A Comprehensive Analysis of Findings from Single Audits: The Implications of Auditee Type and Auditor Expertise

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ABSTRACT: Single audits provide critical accountability for federal grant awards. Our study comprehensively examines differences in single audit findings (related to both financial statements and major program compliance) by auditee type (state/local government and nonprofit) and across varying levels of auditor expertise. In a sample of 24,144 audit engagements over the period 2004 through 2010, nonprofit auditees report fewer internal control deficiencies than government auditees, but more instances of questioned costs related to major programs. Audits conducted by firms with lower single audit expertise are associated with fewer financial statement and major program compliance findings. The results by auditee type and auditor expertise are important to discussions of single audit quality.

Keywords: single audits; nonprofit organizations; state and local governments; auditor expertise.

INTRODUCTION

The single audit is a critical mechanism for ensuring accountability with federal grant awards, which approximated $500 billion in 2009 (GAO 2009). Awarded to either state/local governments or nonprofit organizations, this federal grant funding requires administration...
by 23 federal departments and agencies via approximately 1,670 unique grant programs designed to meet national objectives (GAO 2011).\(^1\) State and local governments have a longer history of federal funding (Hall 2008); however, federal funding for nonprofit organizations has increased significantly since the mid-1990s (Smith 2006; Gronbjerg and Salamon 2002; Abramson, Salamon, and Steuerle 2006). Currently, both government and nonprofit organizations participate in federal grant awards in roughly equivalent amounts, with each receiving more than $200 billion in 2010.\(^2\) Despite the participation in federal grants by both entity types, no previous study compares single audit findings between the two auditee types.

In this study, we examine differences between state/local governments and nonprofit organizations. We consider the full range of single audit outputs, including the opinion on the financial statements and evaluation of internal controls, which is the focus of most prior research (e.g., Petrovits, Shakespeare, and Shih 2011; López and Peters 2010). We also consider the grant recipient organization’s major programs, i.e., programs that are federally funded and meet certain size and risk criteria.\(^3\) Understanding the differences between the audit findings of these two auditee types is important from policy and operational perspectives. From a policy perspective, it is important to begin discussion of whether differences in audit findings suggest better internal controls or grant management practices in one auditee type or, alternatively, that audit firms approach the two types of auditees differently. From an operational perspective, it is possible, in some instances, that federal agencies choose between state/local government and nonprofit organization to meet a national objective.\(^4\)

To evaluate the differences in the single audit findings of governments and nonprofit organizations, we utilize a sample of 24,144 entity-year observations over the seven-year period 2004 through 2010, obtained from the Federal Audit Clearinghouse. The sample includes both government and nonprofit organizations with the following mission types: (1) hospitals, (2) housing authorities, (3) institutions for higher education, (4) local education agencies, and (5) transit agencies. Our sample therefore excludes general purpose governments such as cities, counties, and towns, which do not have nonprofit counterparts. We examine both categories of findings: (1) financial statement findings (audit opinion, internal control deficiencies, and noncompliance with grant requirements that are material to the financial statements), and (2) major program findings (opinion on compliance, internal control deficiencies, questioned costs, and current-year findings affecting direct federal funding).

Logit regression results suggest that nonprofit organizations have better internal controls (i.e., fewer instances of internal control deficiencies) related to both financial statement preparation and

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\(^1\) Federal grant funding is also less commonly awarded to for-profit entities.

\(^2\) Data from the Federal Audit Clearinghouse for 2010 reflect approximately $236 billion of federal grant awards expended by state or local governments and approximately $209 billion by nonprofit organizations.

\(^3\) Major programs are those federal programs determined by the auditor to be major based on size and risk criteria (OMB 2013).

\(^4\) Per our analysis of the Federal Audit Clearinghouse database, there is variability in the proportion of government and nonprofit grantees for a given grant program. Among the programs managed by the U.S. Department of Housing and Urban Development (HUD), for example, some distribute grant awards predominantly to governments (e.g., 95.7 percent of the grant expenditures for the Section 8 Housing Choice Vouchers in 2010 were associated with government housing authorities) and some predominantly to nonprofits (e.g., 99.5 percent of the grant expenditures for the Supportive Housing for the Elderly grants in 2010 were associated with nonprofit housing agencies). However, some grant programs distribute awards more evenly between governments and nonprofits. As an example, HUD administers a Medical Assistance Program via CFDA 93.778, and of the $1.7 billion expended in 2010, 54.7 percent was for nonprofit awardees (45.3 percent was for government awardees).
major program compliance. However, nonprofit organizations are associated with a greater likelihood of questioned costs associated with major programs than their government counterparts. Although federal grants to nonprofit organizations have grown since the 1990s, these organizations may be less equipped to manage the grant compliance requirements than their government counterparts (Smith 2006; Gronbjerg and Salamon 2002; Abramson et al. 2006).

We also consider the effects of auditor expertise more comprehensively than in prior studies that consider expertise using audit firm size (DeAngelo 1981). We consider firm size with dichotomous variables for Big 4 and Top 25 (excluding Big 4) firms, but also identify specialist auditors as those that conduct 50 or more single audits in a specified year. We also identify auditors as having low expertise when they conduct ten or fewer single audits in a specified year. Relative to firms with moderate expertise, we find that specialist firms (inclusive of Big 4) are associated with more major program findings, but not more financial statement findings. Firms with low expertise are associated with fewer financial statement and major program findings, a result that is informative to the discussions of single audit quality raised by the President’s Council on Integrity and Efficiency (PCIE 2007).

The noted differences between government and nonprofit auditees, particularly related to internal controls (nonprofits report fewer deficiencies) and questioned costs (nonprofit report more instances) are robust to the inclusion of control variables that capture other auditee characteristics. In addition, sensitivity tests generally affirm these results.

Our results contribute to the literature by demonstrating differences in single audit findings by auditee type. Furthermore, our results suggest that low expertise is associated with fewer single audit findings, which may indicate lower audit quality. Collectively, these results provide insight to future updates to the National Sampling Project, which focuses on single audit quality (PCIE 2007).

BACKGROUND AND RESEARCH QUESTIONS

**Background on Single Audits**

Federal government grants are awarded to state/local governments and nonprofit organizations to meet national objectives. Accountability of these awards is evaluated in part using reported findings within the single audit report. Legislated in 1984, the single audit is

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5 While Big 4 and Top 25 consistently meet our definition of specialist in our sample, we separately identify Big 4, Top 25 (excluding Big 4), and specialist firms (excluding Big 4 and Top 25) to be comprehensive. It is important to consider specialist firms in our sample because large audit firms are less common in the market for single audits, leaving room for smaller firms to develop expertise in this market (Lowensohn et al. 2007; Tate 2009). This niche firm opportunity may suggest different expectations in this market than the for-profit market contemplated by DeAngelo’s (1981) model. For example, based on our analysis, Big 4 and Top 25 (excluding Big 4) audit firms comprise a relatively small portion of our sample, each with 5.9 percent of the 24,144 observations. Other specialist firms comprise 12.6 percent of our sample.

6 These results are generally consistent with Tate (2009), who finds that Big 5 firms are associated with more compliance-related findings among a sample consisting entirely of nonprofit organizations.

7 Other control variables (beyond audit firm expertise) include size, relative importance of federal funding, complexity—indicated by the number of federal granting agencies, mission type, and location.

8 An exception is that, in univariate paired t-tests matching without replacement on covariates, the primary result that nonprofit auditees report fewer internal control deficiencies specific to financial statement preparation than government auditees only holds in a subsample of observations that only includes firms lacking single audit expertise. It should be noted that the results hold in all multivariate sensitivity tests conducted.
conducted in accordance with generally accepted government auditing standards (GAGAS, also referred to as the Yellow Book) and applies to federal grant awardees (either state/local governments or nonprofit organizations) expending more than a specified threshold of grant awards.9 The single audit yields findings related to the financial statements including (1) opinions on the financial statements including the schedule of expenditures of federal awards, (2) whether there are internal control deficiencies, and (3) whether there is noncompliance that is material to the financial statements. The audit also yields findings related to each major program, i.e., a program funded by the federal government that meets certain risk and size criteria (OMB 2013). These include (1) opinions on compliance with major program requirements, (2) whether there are internal control deficiencies related to major programs, (3) whether there are questioned costs associated with federal grants, and (4) whether there are current-year audit findings related to direct federal funding. Whether findings are reported by the audit firm depends on both on the existence of a finding and the audit firm’s detection of the finding (DeAngelo 1981; PCIE 2007).

**Research Questions**

The existing academic studies regarding the variation in single audit findings tend to be conducted within one client type—either state/local government (e.g., López and Peters 2010) or nonprofit organizations (e.g., Keating, Fischer, Gordon, and Greenlee 2005). To address whether there are differences in findings between the two types, we include both governments and nonprofits in one sample. We use an exploratory approach in investigating the potential differences, as there is not a theoretical framework or previous empirical work that allows development of formal hypotheses. While some studies have examined performance differences between government and nonprofit organizations, the results have been mixed; furthermore, we are not aware of any study that examines the differences in audit findings—financial statements or major programs—across both auditee types.10

In considering single audit financial statement findings, we consider the users of the reports (Gray, Turner, Coram, and Mock 2011) and reporting model complexity.11 The users of financial information from the two auditee types are likely similar and include the federal government agencies making grant awards, other government agencies, and bond rating agencies (Engstrom

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9 The Single Audit Act (P.L. 98-502, U.S. House of Representatives 1984) subjected state and local governments that received more than $100,000 of federal funding to additional testing beyond that of a typical financial statement audit. In 1990, the Office of Management and Budget (OMB 1990) administratively extended single audit requirements to nonprofit organizations via OMB Circular A-133. Applicable to both governments and nonprofit organizations receiving federal grant awards, the threshold has since increased three times. First, the Single Audit Act Amendments of 1996 (P.L. 104-156, U.S. House of Representatives 1996) raised the threshold to $300,000 of federal grant awards expended. Second, the OMB (2003) raised the threshold to $500,000 of federal grant awards expended. Third, with the issuance of Uniform Guidance via 2 CFR 200, the OMB (2013) increased the threshold to $750,000 of federal grant awards expended for fiscal years beginning after December 26, 2014. For a thorough history of the single audit, particularly the events leading up to legislation and the early years following the 1984 legislation, see Brown and Burnaby (1988).

10 Ben-Ner and Ren (2008) find that nonprofit nursing homes have fewer regulatory deficiencies than government nursing homes. Eldenburg, Hermalin, Weisbach, and Wosinska (2004) find that nonprofit hospitals have lower CEO turnover and higher excess income margins, but higher administrative expenses than government hospitals. Eldenburg and Krishnan (2003) find no differences in quality of care between nonprofit and government hospitals.

11 Gray et al. (2011) present evidence of the misperceptions of financial statement users and provide a comprehensive discussion of the different stakeholder groups with interest in auditors’ reports.
and Esmond-Kiger 1997; Calabrese and Ely 2016). However, reporting models for the two auditee types differ. While nonprofit organizations follow accounting pronouncements by the Financial Accounting Standards Board (FASB) and prepare one set of financial statements, state and local governments follow pronouncements of the Governmental Accounting Standards Board (GASB), which require two sets of financial statements based on Statement No. 34 (GASB 1999). The complexity of the GASB 34 reporting model is studied extensively in the context of bond ratings (Reck and Wilson 2014; Plummer, Hutchison, and Patton 2007; Johnson, Lowensohn, Reck, and Davies 2012; Priden and Wilder 2013). The complexity in the state and local government setting is exacerbated by state-specific legislation exempting these entities from following GAAP (NASACT 2013) and the election of special purpose frameworks (as alternatives to GAAP) by smaller local governments (Patrick 2010). While the complexity of government financial reporting may suggest that these auditees would have more financial statement audit findings, similarity in financial statement user groups may suggest no difference between the two auditee types. We therefore pose the following research question without a directional prediction:

**RQ1a:** Are there differences between the single audit financial statement findings for nonprofit organizations and state/local governments?

Second, related to major program compliance, users of single audit information have similar objectives whether the auditee is a state/local government or nonprofit organization. In both settings, federal departments and agencies use this information to evaluate accountability with grant awards expended and make future funding decisions (Petrovits et al. 2011). However, federal grant funding of nonprofit organizations has a shorter history than federal funding of state/local governments. Smith (2006) notes significant direct federal funding of nonprofit organizations beginning in the 1960s based in part on the lack of capacity available in state and local governments to meet expanding national social objectives. In addition, the federal grant funding of nonprofit organizations increased significantly beginning in the mid-1990s (Gronbjerg and Salamon 2002; Abramson et al. 2006). Whether nonprofit organizations adapted to the needed grant management and compliance processes with this rapid growth of federal funding remains empirically untested. We therefore propose the following research question without making a directional prediction:

**RQ1b:** Are there differences between the single audit major program findings for nonprofit organizations and state/local governments?

Finally, we also consider the role of audit firm size and expertise in our analyses. While the for-profit audit literature generally suggests that audit firm size and audit quality are related (e.g., DeAngelo 1981), we note that the single audit market may be fundamentally different than the for-profit audit market. The PCIE (2007) expressed concerns about single audit quality, especially among smaller clients. The noted concerns with quality may be due in part to the lack of desirability of single audits to audit firms. Lowensohn, Johnson, Elder, and Davies (2007), for example, find that large CPA firms may not view government audits as desirable, leaving space for other firms to develop expertise in this niche. As a result, we consider both audit firm size and audit firm expertise, measured as the number of clients in a particular industry, as a proxy for expertise and/or audit quality (Lowensohn et al. 2007; Deis and Giroux 1992; López and Peters 2010).

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12 The PCIE (2007) examined audit quality in a sample of 208 audits, categorizing auditees based on size. Among the smaller auditees, only 48.2 percent of the audits were deemed acceptable (63.5 percent among larger auditees) (PCIE 2007). The lower acceptable rate among smaller auditees may be related to the audit market constraints, as audit firms with single audit expertise may not pursue smaller single audit clients.
While we generally expect audit firm size and audit firm expertise to be positively associated with single audit findings, we note some mixed evidence in the literature. In the nonprofit setting, Tate (2009) expects Big 5 audit firms to be more likely to report qualified audit opinions and compliance findings. While she finds that Big 5 firms are associated with more compliance findings and questioned costs, her evidence suggests that Big 5 CPA firms are more likely to issue unqualified audit opinions and less likely to report reportable conditions in the nonprofit setting (Tate 2009). Other studies in the nonprofit setting report similar results, i.e., large firms are associated with fewer internal control deficiencies (Keating et al. 2005; Petrovits et al. 2011; López, Rich, and Smith 2013; Pridgen and Wang 2012). Finally, we note that while some studies separately identify other expert auditors, i.e., specialists, the impact of low expertise has not been previously considered. We incorporate both high (specialist) and low expertise in our consideration of the following research questions related to financial statement and major program findings without a directional prediction:

RQ2a: Are audit firm size and expertise (Big 4, Top 25, specialist, and low expertise) associated with single audit financial statement findings?

RQ2b: Are audit firm size and expertise (Big 4, Top 25, specialist, and low expertise) associated with single audit major program findings?

DATA AND METHODOLOGY

Data and Sample

Our sample contains data from the U.S. Census Bureau’s Federal Audit Clearinghouse (FAC), supplemented by data from the National Center for Charitable Statistics (NCCS), U.S. Department of Housing and Urban Development (HUD), and U.S. Census Bureau. The FAC provides an online submission system for single audit filings that is managed by the U.S. Census Bureau on behalf of the OMB. The FAC began tracking filings by auditee type (government or nonprofit) in 2001. We select a sample period beginning in 2004 following a threshold change to $500,000 of federal award expenditures. The complete database includes 275,228 observations over the 2004 through 2010 period.

We narrow our sample to 137,483 organizations with mission types typically executed by either government or nonprofit organizations. These mission types are (1) hospitals, (2) housing authorities, (3) institutions for higher education, (4) local education agencies, and (5) transit agencies. This excludes general purpose governments such as cities, towns, and villages, for which there are no nonprofit counterparts. This restriction facilitates empirical tests of differences based on auditee type (i.e., government versus nonprofit). We also eliminate from our sample observations reporting a government auditor, rather than an external audit firm. Finally, we eliminate government and nonprofit organizations located in states that allow governments to adopt methods of accounting other than what is required by generally accepted accounting standards.

13 This $500,000 is the same for the entire sample period (OMB 2003).
14 Our analyses focus on observations associated with external audit firms, as our inclusion of nonprofit organizations necessitates this approach. Some single audits, but primarily those of state/local governments, are conducted by government auditors (e.g., the National Association of State Auditors, Comptrollers, and Treasurers [NASACT 2013] reports that in 12 states, the state auditor is entirely responsible for auditing the state and its agencies, and that in 15 states, the state auditor is entirely responsible for auditing local governments including cities, counties, towns, and villages).
principles (NASACT 2013). Our final sample is 24,144 observations, including 11,686 government-year observations and 12,458 nonprofit-year observations, as depicted in Table 1.

The 24,144 observations in our sample represent expenditures of federal awards totaling more than $232 billion over the 2004 through 2010 period. Despite the significance of the federal funding, Panel B of Table 1 reflects a relatively small portion of our sample audited by Big 4 or Top 25 (excluding Big 4) firms, with 5.9 percent of the 24,144 observations, 1,415 and 1,429 audits, respectively, for the two firm types. Specialist firms, non-Top 25 auditors that conduct more than 50 total single audits during the specified year, are associated with 3,044 (12.6 percent) of the observations. Firms conducting ten or fewer single audits in a specified year are associated with 7,311 observations, or 30.3 percent of the sample, consistent with the audit quality concern noted by the PCIE (2007) specific to single audits and by the AICPA (2014) more broadly. As depicted in Panels C and D, Big 4 and Top 25 firms are more focused on the nonprofit segment (e.g., only 197 of the 1,415 audits conducted by Big 4 firms [13.9 percent] are government audits). Specialist, other, and low expertise firms are more likely to have a more balanced mix of audit clients, with 70.7, 48.8, and 49.3 percent of each, respectively, comprised of government (versus nonprofit) clients. From a policy perspective, the client mix suggests that the concern with low expertise is present in both nonprofit and government auditee types (29.7 percent of nonprofit single audits and 30.9 percent of government single audits are conducted by an auditor conducting ten or fewer single audits).

As indicated in Panel E of Table 1, the number of annual filings within the five mission types increased 29 percent over the seven-year sample period (from 3,148 to 4,065). The most significant increases are in the later part of the sample period from 2008 to 2010, and among housing agencies and local education agencies.

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15 We include in our sample only the observations in states identified by the National Association of State Auditors, Comptrollers, and Treasurers (NASACT 2013) “Auditing in the States” annual survey as requiring GAAP reporting for local governments. States that permit a basis of accounting (i.e., special purpose framework) for their local governments are excluded, as are states that may have not completed the survey. We remove these states from our sample to ensure greater comparability to nonprofit organizations, which are generally expected to follow GAAP and are not legislatively exempted from doing so. Including states that permit local governments to follow special purpose frameworks results in government observations with financial statement findings that may be the result of an election rather than an indication of an actual financial statement finding. Exclusion of non-GAAP states that allow such an election for local governments therefore provides for greater similarity with the nonprofit organizations in our sample. The remaining states in our sample are Arizona, Connecticut, Florida, Georgia, Hawaii, Louisiana, Maine, Maryland, Massachusetts, New Mexico, Oregon, Rhode Island, Tennessee, Texas, Virginia, and Wyoming (NASACT 2013). Baber and Gore (2008) categorize 25 of the 50 U.S. states as either GAAP or non-GAAP for their sample period 1998–2002. Of the 16 states we include as GAAP states, Baber and Gore (2008) identify seven as GAAP, seven are uncategorized, and two are identified as non-GAAP. For the two states in question, we confirmed with state comptrollers that GAAP is indeed required for these states in our sample period of 2004–2010.

16 The percentage of our sample (12.6 percent) with a specialist audit firm is comparable to the percentage of specialist firms in Petrovits et al. (2011), i.e., 14.6 percent. Their threshold is 100 single audits conducted over their entire sample period of 1999 through 2007, rather than an annual count. We acknowledge that there are many ways to measure expertise, and we considered alternative measures. Because the emphasis of the study is differential single audit findings, we chose to measure expertise by the count of the number of single audits performed in a specified year. Although firms may specialize beyond single audits, i.e., by auditee type (government or nonprofit) or by mission type, knowledge of single audits should be transferrable. To evaluate the degree to which firms participate in multiple specialized single audit markets, we evaluated the entire Federal Audit Clearinghouse database for the period of our sample, 2004 to 2010, focusing on those firms that conduct at least ten audits on an average annual basis. This results in 357 unique firms, 69.7 percent of which conduct audits for both government and nonprofit auditees, and 68.3 percent of which conduct audits in more than one mission type. This provides some support that the single audit expertise gained in one domain may be transferrable to others, also supporting our measurement of specialization as the count of single audits conducted.
### TABLE 1
Final Samples

Panel A: Sample Reconciliation

| Mission Type       | Hospital | Housing Agency | Higher Education | Local Education | Transit Agency | Total   |
|--------------------|----------|----------------|-----------------|-----------------|----------------|---------|
| Total Observations | 2,353    | 58,834         | 14,269          | 59,790          | 2,237          | 137,483 |
| Eliminated Non-GAAP States | (1,607) | (41,182)       | (10,809)        | (48,251)        | (1,630)        | (103,479) |
| Observations in GAAP States | 746     | 17,652         | 3,460           | 11,539          | 607            | 34,004  |
| Eliminated for Missing Information | (275)  | (5,021)        | (583)           | (3,709)         | (272)          | (9,860)  |
| Sample Description | 471      | 12,631         | 2,877           | 7,830           | 335            | 24,144  |

Auditees:
- State/Local Government: 26, 3,352, 660, 7,378, 270, 11,686
- Nonprofit: 445, 9,279, 2,217, 452, 65, 12,458

| Mission Type       | Hospital | Housing Agency | Higher Education | Local Education | Transit Agency | Total   |
|--------------------|----------|----------------|-----------------|-----------------|----------------|---------|
| Big 4              | 304      | 188            | 783             | 95              | 45             | 1,415   |
| Top 25             | 39       | 757            | 381             | 228             | 24             | 1,429   |
| Specialist         | 8        | 1,559          | 123             | 1,326           | 28             | 3,044   |
| Other              | 46       | 6,764          | 704             | 3,308           | 123            | 10,945  |
| Low 10             | 74       | 3,363          | 886             | 2,873           | 115            | 7,311   |
|                   | 471      | 12,631         | 2,877           | 7,830           | 335            | 24,144  |

Panel B: Sample by Audit Firm Type

| Mission Type       | Hospital | Housing Agency | Higher Education | Local Education | Transit Agency | Total   |
|--------------------|----------|----------------|-----------------|-----------------|----------------|---------|
| Big 4              | 290      | 179            | 749             | 0               | 0              | 1,218   |
| Top 25             | 37       | 691            | 295             | 20              | 3              | 1,046   |
| Specialist         | 8        | 748            | 90              | 33              | 13             | 892     |
| Other              | 45       | 4,848          | 488             | 207             | 17             | 5,605   |
| Low 10             | 65       | 2,813          | 595             | 192             | 32             | 3,697   |
|                   | 445      | 9,279          | 2,217           | 452             | 65             | 12,458  |

Panel C: Sample by Audit Firm Type—Nonprofit Clients Only

| Mission Type       | Hospital | Housing Agency | Higher Education | Local Education | Transit Agency | Total   |
|--------------------|----------|----------------|-----------------|-----------------|----------------|---------|
| Big 4              | 290      | 179            | 749             | 0               | 0              | 1,218   |
| Top 25             | 37       | 691            | 295             | 20              | 3              | 1,046   |
| Specialist         | 8        | 748            | 90              | 33              | 13             | 892     |
| Other              | 45       | 4,848          | 488             | 207             | 17             | 5,605   |
| Low 10             | 65       | 2,813          | 595             | 192             | 32             | 3,697   |
|                   | 445      | 9,279          | 2,217           | 452             | 65             | 12,458  |

(continued on next page)
Empirical Models

We employ logit or ordered logit regression models of financial statement and major program findings (FINDING). Our model is specified as follows (with full variable definitions in Appendix A):

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FINDING_{it} = \beta_0 + \beta_1 NP_{it} + \beta_2 BIG4_{it} + \beta_3 TOP25_{it} + \beta_4 SPECIALIST_{it} + \beta_5 LOW10_{it} + \beta_6 NP_{it} \times BIG4_{it} + \beta_7 NP_{it} \times TOP25_{it} + \beta_8 NP_{it} \times SPECIALIST_{it} + \beta_9 NP_{it} \times LOW10_{it} + \beta_{10} \ln \text{REVENUE}_{it} + \beta_{11} \text{FEDEXPRATIO}_{it} + \beta_{12} \text{TOTALAGENCIES}_{it} + \beta_{13} \text{LOW}_RISK_{it} + \beta_{14} \text{PY}_FINDINGS_{it} + \beta_{15} \text{COGNIZANT}_{it} + \beta_{16-21} \text{YEAR}_{it} + \beta_{22-40} \text{STATE}_{i} + \beta_{41-44} \text{MISSIONTYPE}_{i} + \varepsilon_{it}
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TABLE 1 (continued)

Panel D: Sample by Audit Firm Type—Government Clients Only

| Mission Type          | Hospital | Housing Agency | Higher Education | Local Education | Transit Agency | Total |
|-----------------------|----------|----------------|------------------|-----------------|----------------|-------|
| Big 4                 | 14       | 9              | 34               | 95              | 45             | 197   |
| Top 25                | 2        | 66             | 86               | 208             | 21             | 383   |
| Specialist            | 0        | 811            | 33               | 1,293           | 15             | 2,152 |
| Other                 | 1        | 1,916          | 216              | 3,101           | 106            | 5,340 |
| Low 10                | 9        | 550            | 291              | 2,681           | 83             | 3,614 |
|                       |          |                |                  |                 |                | 26    |
|                       |          |                |                  |                 |                | 3,352 |
|                       |          |                |                  |                 |                | 660   |
|                       |          |                |                  |                 |                | 7,378 |
|                       |          |                |                  |                 |                | 270   |
|                       |          |                |                  |                 |                | 11,686|

Panel E: Sample by Year

| Mission Type          | Hospital | Housing Agency | Higher Education | Local Education | Transit Agency | Total |
|-----------------------|----------|----------------|------------------|-----------------|----------------|-------|
| 2004                  | 53       | 1,650          | 408              | 999             | 38             | 3,148 |
| 2005                  | 67       | 1,661          | 413              | 1,040           | 45             | 3,226 |
| 2006                  | 73       | 1,794          | 418              | 1,068           | 43             | 3,396 |
| 2007                  | 66       | 1,820          | 417              | 1,070           | 46             | 3,419 |
| 2008                  | 65       | 1,633          | 397              | 1,088           | 50             | 3,233 |
| 2009                  | 69       | 1,975          | 409              | 1,153           | 51             | 3,657 |
| 2010                  | 78       | 2,098          | 415              | 1,412           | 62             | 4,065 |
|                       |          |                |                  |                 |                | 471   |
|                       |          |                |                  |                 |                | 12,631|
|                       |          |                |                  |                 |                | 2,877 |
|                       |          |                |                  |                 |                | 7,830 |
|                       |          |                |                  |                 |                | 335   |
|                       |          |                |                  |                 |                | 24,144|

Source: Federal Audit Clearinghouse Form SF-SAC data.
Mission types are defined by the SF-SAC’s TYPEOFENTITY: Hospitals (Type 2), Housing Agency (Type 3), Higher Education (Type 4), Local Education (Type 5), and Transit Agency (Type 6). Auditor classification is based on an analysis of the SF-SAC’s CPAFIRMNAME: Big 4, Top 25, Specialist (more than 50 single audits during a year), Other (with 11 to 49 single audits during a year), and Low 10 (ten or fewer single audits during a year) are defined in Appendix A.
Our FINDING dependent variable reflects three financial statement-related findings: (1) whether the opinion was other than unqualified (QUALOPIN_FS), (2) an indexed variable that captures the degree of any internal control deficiencies associated with financial reporting (INDEX_ICDs_FS), which reflects a value of 0 if there are no internal control deficiencies, 1 if there are one or more reportable conditions, or 2 if there are one or more material weaknesses, and (3) whether any noncompliance material to the financial statements was identified (NONCOMPLY). Our model also examines four FINDING results associated with major programs: (1) whether the opinion was other than unqualified (QUALOPIN_MP), (2) an indexed variable that captures the degree of any internal control deficiencies over major programs (INDEX_ICDs_MP), which reflects a value of 0 if there are no internal control deficiencies, 1 if there are one or more reportable conditions, or 2 if there are one or more material weaknesses, respectively, (3) whether any questioned costs were identified (Q_COSTS), and (4) whether any findings affected direct federal funding (CY_FINDINGS).

RQ1a explores the potential differences in financial statement findings based on auditee type. Because of the similarity of financial statement users for client types (governments and nonprofits), we do not predict differences in the findings between the two. However, the complexity in financial reporting for state and local governments may cause more frequent audit findings than nonprofit counterparts. This possibility is indicated with a negative coefficient on the dichotomous nonprofit variable in each of the financial statement finding models, but particularly for the first model, which includes a dependent variable equal to 1 if the audit resulted in any opinion other than an unqualified opinion. We tentatively predict no difference between the single audit findings of the two auditee types because the compliance requirements for a given grant are similar between the two. However, the significant growth in federal funding of nonprofit organizations may have implications for nonprofit organizations' development of grant management systems. If nonprofit organizations have less-developed grant management processes, we expect positive coefficients on the dichotomous nonprofit variables in the major program models, particularly the third model, which considers questioned costs, i.e., costs allocated to federal grants not supported by documentation.

Our second set of research questions incorporates the potential effects of audit firm size and expertise (BIG4, TOP25, SPECIALIST, and LOW10) on single audit findings. Consistent with DeAngelo (1981), Tate (2009) finds evidence of a positive association between firm size

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17 We use the term qualified audit opinion, consistent with the Federal Audit Clearinghouse (FAC) for the time period of our sample. For fiscal years ending on or after December 15, 2012, the AICPA Professional Standard AU-C Section 705 changed the terminology from qualified to modified audit opinion. Similarly, we use the term reportable condition, consistent with the FAC for the time period of our sample. For fiscal years ending on or after December 15, 2009, the AICPA Professional Standard AU Section 325 changed the terminology from reportable condition to significant deficiency.

18 CY_FINDINGS, similar to other dependent variables included in this study, is obtained from the Federal Audit Clearinghouse database, and relies on the response to a question about whether findings (internal control deficiencies or compliance findings) are related to direct federal funding. The goal of this question is to determine whether direct federal funding may be affected by audit findings. Although correlated with other dependent variables considered, it is a separate construct. See the discussion of pairwise correlations in the “Results” section.

19 In addition to the LOW10 specification, we also consider an alternative measure, LOW5, equal to 1 if the audit firm performed five or fewer single audits in a specified year. Thirty (16) percent of our 24,144 sample observations are associated with audit firms conducting ten (five) or fewer single audits in a specified year. This alternative measure of low expertise produces similar results. Results for both measures of low expertise are consistent with intuition—firms with less single audit expertise are less likely to identify audit findings.
and major program findings. However, in contrast with DeAngelo (1981), Tate (2009) finds a negative association between firm size and internal control deficiencies. Tate’s (2009) results are also consistent with other nonprofit studies (e.g., Keating et al. 2005; Petrovits et al. 2011; López et al. 2013; Pridgen and Wang 2012). Thus, we expect a positive (negative) coefficient of the dichotomous firm size variables (BIG4 and TOP25) in the major program findings (financial statement findings) models. Although not formally predicted, low expertise, as indicated by LOW10, is expected to be associated with fewer financial statement and major program findings.

We include interaction terms between the nonprofit variable and each of the auditor types: BIG4, TOP25 (excluding BIG4), SPECIALIST, and LOW10. Although we make no predictions about the coefficients on the interaction terms, inclusion is warranted given the potential for a given firm type to approach government audits differently than nonprofit audits.

We also include a series of control variables for size, funding dependence, and relative risk. The natural log of total revenue represents a proxy for size. Size can be associated with more findings based on the complexity of larger organizations, but can be associated with fewer findings based on larger organizations having the resources to implement sufficient controls and appropriate compliance management. In terms of funding dependence, we include (1) the ratio of total federal expenditures to total revenue, and (2) the total number of federal agencies from which the auditee received and expended grant awards. We expect greater funding dependence to be associated with greater oversight and therefore more audit findings. We also control for whether the auditee was identified as low risk based on OMB guidelines, whether the auditee had major program findings in the prior year, and whether the auditee is assigned a cognizant agency. We expect low risk to be negatively associated with audit findings, and major program findings in the prior year to be positively associated with audit findings.

20 For the nonprofit organizations in our sample, total revenue is from the National Center for Charitable Statistics (NCCS) Core data. For the governments in our sample, total revenue is from two sources. For the government housing agencies in our sample, we obtained this variable from HUD. For the remaining governments (missions include hospitals, higher education, local education, and transit agency), we obtained total revenue from the U.S. Census Bureau. The unique identifier from our primary database from FAC is unavailable in both the HUD and U.S. Census Bureau databases. Therefore, we use a fuzzy match process to merge the government datasets to the FAC data. Assessments by the authors ensure that each match is appropriate.

21 Revenue and/or assets may be more precise measures of size than federal expenditures, as the degree to which an auditee relies on federal grant funding may vary (Keating et al. 2005; Petrovits et al. 2011). We use total revenue, as it more accurately captures size than total federal expenditures, which has also been used in the single audit literature (López and Peters 2010; Tate 2009).

22 The OMB has specific criteria for establishing whether an auditee can be considered low risk. Although there are exceptions, an auditee must be audited on an annual basis for the preceding two years and demonstrate financial statements that (1) have received an unqualified audit opinion, (2) have no internal control deficiencies that were determined to be material weaknesses, and (3) have no material noncompliance. In addition, related to major programs, auditees must (1) have no internal control deficiencies that were determined to be material weaknesses, and (2) have no known or likely questioned costs above a specified threshold (OMB 2007).

23 Auditees are assigned a cognizant agency or an oversight agency that is responsible for overseeing the audit results. This agency generally provides the most significant portion of federal funding to the auditee. Auditees assigned a cognizant agency are larger than those assigned an oversight agency. During the period of our sample, cognizant agencies were assigned when an auditee expended more than $50 million (OMB 2007).
RESULTS

Descriptive Statistics

In Table 2, Panel A we present descriptive statistics for the various reported single audit findings (dependent variables) and independent variables used in the regression analyses. In addition, we present t-tests for differences in these variables (both dependent and independent) based on auditee type (state/local government or nonprofit) and based on whether the auditor is a specialist (Big 4, Top 25, and Specialist) or non-specialist (Other and low expertise). Panel B presents the results within auditee type subsamples for specialist versus other auditors (i.e., non-specialists).

Table 2, Panel A shows that nonprofit auditees are more likely to have a Big 4 or Top 25 firm, are smaller on average with average total revenues of $41.64 million (compared to $60.98 million for state and local governments), are significantly more reliant on federal funding, receive funding from fewer federal agencies, and are less likely to be categorized as low risk. Furthermore, nonprofit organizations have fewer audit findings related to financial statements including financial statement opinions, internal controls, and noncompliance that is material to the financial statements. Related to major programs, however, nonprofit organizations generally have more instances of questioned costs (8.0 percent) than government auditees (5.9 percent), and current-year findings that affect direct federal funding (23.4 percent versus government auditees with 11.1 percent).

Table 2, Panel A also shows that specialist auditors are more likely than non-specialist auditors to have clients that are nonprofit (53.6 percent versus 51.1 percent), larger ($125.4 million in revenues compared to $27 million), less reliant on federal funding (47.5 percent compared to 58.5 percent), and lower risk (70.6 percent compared to 69.1 percent). Specialist auditors report more single audit findings than non-specialist auditors for every finding type except two. There is no statistical difference between the number of qualified opinions reported by specialist and non-specialist auditors, and specialist auditors report fewer instances of noncompliance that are material to the financial statements (2.8 percent compared to 4.1 percent for non-specialist auditors).

Table 2, Panel B presents descriptive statistics and t-tests comparing government and nonprofit auditees within each auditor type—specialist and non-specialist, as well as comparing specialist and non-specialist auditors within each auditee type. Within specialist auditors, nonprofit clients are less likely to have audit findings for most finding types, including questioned costs (Column A — Column B). Within non-specialist auditors, differences between government and nonprofit clients are similar to those noted for specialist auditors; however, among non-specialist auditors, nonprofit clients are more likely to have questioned costs reported (Column C — Column D).

Consistent with Table 2, Panel A, within client type (either government or nonprofit), specialist auditors generally report more audit findings than non-specialist auditors (Column A — Column C, and Column B — Column D). One exception, which is also consistent with the results in Panel A, is that within both government and nonprofit clients, specialist auditors report fewer instances of noncompliance that are material to the financial statements.

Table 3 presents the pairwise correlations between the variables included in the regression models. The correlations generally support the descriptive statistics presented above. The seven dependent variables are positively correlated, as expected, ranging from 0.061 between qualified financial statement opinion and questioned costs to 0.580 between the internal control
### TABLE 2
Univariate Tests of Client Type by Auditor

Panel A: Full Sample by Client and A-133 Specialist Compared to Other Auditors

| A-133 Specialist and Non-Specialist Auditors |
|------------------------------------------------|
| Overall | A-133 Specialist Auditors | Non-Specialist Auditors | Diff. |

| Variable | A | B | (A – B) | C | D | (C – D) | Diff. |
|----------|---|---|---------|---|---|---------|-------|
| QUALOPIN_FS | 0.013 | 0.019 | 0.007 | 0.013 | 0.013 | 0.013 | *** |
| RC_FS | 0.177 | 0.220 | 0.137 | 0.195 | 0.172 | 0.062 | ** |
| MW_FS | 0.065 | 0.080 | 0.051 | 0.073 | 0.062 | 0.062 | *** |
| INDEX_ICDs_FS | 0.248 | 0.307 | 0.192 | 0.277 | 0.238 | 0.238 | *** |
| NONCOMPLY | 0.037 | 0.046 | 0.030 | 0.028 | 0.041 | 0.041 | *** |
| QUALOPIN_MP | 0.056 | 0.054 | 0.059 | 0.074 | 0.051 | 0.051 | *** |
| RC_MP | 0.146 | 0.150 | 0.141 | 0.199 | 0.128 | 0.128 | *** |
| MW_MP | 0.039 | 0.048 | 0.030 | 0.043 | 0.037 | 0.037 | * |
| INDEX_ICDs_MP | 0.187 | 0.202 | 0.174 | 0.248 | 0.168 | 0.168 | *** |
| Q_COSTS | 0.070 | 0.059 | 0.080 | 0.096 | 0.062 | 0.062 | *** |
| CY_FINDINGS | 0.174 | 0.111 | 0.234 | 0.226 | 0.158 | 0.158 | *** |
| NP | 0.516 | 0.000 | 1.000 | NA | 0.536 | 0.536 | *** |
| BIG4 | 0.059 | 0.017 | 0.098 | ** | — | — | — |
| TOP25 | 0.059 | 0.033 | 0.084 | ** | — | — | — |
| SPECIALIST | 0.126 | 0.184 | 0.072 | ** | — | — | — |
| OTHER | 0.453 | 0.457 | 0.450 | — | — | — | — |
| LOW10 | 0.303 | 0.309 | 0.297 | * | — | — | — |
| REVENUE ($ millions) | 51.003 | 60.983 | 41.642 | ** | 125.438 | 26.996 | *** |
| FEDEXPRATIO | 0.558 | 0.317 | 0.784 | ** | 0.475 | 0.585 | *** |
| TOTALAGENCIES | 1.966 | 2.567 | 1.403 | ** | 2.311 | 1.855 | *** |
| LOW_RISK | 0.694 | 0.734 | 0.657 | ** | 0.706 | 0.691 | * |
| PY_FINDINGS | 0.161 | 0.112 | 0.208 | ** | 0.188 | 0.153 | *** |
| COGNIZANT | 0.029 | 0.034 | 0.023 | ** | 0.076 | 0.013 | *** |

n = 24,144

(continued on next page)
### TABLE 2 (continued)

**Panel B: A-133 Specialist and Other Auditors by Client**

|                      | A-133 Specialist Auditors | Non-Specialist Auditors |
|----------------------|---------------------------|-------------------------|
|                      | A                         | B                       | C                         | D                         | (A - B) Diff. | (A - C) Diff. | (B - D) Diff. | (C - D) Diff. |
| **Government Clients** | **Nonprofit Clients**     | **Government Clients**  | **Nonprofit Clients**     |                           |               |               |               |               |
| QUALOPIN_FS          | 0.023                     | 0.004                   | 0.018                     | 0.008                     | ***            | ***            | *              | ***            |
| RC_FS                | 0.252                     | 0.146                   | 0.211                     | 0.134                     | ***            | ***            | ***            | ***            |
| MW_FS                | 0.093                     | 0.056                   | 0.075                     | 0.050                     | ***            | **            | ***            | ***            |
| INDEX_ICDs_FS        | 0.358                     | 0.207                   | 0.291                     | 0.187                     | ***            | ***            | ***            | ***            |
| NONCOMPLY            | 0.036                     | 0.021                   | 0.049                     | 0.033                     | ***            | **            | ***            | ***            |
| QUALOPIN_MP          | 0.066                     | 0.082                   | 0.050                     | 0.051                     | *              | **            | ***            | ***            |
| RC_MP                | 0.215                     | 0.186                   | 0.130                     | 0.126                     | **            | ***            | ***            | ***            |
| MW_MP                | 0.057                     | 0.031                   | 0.045                     | 0.029                     | ***            | *             | ***            | ***            |
| INDEX_ICDs_MP        | 0.279                     | 0.221                   | 0.178                     | 0.158                     | ***            | ***            | ***            | **             |
| Q_COSTS              | 0.106                     | 0.087                   | 0.045                     | 0.078                     | *             | ***            | ***            | ***            |
| CY_FINDINGS          | 0.12                      | 0.318                   | 0.108                     | 0.206                     | ***            | ***            | ***            | ***            |
| REVENUE ($ millions) | 111.000                   | 137.900                 | 45.710                    | 8.980                     | **            | ***            | ***            | ***            |
| FEDEXPRATIO          | 0.322                     | 0.608                   | 0.316                     | 0.844                     | ***            | ***            | ***            | ***            |
| TOTALAGENCIES        | 2.698                     | 1.977                   | 2.527                     | 1.208                     | ***            | ***            | ***            | ***            |
| LOW_RISK             | 0.738                     | 0.678                   | 0.733                     | 0.650                     | ***            | **            | ***            | ***            |
| PY_FINDINGS          | 0.113                     | 0.252                   | 0.111                     | 0.194                     | ***            | ***            | ***            | ***            |
| COGNIZANT            | 0.069                     | 0.082                   | 0.024                     | 0.003                     | ***            | ***            | ***            | ***            |

n = 2,732 3,156 8,954 9,302

* *, **, *** Denote significance at the < 0.10, < 0.05, and < 0.01 levels, respectively, for two-tailed tests of difference of sample means.

For purposes of this table, specialist auditors include Big 4, Top 25, and Specialist firms, and non-specialists include Other (between 11 and 49 single audits during a year) and Low 10 (ten or fewer single audits during a year). Reported in raw values above, revenue and federal expenditures are included as log transformations in the logit models in Tables 4 and 5.

Variables are defined in Appendix A.
### TABLE 3
Correlations among Variables

#### Panel A: Correlations among Variables for QUALOPIN_FS to BIG4

|   | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | QUALOPIN_FS | 1.000 |       |       |       |       |       |       |       |
| 2 | INDEX_ICDs_FS | 0.160 | 1.000 |       |       |       |       |       |       |
| 3 | NONCOMPLY | 0.153 | 0.318 | 1.000 |       |       |       |       |       |
| 4 | QUALOPIN_MP | 0.168 | 0.201 | 0.271 | 1.000 |       |       |       |       |
| 5 | INDEX_ICDs_MP | 0.144 | 0.461 | 0.283 | 0.511 | 1.000 |       |       |       |
| 6 | Q_COSTS | 0.061 | 0.168 | 0.185 | 0.261 | 0.337 | 1.000 |       |       |
| 7 | CY_FINDINGS | 0.057 | 0.240 | 0.180 | 0.395 | 0.580 | 0.403 | 1.000 |       |
| 8 | NP/C0 | 0.050 | 0.102 | 0.043 | 0.011 | 0.041 | 0.163 | 0.030 | 0.041 |
| 9 | BIG4/C0 | 0.015 | 0.051 | 0.037 | 0.018 | 0.057 | 0.122 | 0.172 | 1.000 |
| 10 | TOP25/C0 | 0.010 | 0.072 | 0.002 | 0.009 | 0.074 | 0.012 | 0.081 | 0.108 |
| 11 | SPECIALIST/C0 | 0.017 | 0.024 | 0.014 | 0.063 | 0.031 | 0.026 | 0.163 | 1.000 |
| 12 | LOW10/C0 | 0.009 | 0.007 | 0.009 | 0.026 | 0.036 | 0.003 | 0.054 | 0.014 |
| 13 | REVENUE/C0 | 0.006 | 0.000 | 0.009 | 0.016 | 0.005 | 0.079 | 0.061 | 0.045 |
| 14 | FEDEXPRATIO/C0 | 0.027 | 0.022 | 0.008 | 0.078 | 0.031 | 0.003 | 0.188 | 0.588 |
| 15 | TOTALAGENCIES/C0 | 0.014 | 0.010 | 0.034 | 0.046 | 0.034 | 0.075 | 0.053 | 0.429 |
| 16 | LOW_RISK/C0 | 0.095 | 0.243 | 0.146 | 0.230 | 0.262 | 0.128 | 0.234 | 0.084 |
| 17 | PY_FINDINGS/C0 | 0.049 | 0.157 | 0.098 | 0.187 | 0.309 | 0.218 | 0.494 | 0.132 |
| 18 | COGNIZANT/C0 | 0.002 | 0.025 | 0.000 | 0.005 | 0.034 | 0.085 | 0.107 | 0.283 |

#### Panel B: Correlations among Variables for TOP25 to COGNIZANT

|   | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 10 | TOP25 | 1.000 |       |       |       |       |       |       |       |
| 11 | SPECIALIST | -0.095 | 1.000 |       |       |       |       |       |       |
| 12 | LOW10 | -0.165 | -0.250 | 1.000 |       |       |       |       |       |
| 13 | REVENUE | 0.047 | -0.035 | -0.085 | 1.000 |       |       |       |       |
| 14 | FEDEXPRATIO | 0.020 | -0.061 | -0.057 | -0.233 | 1.000 |       |       |       |
| 15 | TOTALAGENCIES | -0.005 | 0.028 | -0.004 | 0.458 | -0.608 | 1.000 |       |       |
| 16 | LOW_RISK | 0.003 | -0.025 | -0.018 | 0.051 | -0.119 | 0.114 | 1.000 |       |
| 17 | PY_FINDINGS | 0.059 | -0.069 | -0.036 | 0.069 | 0.164 | -0.035 | -0.306 | 1.000 |
| 18 | COGNIZANT | 0.058 | -0.033 | -0.088 | 0.541 | -0.075 | 0.384 | 0.021 | 0.116 |

The table reports Pearson correlations for all variables. The sample comprises 24,144 firm-year observations covering the period 2004–2010. Correlations greater than 0.01 in absolute value are significant at the 0.001 level (two-tailed). Variables are defined in Appendix A.
deficiencies index for major programs and current-year findings that affect direct federal funding. Nonprofit organizations are associated with fewer audit findings related to financial statements but more audit findings related to most major program findings, including opinions on major programs, questioned costs, and current findings that affect direct federal funding. Top 25 and specialist firms reflect positive associations with five and six of the findings variables, respectively, more than Big 4 and low expertise firms. The ratio of federal expenditures to total revenue, a proxy for reliance on federal grants, is positively associated with each of the four major program audit findings, but is negatively associated with each of the three financial statement audit findings.

### Empirical Results

Tables 4 and 5 present the results from the logit and ordered logit regressions. Table 4 reports the empirical results related to the financial statement findings: qualified audit opinion (Model 1), indexed internal control deficiencies related to financial statements (Model 2), and whether noncompliance material to the financial statements was identified (Model 3). In Models 1 through 3, pseudo-$R^2$ values range from 0.125 to 0.164.

Control variables generally behave as expected. Size, measured as the natural log of total revenues, is positively associated with the indexed internal control deficiencies (Model 2) and noncompliance material to the financial statements (Model 3). Reliance on federal expenditures, as well as complexity, measured as the total number of federal agencies through which federal grant awards are expended, are both positively associated with material noncompliance (Model 3). As expected, low risk is negatively associated with findings in all three models, and prior-year findings are positively associated with findings in all three models.

Qualified audit opinions and indexed internal control deficiencies related to financial statements are less frequent for nonprofits (Models 1 and 2). These results hold in specifications not reported that exclude the interaction terms involving the nonprofit variable. This result is consistent with the complexity of the governmental financial reporting model which increases qualifications and control deficiencies for state and local governments, although the association is not statistically significant in the material noncompliance specification (Model 3).

Low expertise firms ($LOW10$) are associated with fewer modifications of the audit opinion (Model 1) when compared to our reference group of moderate expertise firms. As shown in Model 2, however, firms with expertise ($BIG4$ and $SPECIALIST$) are associated with fewer internal control deficiencies (Model 2). Top 25 firms (excluding Big 4) reflect no statistically significant

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24 Although the dependent variables are significantly correlated, they are not as correlated as might be expected. The highest of the 21 pairwise correlations noted is 0.580, and one of the variables, current-year findings, captures whether any of the other findings affect direct federal funding. In other words, the average rate of current-year findings of 17.4 percent, noted in Table 2, Panel A, indicates that there were internal control deficiencies or questioned costs related to direct federal funding. Among the remaining 15 pairwise correlations, when current-year findings are excluded, the highest correlation is 0.511, and seven are below 0.20. With the exception of current-year findings, the dependent variables all capture separate elements of the objectives of the single audit.

25 The $PY\_FINDINGS$ variable is obtained from the FAC. Prior-year findings are those that affected direct federal funding in the immediately preceding year. If the auditee was not subject to a single audit in the immediately preceding year, this variable is 0. In sensitivity analyses, we run each of the models only for those auditees that had a single audit in the immediately preceding year.
The results are generally consistent with findings in studies

Because the regression results for the auditor categories can depend on the selected omitted reference group, we also performed separate tests to directly compare the coefficients of auditors with expertise (including Big 4, Top 25, and specialist) and low expertise auditors (LOW10). Results indicate that LOW10 firms are less likely than specialist auditors to report qualified audit opinions (Model 1) but more likely to report noncompliance material to the financial statements (Model 3).
that examine the audit findings solely in the nonprofit setting. For example, Tate (2009) finds that Big 5 firms are associated with fewer qualified audit opinions and fewer internal control deficiencies, and Petrovits et al. (2011) find that Big 4 firms and specialist audit firms are less likely to report reportable conditions.

We also note some interaction effects (\(NP \times TOP25\) in Model 2, \(NP \times SPECIALIST\) in Models 2 and 3, and \(NP \times LOW10\) in Models 1 and 2). Only the \(BIG4\) variable indicates no moderating effect with the nonprofit variable in any of the models. Top 25, specialist, and low expertise firms are all more likely to report internal control deficiencies for their nonprofit clients. Although we made no prediction for the interaction terms, the significance of these coefficients suggest that audit firms approach elements of the single audit engagement differently depending upon auditee type.

Table 5 reports the empirical results related to the major program findings: qualified audit opinion (Model 1), indexed internal control deficiencies related to major programs (Model 2), whether questioned costs (i.e., costs allocated to a grant are inappropriate or unsubstantiated) are identified (Model 3), and whether current-year findings were noted that affect direct federal funding (Model 4). In Models 1 through 4, pseudo-\(R^2\) values range from 0.134 to 0.295. Size, measured as the natural log of total revenues, is positive and significant in Models 2, 3, and 4. Reliance on federal expenditures is positive and significant in all four models. Consistent with the results in Table 4, low risk is negatively associated with findings and prior-year findings are positively associated, in all four models.

Although we did not predict a direction of differences in major program findings between nonprofit and government auditee types in RQ1b, we note a positive association between nonprofit organizations and questioned costs (Model 3), but an inverse association with the audit findings considered in the other three models: qualified audit opinions on major programs (Model 1), indexed internal control deficiencies related to major programs (Model 2), and current-year findings that affect direct federal funding (Model 4). Furthermore, the nonprofit variable behaves similarly in separate analyses that exclude the interaction terms involving the nonprofit variable. The OMB (2003) defines questioned costs as those known questioned costs greater than $10,000, whether resulting from an inappropriate allocation of costs to a federal grant or an allocation lacking adequate supporting documentation. The compliance aspect of this finding may be more easily managed by government auditees than nonprofit auditees.

In Table 5, we also note that, relative to firms with moderate single audit expertise, Big 4 and specialist firms are positively associated with certain major program findings in some instances. \(BIG4\) firms are positive and significant in Models 3 and 4, and \(SPECIALIST\) firms are positive and significant in Model 3. \(LOW10\) firms are negative and significant in Models 2 and 4.\(^{27}\) These results provide some evidence that firms with greater single audit expertise are associated with more findings, as posed in the discussion of RQ2b. The results are generally consistent with results in the nonprofit setting. Tate (2009) finds that Big 5 audit firms are positively associated with questioned costs (Model 3) and current-year findings (Model 4).

We also note that there are some interaction effects between the dichotomous nonprofit variable with Big 4 firms (negative in Model 3), with Top 25 firms (positive in Model 2), with specialist firms (positive in Models 1 and 4, and negative in Model 3), and with low expertise firms (positive in Models 2, 3, and 4). The coefficients on these interaction terms may suggest a different approach by a given firm type to government and nonprofit clients.

\(^{27}\) We also performed separate tests to directly compare the coefficient of auditors with expertise (Big 4, Top 25, and specialist) and auditors with low expertise (\(LOW10\)). In all four models, the coefficient for \(LOW10\) is significantly smaller than the coefficient for the group of expert auditors.
In untabulated analyses, we match government and nonprofit clients based on revenues (within 5 percent), mission type of the entity, whether the audit firm has expertise (i.e., whether the firm conducted more than 50 single audits in one year, which results in inclusion of all Big 4, Top
Matching without replacement results in a reduced sample of 4,708, including 2,354 governments and 2,354 nonprofit auditees. Paired t-tests support our finding that nonprofit organizations have more questioned costs than their government counterparts. However, the finding that nonprofit organizations have fewer internal control deficiencies related to financial statements (Model 2 in Table 4) is not evident in the univariate paired t-tests. The results indicated in the primary analyses hold within the subsample of audit firms lacking expertise (i.e., performing fewer than 50 single audits in a specified year). We replicate the regression analyses in Tables 4 and 5 using the reduced sample of matched observations (n = 4,708) with similar results as the main tests.

CONCLUSION

The single audit represents a critical accountability mechanism among entities that receive and expend significant amounts of federal grant awards. Both governments and nonprofit organizations participate in these awards, which suggests a comparison of the two client types. Our study represents the first to consider both single auditee types in one sample. Furthermore, our study includes the full complement of audit findings produced by the single audit, and we separately consider the impact of extreme measures of low expertise. The results indicate that nonprofit organizations have fewer internal control deficiencies, but more instances of questioned costs. Questioned costs relate to an auditee’s compliance with laws, regulations, and grant provisions, a key element of accountability and an aspect of single audits that differs from the typical financial statement audit. Robust to alternate specifications, including a matched pair design, this result is consistent with the noted growth in federal awards to nonprofit organizations and may suggest that government auditees more effectively manage grant management processes than their nonprofit counterparts.

While our focus is on client type, we also consider audit firm size/expertise and potential interaction effects. Overall, the results suggest that audit firms with less single audit expertise are less likely to report audit findings, especially those related to their client’s major programs.

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28 We match on covariates rather than use propensity score matching (PSM) because of some of the issues noted with PSM (Shipman, Swanquist, and Whited 2017).
29 Matching with replacement would result in a larger sample, but may result in a sample that is not representative. As depicted in Table 1, Panel A, a particular mission (i.e., hospital, housing, higher education, local education, transit agency) is generally dominated by one auditee type, either government or nonprofit. For this reason, we use matching without replacement.
30 The primary finding that nonprofit organizations report fewer internal control deficiencies related to major programs (Model 2 in Table 5) is supported by the paired t-tests.
31 We consider five additional specifications: (1) alternatives to the indexed internal control deficiencies measures (replicating using binary measures for reportable conditions and material weaknesses), (2) additional interaction terms (a dichotomous nonprofit variable with revenues and also with federal grant dependence), (3) specifications that use alternative lagged dependent variables rather than PY_FINDINGS, (4) specifications only including the three largest mission types (housing, higher education, and local education), and (5) bifurcation of our sample period into the periods preceding and following the implementation of Statement of Auditing Standards No. 112, Communicating Internal Control Related Matters Identified in an Audit (AICPA 2006) effective in 2007. Our inferences are unchanged in each of the five alternate specifications. However, we note that in the second sensitivity test, the coefficient of the interaction term with nonprofits and revenues (as a proxy for size) is significant in some of the major program findings models (Table 5). The interaction term suggests that larger nonprofits are less likely to have compliance-related findings, but there is still a main effect of the dichotomous nonprofit variable, i.e., nonprofits are more likely to have questioned costs.
Furthermore, auditee type and audit firm type interaction effects suggest that some firm types approach nonprofit clients differently than government clients.

Our research informs subsequent updates to the National Single Audit Sampling Project that focuses on single audit quality (PCIE 2007). The PCIE has previously focused primarily on auditee size as the primary determinant of single audit quality; our results suggest that additional factors such as auditee type and audit firm expertise warrant consideration in future updates.

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### APPENDIX A

**Variable Definitions**

| Variable Name | Description |
|---------------|-------------|
| **Dependent Variables (FINDING) related to financial statements (from SF-SAC data):** | |
| QUALOPIN_FS   | 1 if the audit resulted in a qualified opinion on the financial statements, 0 otherwise; |
| INDEX_ICDs_FS | 2 if the audit revealed any reportable condition in the internal controls over financial statements classified as a material weakness, 1 if the audit revealed a reportable condition not classified as a material weakness, 0 otherwise; |
| NONCOMPLY     | 1 if the audit revealed any noncompliance that was material to the financial statements, 0 otherwise; |
| **Dependent Variables (FINDING) related to major programs (from SF-SAC data):** | |
| QUALOPIN_MP   | 1 if the audit resulted in a qualified opinion on major programs, 0 otherwise; |
| INDEX_ICDs_MP | 2 if the audit revealed any reportable condition in the internal controls over major programs classified as a material weakness, 1 if the audit revealed a reportable condition not classified as a material weakness, 0 otherwise; |
| Q_COSTS       | 1 if the audit of the revealed questioned costs greater than $10,000, 0 otherwise; |
| CY_FINDINGS   | 1 if current-year findings affecting direct funds were reported, 0 otherwise; |
| **Independent Variables of Interest (from SF-SAC data):** | |
| NP            | 1 if the auditee is a nonprofit entity, 0 if the auditee is a governmental entity; |
| AUDITOR TYPE: | |
| BIG4          | 1 if the auditor is one of the following firms: Deloitte, EY, KPMG, or PricewaterhouseCoopers, 0 otherwise; |
| TOP25         | 1 if the auditor is identified by the GAO (2003) as one of the 25 largest CPA firms, excluding the Big 4, 0 otherwise; |
| SPECIALIST    | 1 if the auditor has 50 or more single audits during a year and is not BIG4 or TOP25, 0 otherwise; |
| OTHER         | 1 if the auditor is a firm with 11 to 49 single audits during a year, 0 otherwise; |
| LOW10         | 1 if the auditor is a firm with ten or fewer single audits during a year, 0 otherwise; |
| **Independent Control Variables:** | |
| lnREVENUE     | natural logarithm of revenue for the fiscal year;<sup>a</sup> |
| FEDEXPRATIO   | total amount of federal awards expended during the fiscal year (from SF-SAC data) divided by total revenue for the fiscal year; |
| TOTALAGENCIES | total number of federal agencies from which the auditee received and expended federal grant awards (from SF-SAC data); |
| LOW_RISK      | 1 if the auditee was identified as low risk based on single audit criteria, 0 otherwise (from SF-SAC data); |
| PY_FINDINGS   | 1 if the single audit submission includes a Summary Schedule of Prior Year Audit Findings, 0 otherwise (from SF-SAC data); and |
| COGNIZANT     | 1 if the auditee is assigned a cognizant agency, 0 otherwise (from SF-SAC data); |

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<sup>a</sup> Most of the data are from the Federal Audit Clearinghouse Form SF-SAC. Sources for the variable lnREVENUE are (1) NCCS Core data for the nonprofits in the sample, (2) Department of Housing and Urban Development for the government housing agencies, and (3) the U.S. Census Bureau for other governments mission types (hospitals, higher education, local education, and transit agencies).