & Byus, 2016; Habib & Bhuiyan, 2011; Whitworth & Lambert, 2014). However, Johnson (1996) found no association between audit firm size and the audit timing. McLelland and Giroux (2000) report the longest audit delay by big firms was less than audits prepared by state auditors.

Bond Debt

According to Cohen and Leventis (2013), auditors are cautious in the presence of high debt levels that results in additional time being consumed to complete the audit. Payne and Jensen (2002) find the presence of bond indebtedness reduces the audit delay while McLelland and Giroux (2000) claim timely audit reports are critical to help governments achieve higher bond ratings. Cagle et al. (2014), however, find a greater amount of long-term debt obligation of the government entity is associated with longer audit delay (p 100). Municipal bond holders expect the audit reporting time to be just over six months which has not changed over time (Merritt, 2012).

Busy Season

The busy season defined by prior research (Dwyer & Wilson, 1989; McLelland & Giroux, 2000; Johnson et al., 2002; Payne & Jensen, 2002; Johnson, 1998; Lopez & Pitman, 2014) include the months of October through March. This period is one that finds auditors' work load expanded due to compliance with reporting period obligations. Dwyer and Wilson (1989) report audit delay is not explained by the auditor's busy season. McLelland and Giroux (2000) support Dwyer and Wilson as they find busy season has little or no effect on the audit reporting timing (p 278). Knechel and Payne (2001) on the contrary find audits performed during the external auditor's busy season increase the audit time by an average of 17 days. Payne and Jensen (2002) concur that audits performed during the auditor's busy season increase the

audit time. Additional delay is explained by Lopez and Pitman (2014) as they report the busy season enhances audit performance stress that results in a longer audit period for the client. Given prior reports of audit delay for audits performed during the busy season, there is a conceptual reason to believe that state audits performed within the traditional busy season will consume more time, producing a positive association with the audit delay.

Dependency

Patrick and Trussel (2011) find governments that receive a large amount of intergovernmental grant revenue as a percent of total revenue are in greater fiscal distress and therefore have longer audit time. The relation between intergovernmental revenues and fiscal stress is also found by Kinnersley and Shoulders (2011). McLelland and Giroux (2000) find federal grant revenue positive and significantly associated with longer audit time. Although Cohen and Leventis (2013) report a greater dependence on government grants results in a greater amount of time to perform an audit, they did not find any significance.

GFOA Certificate

An entity holding the Government Finance Officer Association (GFOA) Certificate of Excellence is assumed to have trained fiscal staff to produce quality financial reports (McLelland & Giroux, 2000). They report auditors need less time to complete the audit engagement when municipalities hold the certificate. Thus, holding the GFOA certification is also associated with audit quality according to Elder et al. (2015). Multiple other researchers also report the GFOA certificate is associated with a decrease in the audit delay (Dwyer & Wilson, 1989; Rubin, 1992; Johnson, 1996; Johnson, 1998; Johnson et al., 2002; Payne & Jensen, 2002; Rich et al., 2016).

Leverage

Leverage is defined in prior audit delay studies as debt as a percent of total assets (Payne & Jensen, 2002; Cohen & Leventis, 2013; Lockhart, 2014). Payne and Jensen (2002) report debt tends to influence a timely audit to respond to bondholders' negative perception about delays in financial reporting (p 19). Thus, a positive association between leverage and audit delay is anticipated. Cohen and Leventis (2013) find leverage a positive audit delay control variable but not significant.

Location

According to the Bureau of Economic Advisors (BEA) (2014) the gross domestic product (GDP) i.e., total value of goods and services, is not evenly distributed across the U.S (see Exhibit 1). Prior audit delay studies using national data (GASB, 2011; Merritt, 2012) and municipal studies (Johnson, 1998; McLelland & Giroux, 2000; Payne & Jensen, 2002; Rich et al., 2016) do not segregate their data by location within the US. The BEA reported GDP reflects different economic growth and cost of living such as wages, taxes (sales, property and excise) and consumer goods in different regions across the nation. State spending on goods and services differ depending on their location within the US. Most states with higher GDP percent increases are in the western half of the US. Given the GDP differences, location should have an association with audit delay which has not been considered in prior municipal audit delay research.

Mileage

Geographic distance between the client and the auditor's office was found by Choi et al. (2012) to impede audit quality and timeliness of attestation work. They report that local auditors provide higher quality audit service. However, they find auditor quality is diminished when clients have more operating and geographic segments. Lopez and Rich (2017) report auditors are more rigorous when driving longer distance which leads to an untimely audit report. Contrary to these investigations, Cagle et al. (2014) report no evidence that miles traveled increased audit timeliness although their research was limited to a single state.

Opinion

There are four types of auditor opinion: fairly presented financial statement have no auditor reservations; qualified opinions are the result of auditors finding inappropriate, undocumented or misstated financial information; adverse opinions are when the auditor finds statement not fairly presented and do not comply with accounting standards; and disclaimer when the auditors elect not to declare an opinion as they find inadequate controls, processes and procedures (Messier, 2014). Many studies (Dwyer & Wilson, 1989; Rubin, 1992; McLelland & Giroux, 2000) find no significant association between the audit opinion and audit delay. However, Payne and Jensen (2002) report a significantly increased audit delay when the government receives a qualified audit. Cagle et al. (2014) support their finding as they find entities with adverse or qualified audit opinions have a significantly increased audit delay due to the work required to complete the review.

Population

This data is reported in the government's CAFR statistical section that is subject to auditor review but is not included as part of the entity's attestation process. Citizen size has been found to relate to audit complexity and delays in audit timing (McLelland & Giroux, 2000). Rubin (1992) claims special interest groups in large cities influence officials to issue audit reports on a timely basis. Bamber et al., (1993) report a positive association between population and audit timeliness. The positive association between audit delay and population also was reported by Payne and Jensen (2002) as large governments have increased levels of financial transactions whereas smaller government do not. Elder et al. (2015) find population associated with more complexity which indicates, but not tested, an increase in audit time.

Single Audit (A-133)

Governments that receive federal grants/funding of \$500,000 or more must submit an independent audit in compliance with federal funding requirements. The threshold was increased to \$750,000 in late 2013 effective for the 2014 fiscal year following this study. Elder et al. (2015) report the single audit requirement adds to the audit timeliness by increasing the complexity of governments (p 81) which is supported by Keating et al. (2005) and Lopez et al. (2013). McLelland and Giroux (2000) report governments that include the A-133 audit with the AFR enhances complexity. They find the single audit report significantly increases the audit delay. Their finding is supported by Payne and Jensen (2002) who find that governments that are required to comply with the single audit requirements produce an untimely audit report. Cagle et al. (2014) find the single audit is positively correlated with audit delay and leads to an increased audit time. Lopez and Peters (2010) identify an association between audit firm size and A-133 internal control weakness but also an enhanced audit delay.

Other Anticipated Audit Delay Determinants

Various researchers identified items, transactions, and financial statement balances that impede the auditors' work. For example, a negative available fund balance referred to the net change in net position was identified by Kinnersley and Shoulders (2011) as a signal of fiscal stress that reduces the state's flexibility to continue essential services which results in an impediment to audit timeliness.

Kioko (2013) and Chaney et al. (2002) find the ratio of unrestricted net position value to total expenditures is a measure of the government's ability to maintain the provision of basic government services. As this ratio decreases, the government experiences increased stress and complexity which results in an increased time to complete the audit work.

Trussel and Patrick (2009) and Johnson et al. (2002) report the available net position are a surrogate for complexity and fiscal stress. The complexity and stress increase as the net position decreases, thus the government has less resources available for new programs or support future budget needs. As indicated earlier, increases in complexity and fiscal stress should relate to an increase in audit delay.

The introduction of new accounting standards and guidance results in a fundamental change to financial reporting. Changes in accounting standards, correcting accounting errors, and estimate changes have a profound impact on audit risk as auditors use them as the basis for evaluating accounting

information quality (Newman et al., 2005). Auditing new accounting recognition and reporting requirements should be a challenge due to additional audit work needed to produce an appropriate audit opinion. Over the past decade, state and local governments have implemented an average of three new GASB accounting standards each year with early adoptions encouraged (DeViney, 2017). A review by an external audit firm provides a retrospective evaluation of the generally accepted accounting principles (GAAP) implementation which affirms the adoption processes and advises correcting errors, if necessary, in the AFR (Baber et al., 2013). Although accounting standards and accounting changes as related to audit report lag has not been investigated in the US, Habib (2015) finds new accounting standards significantly increase audit delay in China. He reports other international studies of audit delay have included explanatory variables relating to corporate governance, CEO duality, board independence but not the impact of new accounting standards,

Given the many determinants of audit delay found in prior studies of municipal government annual financial reporting, the following research questions (RQ) are presented:

RQ 1: Are a combination of financial and nonfinancial determinants to municipal audit delay associated with state government audit delay?

RQ 2: Are financial determinants to municipal audit delay associated with state government audit delay?

RQ 3: Are nonfinancial determinants to municipal audit delay associated with state government audit delay?

Financial determinate variables (N = 6) are identified and defined in Table 1 as are nonfinancial determinants (N = 9). The combined model employed for this study incorporates 15 independent variables (see Table 1) with estimated associations. Eleven of the variables are identified and discussed in the literature review. Four variables discussed in anticipated audit delay impediments (CHANGES, NPBAL, NPCHANGE and OPRES) are supported by prior studies of auditor impediments and entity complexity. The impediments are expected to exhibit a strong relationship with audit delay.

Table 1 summarizes the variables used in this study together with their expected analysis sign. The variables presented in Table 1 are by categories including (1) the dependent variable, (2) independent variables that contain financial information, and (3) categorical (dichotomous) and numerical variables that contain nonfinancial information.

TABLE 1
VARIABLES DESCRIPTION

Dependent Variable		
ADELAY		Number of days between state fiscal year end and date of auditor opinion letter
Financial Variables	Expected Sign	
LEVERAGE	+	Total debt as a percent of total assets
GRANTDEP	+	Grant revenue as percent of total revenue
OPRES	-/+	Net position balance as percent of total expenses
NPCHANGE	+	Fiscal year change in net position
NPBAL	+	Net position balance
GODEBT	+	Amount of general obligation bond debt
Nonfinancial Variables	Expected Sign	
GFOA	-	Dichotomous variable coded 1 if state received certification, 0 otherwise
OPINION	+	Dichotomous variable coded 1 if state received a fairly presented opinion, 0 otherwise
SAUDIT	-	Dichotomous variable coded 1 if state included the A-133 audit as part of the AFR, 0 otherwise
BUSY	+	Dichotomous variable coded 1 if the audit was performed during Oct. to March period, 0 otherwise
FIRMSIZE	+	Variable coded 5 if firm revenue exceeded \$1B, 4 if firm revenue less than \$1B but greater than \$100M, 3 if firm revenue less than \$100M but greater than \$50M, 2 if firm revenue less than \$50M but greater than 25M, 1 if firm not listed among the Accounting Today 2014 top 100 firms, 0 if state or legislative auditor.
CHANGES	-/+	Number different accounting change types reported i.e., new GAAP, errors, reclasses, etc.
MILEAGE	-/+	Distance between auditor and client in miles
POP	+	Log of the state's 2013 population
LOCATION	-/+	Dichotomous variable coded 1 if state located in Bureau of Economic Affairs (BEA) far west region, 2 if located in the rock mountain region, 3 if located in southwest region, 4, if located in plains region, 5 if located in great lakes region, 6 if located in southeast region, 7 if located in the Mideast region, and 8 if located in New England.

Both financial and nonfinancial variables defined in Table 1 are used to test RQ 1 in an OLS regression analysis. Only the financial variables defined in Table 1 are used to test RQ 2 in an OLS regression model. While the nonfinancial variables defined in Table 1 are used to test RQ 3 in an OLS regression model.

SAMPLE AND RESEARCH METHOD

Sample and Data Collection

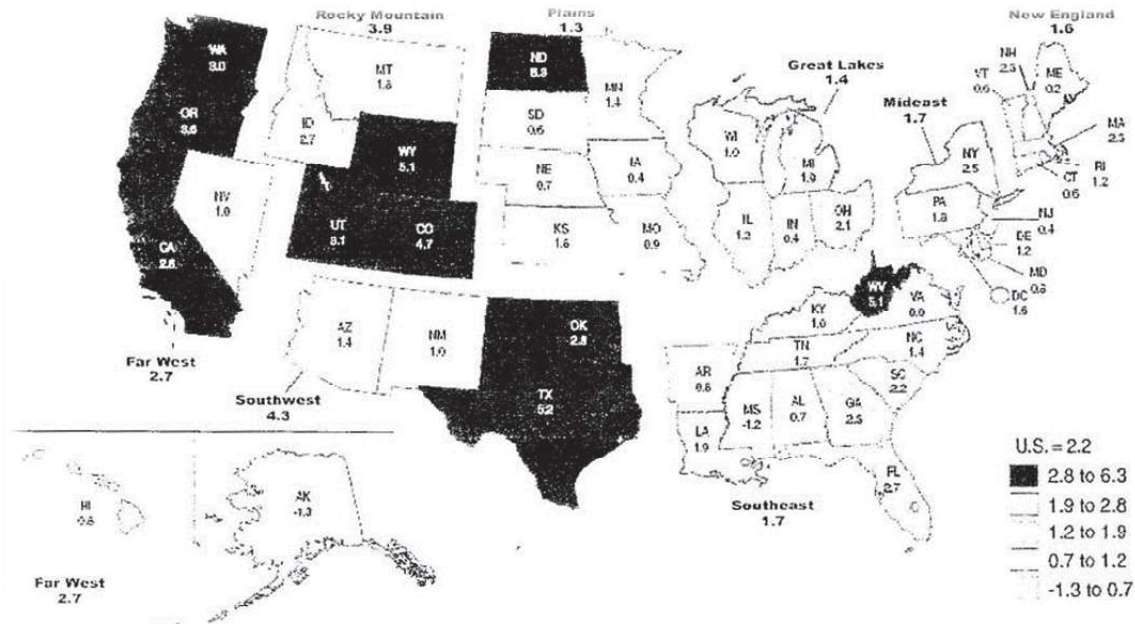
The 2013 AFR for each of the 50 states in the US was downloaded from the internet. Information from the AFR is used to augment financial information obtained from the GFOA data base containing the analysis of the 2013 AFRs for those governments applying for the Certificate of Excellence. The sample corresponds to 100% of the state government population.

Information was gathered from the state's financial reports to collect additional research variables for this study. The amount of the net position balance (NPBAL) and the general obligation debt (GODEBT) were retrieved from the statement of net position. Also, from the statement of net position, the amount of the total liabilities was divided by the amount of the total assets to calculate LEVERAGE represented as a percent. The intergovernmental grant revenue was divided by the total revenue reported in the statement of activities to produce a percent of total revenue dependent on intergovernmental grants (GRANTDEP). The statement of activity reported on the amount of the change in net position, net revenue, or net deficit for the fiscal year (NPCHANGE) and the total of the net position (NPBAL) available for the future year budget or new projects. When the financial statement was a comprehensive annual financial report (CAFR), the state's population (POP) reported in the statistical section was collected. When the state reported only an AFR, the state's 2013 population was retrieved from Google.

The audit opinion letter, a part of the AFR, provided the auditor's opinion identified as OPINION, whether the A-133 audit (SAUDIT) was part of the AFR, and what number of new accounting standards and/or accounting changes (CHANGES) implemented. MILEAGE between the auditor's headquarters shown on the auditor's letter and the client i.e., the state office address was determined by Google searches of the distance between addresses.

The Accounting Today's (2014) list of top 100 firms in the US was stratified into five categories based on firm revenue to determine FIRMSIZE that includes all Big 4 audit firms and numerous regional firms. Thirty-seven states used state auditors or legislative agencies for their audit engagement. The BEA state categories reporting GDP statistics and changes of the states GDP (Exhibit 1) is used to determine LOCATION used in the study.

EXHIBIT 1
BEA GROSS NATIONAL PRODUCT (GDP) ACROSS STATES IN 2014 BY AREA



(Bureau of Economic Advisors, 2014)

An amalgamation of prior audit delay studies identified the audit busy season (BUSY) period as October thru March (Payne & Jenson, 1992; Johnson, 1998; Johnson et al., 2002; Lopez & Pitman, 2014). State fiscal end of year data in this study included March 31 (N=1), June 30 (N=46), August 31 (N=1), and September 30 (N=2). Thus, 98 percent of the audits in this study fall within the audit busy season.

Research Model

The strength of the association between the dependent variable ADELAY, audit delay, and the combined independent variables is determined by the following linear regression model to test RQ 1.

$$\begin{aligned}
 & \text{ADELAY} \\
 & = B_0 + B_1(\text{LOCATION}) + B_2(\text{GFOA}) + B_3(\text{FIRMSIZE}) + B_4(\text{SAUDIT}) + B_5(\text{OPINION}) + \\
 & B_6(\text{BUSY}) + B_7(\text{LEVERAGE}) + B_8(\text{GRANTDEP}) + B_{10}(\text{OPRES}) + B_{12}(\text{NPCHANGE}) + \\
 & B_{13}(\text{NPBAL}) + B_{14}(\text{MILEAGE}) + B_{15}(\text{CHANGES}) + B_{16}(\text{GODEBT}) + B_{16}(\text{POP}) + E
 \end{aligned}$$

ADELAY is the total number of days from the end of the fiscal year to the date of the auditor’s opinion letter included in the AFR. Each of the independent variables is defined in Table 1. The model includes control variables for size, liquidity and leverage as suggested in the literature. Sized is measured by population (POP). McLelland and Giroux (2000) reported population related to audit complexity thus increasing the audit delay. Payne and Jensen (2002) also reported the positive association of population and audit timing. Elder et al. (2015) found population related to complexity. Although the positive relation between entity size and auditing timing has been found, a negative relation could well be the results of the entity reporting good news or an efficient financial reporting model (Cohen & Leventis, 2013).

TABLE 2
DESCRIPTIVE STATISTICS

Variable	Mean	St. D.	Median	Minimum	Maximum
Audit Delay (Dep variable)	187.34	45.34	175.00	82.00	364.00
Leverage (%)	40.11	37.88	27.67	0.03	182.62
Grant % of revenue	35.2	7.6	35.58	16.5	52.6
Net position % of total expense	-1.25	51.26	-6.20	-95.83	253.53
Change in net position \$ in thousands	\$1,553	\$2,391	\$913	-\$1,137	\$10,352
Net position value \$ in thousands	\$2,865	\$6,072	\$1,469	\$0	\$41,569
Mileage: auditor to client number	18.4	76.0	0.9	0.0	530.0
Gen Obl debt \$ in thousands	\$9,150	\$23,124	\$2,954	\$136	\$144,446
Population number in millions	6.33	7.07	4.52	0.58	38.43
Accounting changes number of types	2.9	1.0	3.0	1.0	5.0
Categorical Variables	No	Yes	Mean	St. D.	MinMMM
GFOA certificate	7	43	.86	.351	
Single Audit included with AFR	14	36	.72	.454	
Audit opinion	3	47	.06	.240	
Busy season	1	49	.96	.198	
Location in U.S. see Exhibit 1	Count	Value	4.76	2.252	
Far West	6	1			
Rocky mountain	5	2			
Southwest	4	3			
Plains	5	4			
Great Lakes	7	5			
Southeast	11	6			
Mideast	6	7			
New England	6	8			
Audit Firm Size per Acct. Today	Count	Value	1.06	1.900	
Very large firm	7	5			
Medium large firm	2	4			
Medium sized firm	2	3			
Modest sized firm	2	2			
Not among Acct. Today firms	0	1			
State auditor	37	0			

Liquidity is measured by the value of operating reserves (NPBAL) which is comparable to a corporation's retained earnings balance. The balance is resources available to the state for future budgets, new programs and expansion of current activities. The net position as a percent of expenses (OPRES) is another liquidity measure. This ratio indicates the balance available for operating expenses. Johnson et al. (2002) report operating reserves decrease complexity, stress and audit timing. The net position balance as

a percent of the total expenses (OPRES) is a liquidity measure reported by Trussel and Patrick (2013) as a measure to reduce governmental fiscal distress. As surplus funds accumulate, the audit timing should decrease as auditors are reviewing fewer deficit producing processes. LEVERAGE, measured as a ratio of total debt to total assets, has been suggested to increase audit delay (Johnson 2006). Auditors tend to be cautious with their work commitments when the debt level increases which results in increased audit timing.

Table 2 contains the descriptive values for each of the variables presented in Table 1. Calculated descriptive statistics are presented. Distribution values of categorical variables are presented with the Mean, and Standard Deviation.

Table 3 presents the Pearson correlation matrix for all variables in this study. None of the correlations were .70 or greater satisfying Hair et al.'s (2010) recommended limit. Only two correlations were above .60 but neither resulted in a multicollinearity issue as all VIFs values were less than the Hair et al. (2010) suggested value of 4. Correlations with a significance of $\alpha=.05$ or less using a 1-tail test are displayed as a bold number.

TABLE 3
PEARSON CORRELATIONS

	ADELAY	LOCATION	GFOA	FIRMSIZE	SAUDIT	OPINION	BUSY	LEVERAGE
LOCATION	-.090							
GFOA	-.493	.064						
FIRMSIZE	.151	.223	.013					
SAUDIT	-.233	-.002	.134	-.122				
OPINION	.420	-.202	-.626	.037	-.218			
BUSY	-.239	-.020	.212	-.373	.327	-.378		
LEVERAGE	.213	.309	.063	.141	-.039	-.162	-.002	
GRANTDEP	-.046	.157	-.068	-.245	.060	.183	-.029	-.280
OPRES	-.170	-.429	.033	-.073	.068	.057	.017	-.634
NPCHANGE	.152	-.307	-.012	-.324	.010	-.093	.130	-.030
NPBAL	.107	-.036	.041	-.104	.027	-.068	-.040	.353
MILEAGE	.175	.104	-.005	.341	-.202	.012	-.039	-.085
CHANGES	.091	-.163	-.024	-.412	.050	.097	.087	-.106
GODEBT	.347	-.257	.028	-.132	.148	-.110	.072	.311
POP	.103	-.054	.068	-.170	-.025	-.119	-.133	.279

**TABLE 3
PEARSON CORRELATION (CONTINUED)**

LOCATION							
GFOA							
FIRMSIZE							
SAUDIT							
OPINION							
BUSY							
LEVERAGE							
GRANTDEP							
OPRES	-.261						
NPCHANGE	-.167	.196					
NPBAL	-.157	-.092	.099				
MILEAGE	.021	.000	-.050	-.049			
CHANGES	.230	.060	.298	.037	-.048		
GODEBT	-.239	-.256	.523	.154	-.078	.306	
POP	.031	-.312	.604	.253	-.078	.239	.650

RESULTS AND ANALYSIS

The 2013 state governments’ mean audit delay of 187.34 days (see Table 2) is less than the 199.2 days found by GASB (2011) for state governments during the years 2006 to 2008, and the 197.5 days Henke and Maher (2017) found for the period from January 2013 to October 2014 for the 34 states in their study but marginally higher than the 182 audit delay days found by Merritt Research (2012) for state governments in fiscal year 2011. The expanded accounting complexity and reporting demanded by implementing new accounting standards would predict an increase in audit time. The state governments’ mean audit delay is greater than local government audit delays found in early studies that ranged from 100 and more as displayed by Table 4.

**TABLE 4
PRIOR LOCAL GOVERNMENT RESEARCH AUDIT DELAY**

Prior Study	Audit Delay in days
Dwyer and Wilson (1989)	107
Johnson (1996)	115
Johnson (1998)	121
McLelland and Giroux (2000)	125
Johnson et al. (2002)	122
Payne and Jensen (2002)	100
GASB (2011)	182

This study’s finding of 187.34 for state governments is less than recent local government studies of Cagle et al. (2014) 399.66 day, and Rick et al. (2016) 232 days. The change in local government audit

timeliness reflects the increased burden of new audit requirements, internal controls and the continuing financial pressures of the economic downturn recovery.

Financial variables found to be significant predictors of state government audit delay in the combined analysis with a positive association include: operating surplus (NPCHANGE - measured by positive increase in the net position for the current year); accumulated available resources (NPBAL - net position balance); available grant resources (GRANTDEP - grant revenue as a percent of the total revenue); and general obligation bond debt (GOBOND - amount of general obligation bond debt).

Nonfinancial variables found to be significant predictors of state government audit delay in the combined analysis with a negative association include: size (POP – log of population); audit performed during the busy season (BUSY); single audit included in the AFR report (SAUDIT); accounting and other changes reported in the AFR (CHANGES); and high quality financial reporting (GFOA - receiving a GFOA award). The LOCATION of the state in the US is also a significant predictor but has a positive association with audit timeliness.

Model 1

Table 5 presents the results of the OLS regression analysis Model 1 using audit delay as the dependent variable and the combination of all independent variables to test RQ 1.

Multicollinearity checks were conducted on the regression. Variance inflation factors (VIF) are less than 4 and, thus, insignificant for the regression. Tests for outliers was conducted on the regression. Studentized residuals are computed and any observation more than two standard deviations from the mean was deleted. Results (not reported) do not change qualitatively when outliers are removed. Thus, the OLS results for Model 1 appear to be robust.

RQ 1 is affirmative supported by the significant regression results of .000 that finds the variables in Model 1 predict 76.7 percent of the population. States have long audit report times due to their size i.e., population, the complexity (GRANTDEP and GODEBT) , large number of accounting transactions (NPCHANGE and NPBAL) , and amount of audit work that impact the audit activity. This is reinforced by the coefficients of the financial variables in the model.

States in this study all reported positive net position balances (NPBAL) as well as surplus operating results for the reporting period (NPCHANGE). However, several states in the study reported a negative relationship of the net position balance to the total expenses. The grant deficiency of the state is positively related to audit timeliness as the greater the amount of intergovernmental grants received by the state is associated with a longer audit time. The same relation is true for general obligation debt. The greater the amount of general obligation debt owed by the state, the greater amount of audit time the auditors expand with the accounting and reporting of the debt to be satisfied with their audit effort.

The nonfinancial variables in the analysis had an inverse relationship with the audit timing. The receipt of the GFOA award is evidence of high-quality financial reporting measured by an external organization which reduces the audit work and therefore timing. Performing the audit during busy season allows the auditors to concentrate their efforts and assignments to reduce the audit timing. Including single audit work with the AFR audit allows the auditor to maximize their efforts thereby reducing the audit timing.

The negative association of population to audit timing is unexpected because it would be expected that as the population increases so would the complexity of the audit engagement which would extend the audit timing. However, this study found just the reverse perhaps due to economy of scale. Location within the US is another unusual finding. This could be explained by the increased GDP of the Western states that may have enhanced the accounting and reporting complexity therefore expanding the audit work and timing.

Overall, these results help to explain factors that influence audit timing for state governments.

TABLE 5
REGRESSION ANALYSIS: MODEL 1 ALL VARIABLES

	Coefficients	t	Sig.
(Constant)		4.599	.000
LOCATION	.277	2.563	.017
GFOA	-.185	-1.762	.091
AUDITFRIM	.167	1.518	.142
SAUDIT	-.311	-3.383	.002
OPINION	.125	1.090	.286
BUSY	-.432	-3.780	.001
LEVERAGE	.230	1.689	.104
GRANTDEP	.656	4.817	.000
OPRES	-.081	-.517	.610
NPCHANGE	1.094	5.978	.000
NPBAL	.313	3.338	.003
MILEAGE	.040	.449	.658
CHANGES	-.213	-2.140	.043
GODEBT	1.476	7.873	.000
POP	-1.904	-7.424	.000
adj R ²	0.767		
F	9.558		
Significance	0.000		

Model 2

Table 6 presents the results of the OLS regression analysis Model 2 using audit delay as the dependent variable and the financial independent variables to test RQ 2.

Multicollinearity checks find a VIF values greater than 4 but less than 5 for both the net position balance and the general obligations debt. The correlation analysis of the financial variable finds GRANTDEP negatively related to all the other financial variables. The correlation analysis also finds GODEGT significantly correlated to all other financial variables but with a negative relationship to GRANTDEP and OPRES, Neither the model nor any of the financial variables are significant. Thus, Model 2 of only the financial variables is found to not be a predictor of audit delay.

TABLE 6
REGRESSION ANALYSIS MODEL 2
FINANCIAL INDEPENDENT VARIABLES

	Coefficient		
	Beta	t	Sig.
(Constant)		2.650	.012
LEVERAGE	.196	.600	.552
GRANTDEP	.098	.438	.664
OPRES	.040	.140	.889
NPCHANGE	-.022	-.104	.918
NPBAL	.080	.173	.864
GODEBT	.395	.970	.339
Adj R ²	-.018		
F	.882		
Significance	.519		

Model 3

Table 7 presents the results of the OLS regression analysis Model 3 using audit delay as the dependent variable and the nonfinancial independent variables to test RQ 3.

TABLE 7
REGRESSION ANALYSIS MODEL 3
NONFINANCIAL INDEPENDENT VARIABLES

	Coefficient		
	Beta	T	Sig.
(Constant)		4.242	0.000
GFOA	-0.397	-2.424	0.020
OPINION	0.140	0.768	0.447
SAUDIT	-0.117	-0.842	0.405
BUSY	0.025	0.156	0.877
AUDITFIRM	0.186	1.183	0.244
CHANGES	0.110	0.760	0.452
MILEAGE	0.163	1.245	0.220
POP	0.160	1.156	0.254
LOCATION	-0.064	-0.478	0.635
Adj R ²	0.213		
F	2.476		
Significance	0.024		

The variables in the Model 3 OLS regression analysis of the nonfinancial variables have no VIF value greater than 2. Thus, the OLS results for Model 3 appear to be robust with regards to the lack of multicollinearity.

The OLS for Model 3 is marginally significant at .024 and explains 21.3 percent of the population. However, the only significant variable is GFOA at .020 that provides evidence of high-quality financial reporting. It is interesting to note that the sign of the nonfinancial variables (BUSY, CHANGES, POPULATION and LOCATION) in Model 3 are the reverse of their sign in Model 1. The RQ for Model 3 using the nonfinancial variables is affirmative as supported by the statistical results but explains a far smaller portion of the study's population than Model 1.

Sensitivity Tests

Sensitivity tests are run to ensure that robustness of the main findings. In municipality audit delay studies, the size variable used in the analysis was total assets, total expenses or total revenue rather than the population log used in this analysis (Johnson, 1998; McLelland & Giroux, 2000; Payne & Jensen, 2002; Kinnersley & Shoulders, 2011; Cohen & Leventis, 2013). Separate OLS analysis were run using the different size variable rather the POP. The results are qualitatively similar to those shown in Table 5 but do not enhance the R² value predictability.

Limitations

There are some limitations in the analysis in this study. First, the sample consists solely of state governments. Given the complexity of these entities and their size, the study's findings may not generalize to other types of governments or governmental not-for-profit organizations. Another limitation is most of the state audits are performed by state auditors (37) who in addition to being concerned about GAAP reporting may be swayed by state compliance criteria. A different auditor mix might result in different evaluations and a different set of audit findings. Finally, while the regression models are designed to predict audit timeliness, unaccounted variations could arise from auditor differences and conclusions of the internal control systems of the states.

A final set of limitation such as economy-wide data might be different during another time other than 2013. For example, financial data can be influenced by inflation, collective bargaining, or other cost enhancement or diminishing influences. These changes can have a negative or positive impact on the time auditors need to complete their audit of the state government.

SUMMARY AND CONCLUSION

This study's findings provide insight regarding the determinants of state government audit delay. If issuing a timely financial report is important to the state considering bond ratings and other financial measurements, decision makers should give thought to the audit delay determinants found in this investigation. Management incentives impacting the delay including general obligation debt, and grant dependency that significantly predict audit delay should be of major concern. Given the study includes the analysis of all states, the results should be generalizable across all states but not necessarily to all forms of governmental organizations.

State governments are more complex with more accounts and funds to audit which causes an extension to the audit timing. They also have complex financial statements that report extensive financial actions including new GASB reporting standards, reporting errors, and financial statement adjustments at a higher rate than municipalities and other government organizations (Jessup et al. 2017). Results indicate that states with large general obligation debt balances, positive operating results, and net position balances together with a large percentage of their revenues represented by intergovernmental grants are more likely to experience audit delays. Audit delay is significantly related to several determinants including population, audits performed during the auditor's busy season, and the requirement to comply with the Single Audit Act.

Overall, this study contributes to the literature in two primary ways. First, it extends governmental audit delay research by focusing solely on state government organizations. Second, the study contributes to an understanding of the association of audit timeliness in a market that is not dominated by the Private Big 4 firms and requires an extensive industry specialization of the recognition and reporting criteria for state financial reporting. Future studies could investigate whether differences exist between state auditors and Big 4 auditors concerning audit delay determinants. Although data would be limited, the investigation might also include municipal governments as this study found state audit delay determinants comparable to prior studies using only municipality entity data. Suggestions for future studies also apply to studies of counties, school districts, and special districts where similar reporting criteria and size-related issues may exist.

States in this study all reported positive net position balances (NPBAL) as well as surplus operating results for the reporting period (NPCHANGE). However, when GASB Standards and amendments that require the recognition of pension and other post retirement obligations (OPEB) as liabilities in the statement of net position, the net position annual changes and total net position balance may become a negative value. Future research should ascertain what impact this new liability recognition has on audit delay, if any.

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