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Public vs. Private Auditors Big vs. Little Issuers: What's Influencing the Timeliness of Municipal Bond Audits

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POLICY BITE

- The median audit time for all sectors has increased nearly 13% over time from 147 days in 2010 to 166 days in 2021, worsening the median audit time by 19 days, with issuers in the governmental bond sectors having generally slower median audit times compared to issuers in the revenue bond sectors.
- All the top performers highlighted in this report (except for the states and territories) finished their audits in 90 days or faster, providing exemplary best practice models for timely reporting among municipal bond issuers.
- The firm KPMG LLP is a standout with the most creditors—five in total—listed in the top three among revenue bond issuers, while the Tennessee Comptroller of the Treasury stands out among governmental bond issuers by having two of the top three fastest audit times among all counties.
- There is a direct correlation between audit timeliness and jurisdiction size and/or indebtedness for roughly half of the municipal bond sectors, with larger and more indebted issuers generally producing faster audits.
- There is a systematic difference in audit timeliness between municipal bond issuers using auditors from the private sector and those using the state, legislative, or other public sector auditors for 8 of 12 sectors, with public sector auditors having slower audit times.



RESEARCH BRIEF

Introduction

Interest groups ranging from bond investors to government watchdogs to regulators have regularly called for faster audit times from municipal bond issuers. Timely audit reporting is essential for credit evaluation and proper pricing in the municipal bond market and is an important indicator of good governance and stewardship. However, according to an article published in *The Bond Buyer* in March 2023¹, [S&P Global Ratings](#) issued warnings to 149 municipal bond issuers by placing them on CreditWatch with negative implications because they had not received their 2021 financial statements. While staffing shortages and an insufficient number of auditors might be to blame, the problem is often exacerbated in states with requirements for state auditors to sign off on local governments' audited financial documents.

Corporate bond issuers have median audit times averaging 60 to 90 days (as regulated by the U.S. Securities and Exchange Commission by corporation size) between fiscal year-end and the date of the Independent Auditor's signature. By contrast, municipal bond issuers normally take two to three times longer—140 to 160 days—to complete their audits. The issue of audit timeliness has received more attention recently, as the state of California—a

large and high profile municipal bond issuer—was singled out for its tardiness, although it was not put on negative watch for being late on its 2021 audit. California's 2021 state audit was signed on March 23, 2023—631 days after the end of its 2021 fiscal year.

In the interest of recognizing and encouraging timely transparency, [Merritt Research Services, an Investortools Company](#) has been tracking and reporting on the time it takes for municipal bond-related audits to be completed and signed after the fiscal year ends since 2007. Last year, Merritt Research Services partnered with the [Government Finance Research Center](#) at the University of Illinois Chicago to continue providing this important annual reporting and analysis.

In this year's report, we first offer an overview of audit time trends since 2010. We then recognize the timeliest audits for the 2021 fiscal year, grouped by municipal credit sector, from more than 10,000 municipal bond audits in the Merritt Research Services database found in [CreditScope](#). Finally, we conduct correlational analysis and difference of means testing to examine some potential reasons for variation in audit timing in an effort to develop solutions for improvement where it might be needed.



¹ Webster, K. (2023, March 14). S&P tells 149 issuers: Provide timely financials or risk withdrawn ratings. *The Bond Buyer*. <https://www.bondbuyer.com/news/s-p-tells-149-issuers-provide-timely-financials-or-risk-withdrawn-ratings>

By the Numbers Historical Trends

Revenue Bond Sectors

Table 1 shows the median audit times (in days) of select municipal revenue bond sectors compared to all municipal bond sectors (including both revenue and governmental bonds in the last column) for each year 2010–2021, with these historical trends also illustrated in Figures 1 and 2. For purposes of this analysis, we define audit time as the number of days stretching from the end of the fiscal year to the date of audit signing, regardless of its posting date in the Electronic Municipal Market Access (EMMA), which is the endpoint used by the Municipal Securities Rulemaking Board (MSRB) for their audit time calculations. In addition, we exclude from our analysis all municipal bond issuers with financial statements that do not comply with Generally Accepted Accounting Principles (GAAP). It should be noted that the number of issuers with audited financial statements submitted to the Merritt Research Services database varies from year to year.

According to Table 1, the median audit time for all sectors has increased nearly 13% over time from 147 days in 2010 to 166 days in 2021, worsening the median audit time by 19 days. During this time, there was an increase in the median audit times for issuers in every

municipal revenue bond sector. Figure 1 shows that municipal revenue bond issuers in the health and higher education sectors generally maintain faster audit times than all sectors (including both revenue and governmental bonds) represented by the bolder black line, with median audit times ranging from the slowest of 162 days in the community colleges sector in 2020 to the fastest of 110 days in the hospitals and healthcare systems sector for each year 2010–2012.

Figure 2 tells a slightly different story about municipal revenue bond issuers in the transportation and utility sectors. Issuers in the retail electric, toll roads, and wholesale electric sectors maintain median audit times that are considerably faster than all sectors (including both revenue and governmental bonds) represented by the bolder black line, whereas issuers in the water and sewer sector are generally slower compared to all other sectors. Among issuers in these sectors, median audit times ranged from the slowest of 167 days for the water and sewer sector in both years 2020 and 2021 to the fastest of 94 days in the wholesale electric sector in years 2010 and 2019.



Table 1. Median Audit Times (in Days) by Municipal Revenue Bond Sectors, 2010–2021

Years	Hospitals & Healthcare Systems	Community Colleges	Private Higher Education	Public Higher Education	Airports	Retail Electric	Toll Roads	Water & Sewer	Wholesale Electric	All Sectors
2010	110	138	112	142	147	137	119	155	94	147
2011	110	138	112	132	151	139	125	158	107	152
2012	110	138	113	138	150	142	123	153	100	150
2013	112	144	114	137	150	140	123	155	102	150
2014	112	140	114	130	144	139	123	154	100	148
2015	112	146	115	148	160	147	128	161	105	156
2016	111	141	116	145	154	145	125	161	101	154
2017	111	143	115	137	155	145	120	163	98	154
2018	114	149	116	142	158	150	123	164	100	159
2019	115	149	118	142	158	149	121	165	94	158
2020	118	162	121	148	162	152	122	167	97	167
2021	118	160	121	154	163	146	126	167	105	166

Notes: The number of issuers (and commensurately the number of audits) varies from year to year. Median audit times for 2021 reflect 5,833 municipal revenue bond issuers across the individual sectors shown out of 16,713 total revenue and governmental bond issuers across all sectors (shown in the last column).

Source: Merritt Research Services, an Investortools Company. Data compiled and reported from annual comprehensive audited financial reports available on February 24, 2023.

Looking at all sectors together (Table 1), community colleges increased their median audit time the most—by nearly 16% or 22 days—between 2010 and 2021. However, community colleges, which represent 5.5% of all revenue bond issuers in our sample, were one of only two sectors that improved their audit times between 2020 and 2021, with the sector’s median audit time reduced by 2 days in just one year. Following community colleges, issuers in the wholesale electric sector increased their median audit time by nearly 12% or 11 days between 2010 and 2021. Contrary to community colleges, however, this sector comprising 3.1% of all

revenue bond issuers in our sample worsened their median audit time the most from 2020 to 2021, with an increase of 8 days or a little over 8% in just one year. These negative trends in timeliness for the wholesale electric sector are concerning because this sector has generally maintained the speediest median audit times among issuers in the municipal revenue bond sectors. Rounding out the three largest slowdowns among revenue bond issuers is the airport sector, which increased its median audit time between 2010 and 2021 by nearly 11% or 16 days but remained relatively constant between 2020 and 2021 with an increase in their median audit time of only one day.



Figure 1. Median Audit Times (in Days) by Municipal Revenue Bond Health & Higher Education Sectors, 2010–2021

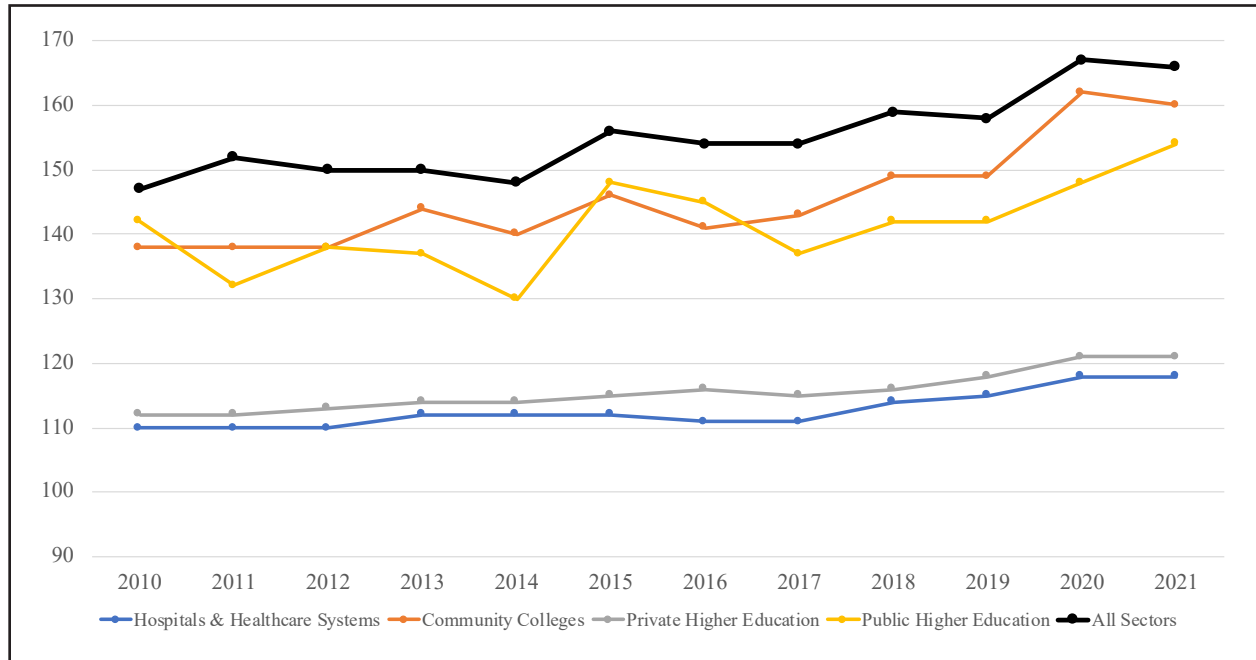
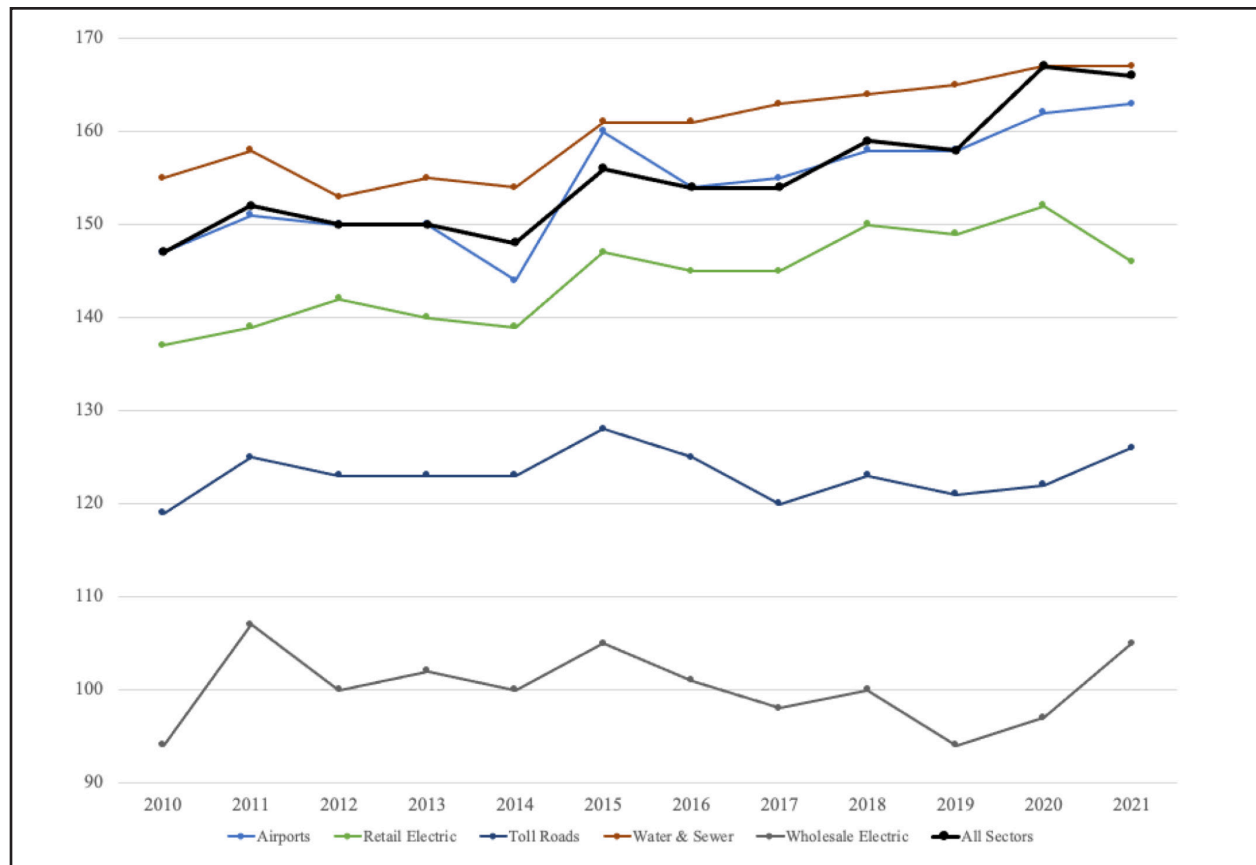


Figure 2. Median Audit Times (in Days) by Municipal Revenue Bond Transportation and Utility Sectors, 2010–2021



Governmental Bond Sectors

Table 2 shows the median audit times (in days) of each municipal governmental bond sector compared to all municipal bond sectors (including both revenue and governmental bonds in the last column) for each year 2010–2021, with the historical trends illustrated in Figure 3.

As a departure from issuers in the revenue bond sectors, issuers in the governmental bond sectors generally maintain much slower median audit times compared to all sectors (including both revenue and governmental

bonds). Here we again see a worsening of the median audit times for issuers in every municipal governmental bond sector between 2010 and 2021. Except for school districts, Figure 3 shows that municipal governmental bond issuers tend to have slower audit times than all sectors (including both revenue and governmental bonds) represented by the bolder black line, with median audit times ranging from the slowest of 209 days by counties in 2020 to the fastest of 144 days for school districts in both years 2012 and 2014.

Table 2. Median Audit Times (in Days) by Municipal Governmental Bond Sectors, 2010–2021

Years	Cities	Counties	Dedicated Tax	School Districts	States & Territories	All Sectors
2010	171	181	161	146	182	147
2011	173	181	165	146	182	152
2012	173	179	166	144	180	150
2013	171	181	166	148	176	150
2014	170	181	165	144	176	148
2015	175	183	171	154	184	156
2016	173	181	167	153	176	154
2017	173	180	167	153	175	154
2018	175	181	166	159	174	159
2019	177	199	170	156	173	158
2020	180	209	171	168	184	167
2021	180	198	174	169	187	166

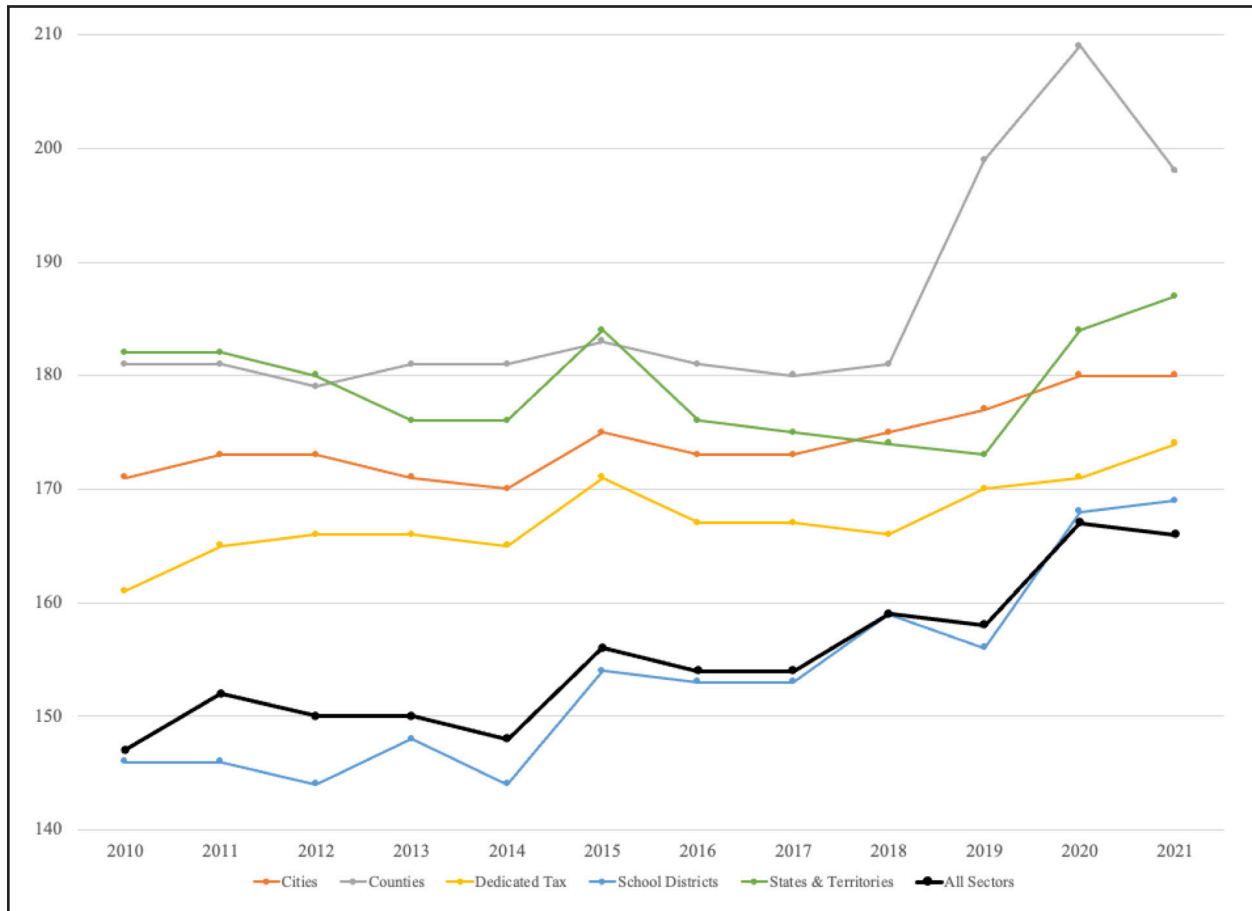
Notes: The number of issuers (and commensurately the number of audits) varies from year to year. Median audit times for 2021 reflect 9,154 municipal revenue bond issuers across the individual sectors shown out of 16,713 total revenue and governmental bond issuers across all sectors (shown in the last column).

Source: Merritt Research Services, an Investortools Company. Data compiled and reported from annual comprehensive audited financial reports available on February 24, 2023.

Again, looking at all sectors together (Table 2), school districts increased their median audit time the most—by nearly 16% or 23 days—between 2010 and 2021. This negative trend in timeliness is concerning because school districts comprise the largest proportion of all governmental bond issuers in our sample at 47.6%; on the other hand, this sector has generally maintained the speediest median audit times among all issuers in the municipal governmental bond sectors. Following school districts, counties worsened their median audit time by 9.4% or 17 days between 2010 and

2021. However, counties, which represent nearly 15% of all governmental bond issuers in our sample, were the only sector that improved their audit times between 2020 and 2021, reducing their median audit time by 5.3% or 11 days in just one year. Rounding out the three largest slowdowns among governmental bond issuers is the dedicated tax sector, which increased its median audit time between 2010 and 2021 by a little over 8% or 13 days but only worsened their median audit time between 2020 and 2021 by 3 days or 1.8%.

Figure 3. Median Audit Times (in Days) by Municipal Governmental Bond Sectors, 2010–2021



Highlighting the Best

Tables 3 and 4 show the creditors and auditors with the three fastest audit times (in days) by each municipal credit sector for revenue bond (Table 3) and governmental bond (Table 4) issuers. All the top performers highlighted in this report (except for the states and territories) finished their audits in 90 days or faster, providing exemplary best practice models for timely reporting among municipal bond issuers.

In Table 3, the 2021 audit time top performers include at least one new issuer from last year’s top three speediest audit times in every single revenue bond sector. In the airports sector, the Port Authority of New York & New Jersey was also number one for audit timeliness last year, and the Chesapeake Regional Airport in Virginia was also among the top three;

however, this year’s second place finisher of the Lewis University Airport in Illinois is new. The second place issuer among this year’s top three audit times in the community colleges sector, which is the Washtenaw Community College in Michigan, is new from last year’s top three, while the Victoria County Junior College District and the Tyler Junior College District, both located in Texas, stayed among the top three fastest. In the public higher education sector, the third place finisher of Ferris State University in Michigan is new, while the top two issuers of the University of South Alabama and Ferris State University in Michigan remained among the top three from last year. Among revenue bond issuers in the toll road sector, the two speediest audit times from the Buffalo & Fort Erie Public Bridge Authority and the New York State Bridge Authority in New York

both repeated their top rankings from last year, while the Maine Turnpike Authority is new among the top three this year. Finally, the third place finisher of the Clifton Park Water Authority in New York within the water and sewer sector is new among the top three this year, while the top two speediest audit times of the Erie Sewer Authority and the Schuylkill County Municipal Authority, both located in Pennsylvania, remain from last year.

The remaining revenue bond sectors in Table 3 include two new issuers among the top three speediest audit times from those listed among the top three last year. The top ranked issuer in the hospitals and healthcare systems, private higher education, and the retail electric sectors—the Kaiser Foundation Health Plan Inc & Kaiser Foundation Hospitals in California, St Leo University Inc in Florida, and the Sacramento Municipal Utility District in California, respectively—were among the top three in last year's rankings. Within the hospitals and healthcare systems, both the Mayo Clinic in Minnesota and the Forrest County General Hospital in Mississippi are new among the top three speediest audit times for 2021.

Among the issuers in the private higher education sector, both the Abilene Christian University in Texas and the California Baptist University in California are also both new this year. In the retail electric sector, both the Colorado Springs Utilities and the Salt River Project in Arizona are newly among the top three. Finally, although the Bonneville Power Administration in Oregon was among the top three finishers last year, both the Minnkota Power Cooperative Inc and the top ranked Square Butte Electric Cooperative, both in North Dakota, are new among the top three most timely audits for revenue bond issuers in the wholesale electric sector in 2021.

In Table 4, the 2021 audit time top performers include all three top performers from last year in two of the sectors and two new issuers from last year's top three in the other three sectors of governmental bond issuers. First, all of this year's cities—Sioux Falls, South Dakota; Kettering, Ohio; and Columbus, Ohio—as well

as the District of Columbia and the states of New York and South Carolina were all among the top three speediest audit times last year. Both Sioux Falls and the District of Columbia should be commended for their consistently high performance in audit timeliness—Sioux Falls has had the fastest audit time among all cities for each of the past four years, while the District of Columbia has been the leader among all states and territories for five of the past six audit years.

For the counties, Titus County in Texas was among the top three last year, while the first and third finishers of Cumberland County and Robertson County, both in Tennessee, are new to the top three this year. Among issuers in the dedicated tax sector, the Hidalgo County Regional Mobility Authority Registration Fee Revenue Bonds in Texas was also among the top three last year, but the top two finishers of the Schenectady Metroplex Development Authority and the New York Convention Center Development Corporation Hotel Unit Fee Bonds, both in New York, are new among the top three this year. Finally, the fastest audit time of the Southwest Independent School District in Texas is a repeat from last year, whereas both the Vallivue County School District #139 in Idaho and the Alamo Heights Independent School District in Texas are new among the timeliest issuers in the governmental bonds sectors.

Among these exemplary performers highlighted in Tables 3 and 4, it is also important to recognize the best auditors helping to contribute to the best practice of audit timeliness. The firm KPMG LLP is a standout, with the most creditors—five in total—listed in the top three among revenue bond issuers. Andrews Hooper Pavlik, PLC follows closely with three creditors listed among the top three speediest audit times for the revenue bond sectors in 2021. For the governmental bond sectors in 2021, the Tennessee Comptroller of the Treasury stands out by having two of the top three fastest audit times among all counties. We commend these audit firms and comptroller for their timeliness in producing audits.

Table 3. Audit Time Winners by Municipal Revenue Bond Sectors, 2021

Sectors	#1 Ranking			#2 Ranking			#3 Ranking		
	Creditor	Audit Time (Days)	Auditor Name	Creditor	Audit Time (Days)	Auditor Name	Creditor	Audit Time (Days)	Auditor Name
Airports	Port Authority of New York & New Jersey, NY	61	KPMG LLP	Lewis University Airport, IL	75	Lauterbach & Amen, LLP	Chesapeake Regional Airport, VA	76	Brown, Edwards & Company, LLP
Community Colleges¹	Victoria County Junior College District, TX	72	PC	Washtenaw Community College, MI	77	Andrews Hooper Pavlik, PLC	Tyler Junior College District, TX	78	Gollob Morgan Peddy, PC
Hospitals & Healthcare Systems	Kaiser Foundation Health Plan Inc & Kaiser Foundation Hospitals, CA	45	KPMG LLP	Mayo Clinic, MN	49	Ernst & Young, LLP	Forrest County General Hospital, MS	50	BKD, LLP
Private Higher Education	St Leo University Inc, FL	64	KPMG LLP	Abilene Christian University, TX	70	BKD, LLP	California Baptist University, CA	70	Cherry Bekaert, LLP
Public Higher Education	University of South Alabama, AL	46	KPMG LLP	Saginaw Valley State University, MI	71	Andrews Hooper Pavlik, PLC	Ferris State University, MI	82	Andrews Hooper Pavlik, PLC
Retail Electric²	Sacramento Municipal Utility District, CA	60	Baker Tilly US, LLP	Colorado Springs Utilities, CO	62	Baker Tilly US, LLP	Salt River Project, AZ	70	Pricewaterhouse-Coopers, LLP
Toll Roads	Buffalo & Fort Erie Public Bridge Authority, NY	56	Lumsden & McCormick, LLP	New York State Bridge Authority, NY	68	EFPR Group, CPAs, PLLC	Maine Turnpike Authority, ME	69	Wipfli, LLP
Water & Sewer³	Erie Sewer Authority, PA	27	Buseck, Barger, Bleil & Co, Inc	Schuylkill County Municipal Authority, PA	27	Jones & Co, PC	Clifton Park Water Authority, NY	47	Marvin & Company, PC
Wholesale Electric⁴	Square Butte Electric Cooperative, ND	32	Brady, Martz & Associates, PC	Bonneville Power Administration, OR	32	Pricewaterhouse-Coopers, LLP	Minnkota Power Cooperative Inc, ND	41	Brady, Martz & Associates, PC

¹ Includes tax supported and revenue bond issuers.

² Excludes utilities in places under 30,000 population.

³ Excludes water & sewer in places under 30,000 population.

⁴ Includes federal enterprise agencies and co-operatives.

Table 4. Audit Time Winners by Municipal Governmental Bond Sectors, 2021

Sectors	#1 Ranking			#2 Ranking			#3 Ranking		
	Creditor	Audit Time (Days)	Auditor Name	Creditor	Audit Time (Days)	Auditor Name	Creditor	Audit Time (Days)	Auditor Name
Cities¹	Sioux Falls, SD	82	Eide Bailly, LLP	Kettering, OH	82	Plattenburg & Associates, Inc	Columbus, OH	89	Plante & Moran, PLLC
Counties²	Cumberland County, TN	70	Tennessee Comptroller of the Treasury	Titus County, TX	77	Arnold, Walker, Arnold & Co, PC	Robertson County, TN	78	Tennessee Comptroller of the Treasury
Dedicated Tax	Schenectady Metroplex Development Authority, NY	69	BST & Co CPAs, LLP	New York Convention Center Development Corporation Hotel Unit Fee Bonds, NY	72	EFPR Group, CPAs, PLLC	Hidalgo County Regional Mobility Authority Registration Fee Revenue Bonds, TX	75	Burton McCumber & Longoria, LLP
School Districts³	Southwest Independent School District, TX	52	Coleman, Horton & Company, LLP	Valiuvue County School District #139, ID	56	Quest CPAs, PLLC	Alamo Heights Independent School District, TX	62	Armstrong, Vaughan & Associates, PC
States & Territories	District of Columbia	116	McConnell & Jones	New York	120	KPMG LLP	South Carolina	135	South Carolina State Auditor & CliftonLarsonAllen, LLP

¹ Excludes cities under 30,000 population and all towns & townships.

² Excludes counties under 30,000 population.

³ Excludes school districts under 30,000 population.

Big vs. Little Issuers

Table 5 offers a correlational analysis between audit time (in days) and the size of the population served by each issuer, as well as the amount of long-term or direct debt outstanding, for each municipal bond sector. The analysis allows us to determine with 95% or 99% confidence whether there is a systematic relationship between audit timeliness and jurisdiction size and/or indebtedness that is not simply the result of random chance. The correlation coefficient reported in Table 5 is a statistic that measures the strength and direction of a reciprocal, linear relationship between two variables; it ranges in value

from 0 (indicating no correlation) to +1 or -1 (indicating perfect positive or negative correlation). The negative sign on the correlation coefficients in Table 5 tell us that higher values of population or debt outstanding are associated with reduced or speedier audit times (in days); the positive correlation coefficients indicate the opposite relationship. In addition, the values of the correlation coefficients reported in Table 5 provide an indication of the strength of association between population or debt outstanding and audit timeliness, with values closer to one reflecting a stronger relationship.

Table 5. Correlational Analysis of Audit Time (in Days) vs. Population Served and Long-Term/ Direct Debt, 2021

	Sector	Mean Population Served	Correlation Coefficient	Mean Long-Term/ Direct Debt	Correlation Coefficient
Revenue Bond Sectors	Airports	2,380,261	-0.1572	\$1,046,546	-0.1750**
	Community Colleges	926,090	0.0774	\$144,138	0.0590
	Hospitals & Healthcare Systems	316,979	-0.0619	\$316,640	-0.2438***
	Private Higher Education	N/A	--	\$239,406	-0.1332***
	Public Higher Education	N/A	--	\$670,688	-0.0559
	Retail Electric	72,369	-0.0976**	\$175,203	-0.1185**
	Toll Roads	6,041,318	-0.1310	\$2,010,854	0.1021
	Water & Sewer	220,481	-0.0797***	\$173,059	-0.0539**
	Wholesale Electric	205,570	0.2237***	\$811,594	-0.2225***
Governmental Bond Sectors	Cities	60,650	-0.0644***	\$127,623	-0.0354
	Counties	202,951	-0.0911***	\$139,060	-0.1104***
	Dedicated Tax	1,952,175	-0.1365**	\$692,589	0.1804
	School Districts	64,372	-0.0183	\$100,791	-0.0608***
	States & Territories	6,434,246	-0.0404	\$11,800,000	-0.0273

Notes: **p < 0.05; ***p < 0.01. Population is irrelevant for private and public higher education since these issuers draw students regionally, nationally, and/or internationally. Rules of thumb for interpreting the size of a correlation coefficient are: 0.90 to 1.00 (-0.90 to -1.00) is a very high positive (negative) correlation, 0.70 to 0.90 (-0.70 to -0.90) is high, 0.50 to 0.70 (-0.50 to -0.70) is moderate, 0.30 to 0.50 (-0.30 to -0.50) is low, and 0.00 to 0.30 (0.00 to -0.30) is a negligible positive (negative) correlation.

According to the results shown in Table 5, larger jurisdictions (measured by the population served) tend to have speedier audit times (indicated by the negative correlation coefficients) in the retail electric and water and sewer sectors for revenue bond issuers and for cities, counties, and the dedicated tax sector

for governmental bond issuers. Conversely, however, larger revenue bond issuers in the wholesale electric sector tend to have slower audit times as indicated by the positive value of the correlation coefficient. We find no statistically significant correlation between audit time and population size for the remaining

sectors, suggesting there is no direct correlation and any observed relationship is merely due to random chance.

In terms of audit timing and indebtedness, Table 5 also shows that revenue bond issuers with higher amounts of long-term debt outstanding tend to have faster audit times in the airports, hospitals and healthcare systems, private higher education, retail electric, water and sewer, and wholesale electric sectors. Indebtedness makes no difference in terms of audit timing for community colleges, public higher education, and toll roads. Among the governmental bond issuers, both counties and school districts with higher amounts of direct debt outstanding tend to have speedier audit times. For states and territories, cities, and issuers in the dedicated tax sector, indebtedness has no bearing on audit timeliness. These results suggest that issuers who are more concerned about their access to the municipal debt market tend to be more timely in their audits.

Taken altogether, the findings in Table 5 do not support the commonly made assertion that issuers from very large or very small

jurisdictions face more difficulty in completing timely audits. In addition, looking back at this year's audit time winners (highlighted in Tables 3 and 4), 20 of the 36 issuers (excluding the private and public higher education sectors), or nearly 55% of this year's speediest audits come from jurisdictions with populations below the mean population for their respective sector.

Conversely, there are several issuers among the top three with populations that far exceed the average population of issuers in their sectors. Specifically, 6 out of 23 (26%) issuers have populations greater than one standard deviation above the mean for their sectors. And, 5 of 23 (nearly 22%) issuers have populations greater than two standard deviations—statistically considered outliers—above the mean population for their respective sectors, showing that very large issuers in the airports (Port Authority of New York & New Jersey), retail electric (Sacramento Municipal Utility District), and toll road (New York State Bridge Authority) sectors, along with the states of New York and South Carolina, are fully capable of producing timely audits.

Public vs. Private Auditors

Table 6 provides the results of difference of means testing of audit times (in days) between private versus public sector auditors for each municipal bond sector, with the mean audit times between public and private sector auditors illustrated in Figures 4 and 5. The analysis allows us to determine with 95% or 99% confidence whether there is a systematic difference in audit timeliness between municipal bond issuers using auditors from the private sector and those using the state, legislative, or other public sector auditors that is not simply the result of random chance.

According to the results shown in Table 6 and illustrated in Figure 4, among issuers in the revenue bond sectors, community colleges,

public higher education, retail electric, and water and sewer sector issuers using private sector auditors have systemically faster audit times (as indicated by the mean audit time values reported) than issuers in these sectors using public sector auditors. For revenue bond issuers in the airports, hospitals and healthcare systems, and toll roads sectors, the type of auditor used makes no difference in terms of audit timeliness. This finding is most likely due to very few issuers using public sector auditors in these three revenue bond sectors. As can also be seen from Table 6, public sector auditors were not used at all for revenue bond issuers in the private higher education and wholesale electric sectors.

Table 6. Difference of Means Testing of Audit Time (in Days) of Private vs. Public Sector Auditors, 2021

	Sector	Number of Private Sector Audits	Mean Audit Time (in Days) of Private Sector Auditors	Number of Public Sector Audits	Mean Audit Time (in Days) of Public Sector Auditors	t
Revenue Bond Sectors	Airports	144	161	3	251	-2.0012
	Community Colleges	270	167	34	222	-3.3893***
	Hospitals & Healthcare Systems	864	130	4	201	-1.8982
	Private Higher Education	631	139	N/A	N/A	--
	Public Higher Education	188	155	112	191	-4.0718***
	Retail Electric	441	152	13	219	-4.3786***
	Toll Roads	71	146	2	115	0.8281
	Water & Sewer	1,320	171	40	239	-6.0850***
	Wholesale Electric	160	109	N/A	N/A	--
Governmental Bond Sectors	Cities	1,668	200	77	244	-6.1846***
	Counties	879	209	226	246	-6.1062***
	Dedicated Tax	243	175	24	243	-4.7368***
	School Districts	2,599	175	301	272	-21.4798***
	States & Territories	15	223	37	217	0.2308

Notes: **p < 0.05; ***p < 0.01. Due to large differences in the numbers of observations within each sector of issuers using private sector vs. public sector auditors, the t-tests were performed using Welch's approximation. None of the issuers in the Private Higher Education and Wholesale Electric sectors used public sector auditors.

The differences in audit timeliness between public and private sector auditors is even more stark for issuers in the governmental bond sectors, as can be seen in Table 6 and Figure 5. Among these issuers, there is no systematic difference in audit time for states and territories using private versus public sector auditors. However, the remainder of issuers in the governmental bond sectors—cities, counties, dedicated tax, and school districts—have systematically faster audit times when using private sector auditors compared

to those using public sector auditors. As noted earlier, staffing shortages and an insufficient number of auditors have recently been cited as the primary reason for slower audit times by public sector auditors. This problem gets exacerbated in states with requirements for state auditors to sign off on local governments' audited financial documents due to the sheer numbers of local governments for which short-staffed public auditor offices must conduct financial audits.



Figure 4. Mean Audit Time (in Days) of Private vs. Public Sector Auditors by Revenue Bond Sector, 2021

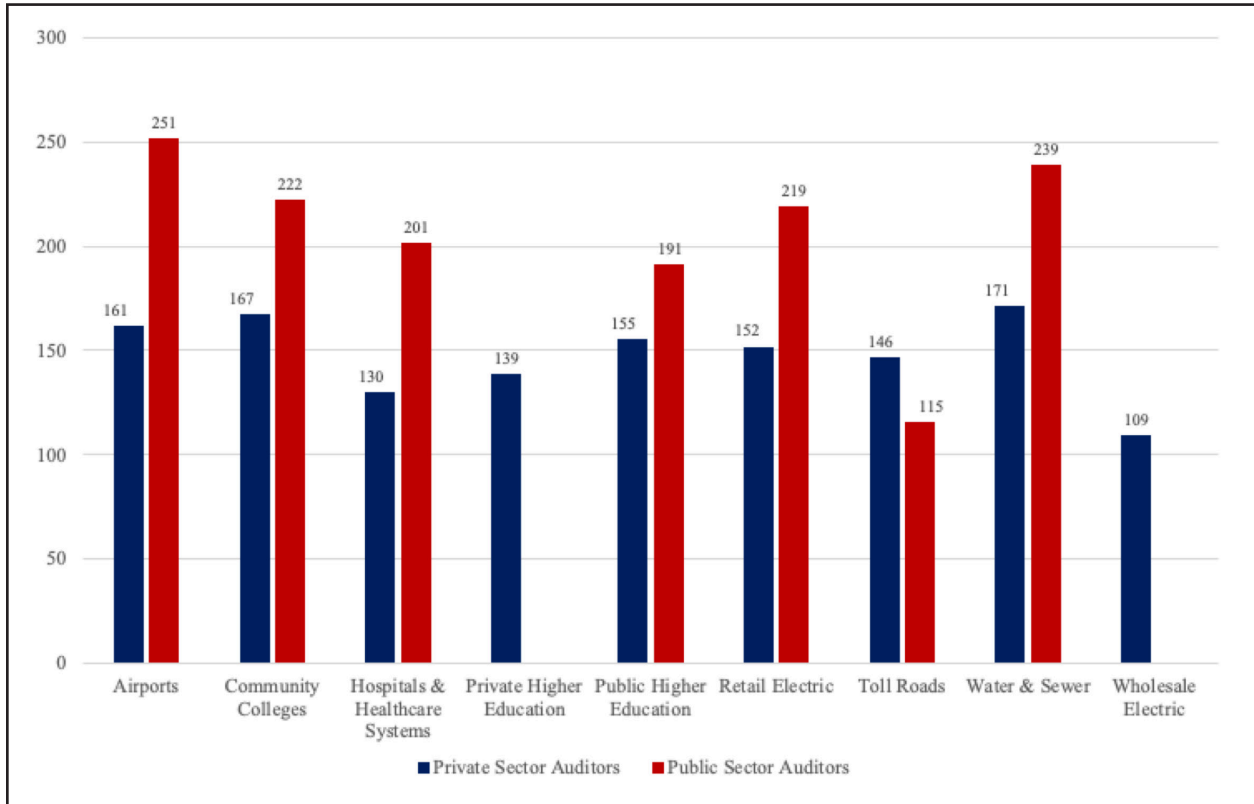
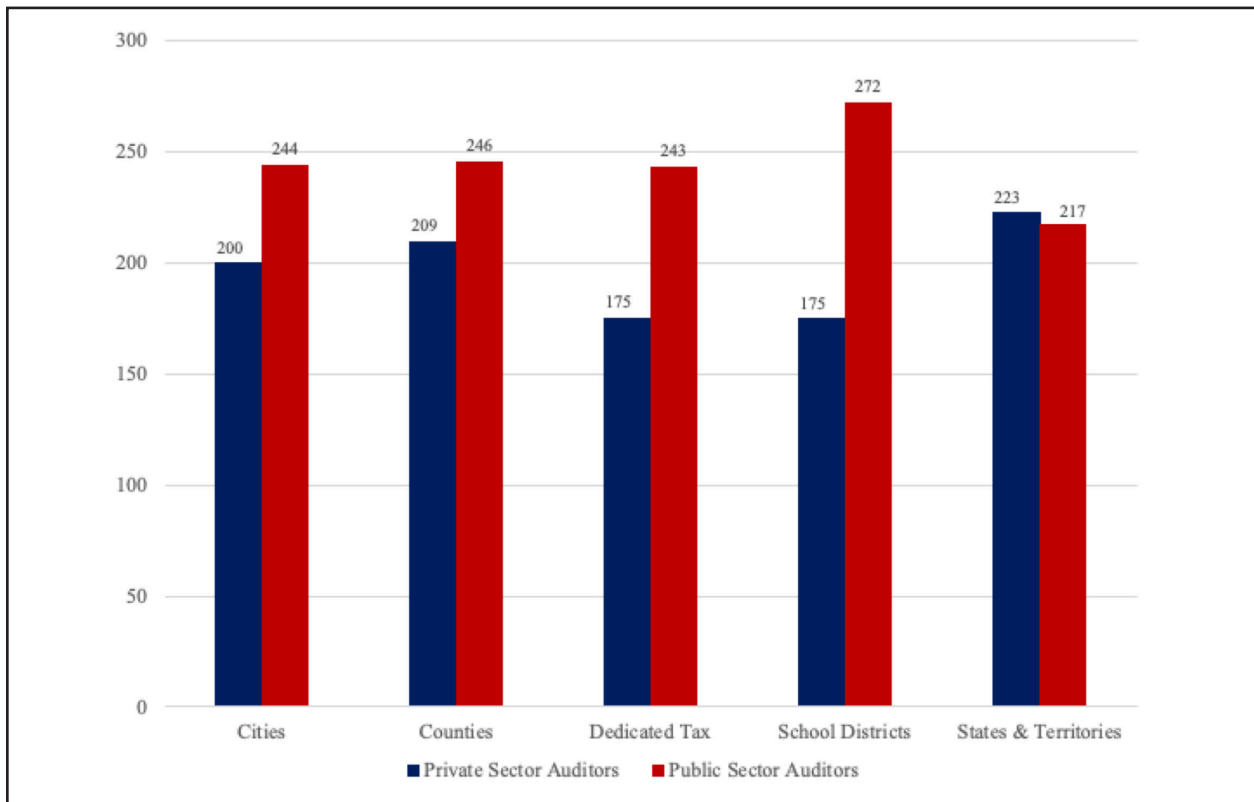


Figure 5. Mean Audit Time (in Days) of Private vs. Public Sector Auditors by Governmental Bond Sector, 2021





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